

**Федеральное государственное автономное образовательное
учреждение высшего образования
«Московский физико-технический институт
(национальный исследовательский университет)»**

УТВЕРЖДЕНО
Проректор по учебной работе

А.А. Воронов

	Рабочая программа дисциплины (модуля)
по дисциплине:	Английский язык для специальных целей
по направлению:	Прикладная математика и информатика
профиль подготовки:	Прикладная математика, компьютерные науки и инженерия Физтех-школа Прикладной Математики и Информатики департамент иностранных языков
курс:	1
квалификация:	бакалавр

Семестры, формы промежуточной аттестации:

- 1 (осенний) - Зачет
- 2 (весенний) - Дифференцированный зачет
- 3 (осенний) - Зачет
- 4 (весенний) - Дифференцированный зачет
- 5 (осенний) - Зачет
- 6 (весенний) - Дифференцированный зачет

Аудиторных часов: 360 всего, в том числе:

лекции: 0 час.

семинары: 360 час.

лабораторные занятия: 0 час.

Самостоятельная работа: 180 час.

Всего часов: 540, всего зач. ед.: 12

Количество контрольных работ, заданий: 12

Программу составили:

В.А. Авдеева, старший преподаватель

Е.М. Базанова, канд. пед. наук, доцент, доцент

А.В. Горизонтова, канд. ист. наук, доцент

А.С. Денисова, старший методист

О.В. Космодемьянская, старший методист

А.В. Ламзина, канд. филол. наук, доцент

А.И. Лыкова, старший методист

О.В. Маруневич, канд. филол. наук, доцент, доцент

А.А. Полонская, ассистент

Н.Л. Саввина, старший преподаватель

О.В. Шадрина, старший преподаватель

Н.В. Цытулина, заместитель руководителя по учебно-методической работе

Программа обсуждена на заседании департамента иностранных языков 27.02.2025

Аннотация

Рабочая программа дисциплины «Английский язык для специальных целей» имеет модульную структуру и предназначена для обучающихся, начинающих изучение английского языка с уровня A1 до уровня C1. В основе программы лежит принцип достаточности и необходимости учебного материала для достижения целей и задач обучения, а также принцип доступности учебного материала, чтобы соответствовать уровню обучающихся, их интересам и задачам и способствовать успешному усвоению материала. Длительность освоения дисциплины (модуля) 3 года по 4 академических часа в неделю.

Программные требования к уровню освоения:

Уровень A1 (L1): использовать в речи предложенные лексические единицы, грамматические конструкции, несложно представиться и использовать основные приветствия; сообщать о себе, своих интересах и хобби; описывать свое детство; задавать вопросы о себе и отвечать на них; описывать и сравнивать внешность, черты характера; рассказывать о семье, о своей любимой еде, о своих достижениях, радостях и трудностях университетской жизни.

Уровень B1/B1+ (L2): понимать общий смысл статей в журнале или на сайте; уметь писать простые и связные тексты на знакомые темы до 30 предложений; описывать личные переживания и размышлять о намерениях в личной переписке; читать адаптированную литературу на уровне B1 или неадаптированную A1 или A2; отличать деловую речь от неформальной и уметь быстро переключаться; вести рабочую переписку с помощью словаря; пересказывать сюжет прочитанного материала и выражать свое отношение; понимать около 65% слов в фильмах в оригинале или в интервью с носителем; не теряться в англоговорящих странах и уметь задать вопрос, уточнить информацию; проходить собеседование для работы за рубежом, понимая вопросы и рассказывая основные факты о себе; владеть 2500—3000 слов, а также фундаментальными грамматическими правилами; иметь в запасе несколько десятков идиом, вводных и соединительных конструкций и фразеологизмов.

Уровень B2/B2+ (L3): детально высказать своё мнение и подкрепить слова примерами; уверенно поддерживать разговор даже при неожиданных и спонтанных диалогах; реагировать на любые ситуации и отстаивать свою позицию; справляться с неадаптированной литературой: как специализированной, так и художественной; воспринимать на слух довольно длинные тексты без потери сути: выступления, прямые эфиры; составлять тексты на множество различных тем с деталями и стилистическими приемами.

Программа дисциплины содержит следующие модули:

Модуль 1. Английский язык для общих целей (General English) направлен на формирование межкультурной коммуникативной компетенции для начального этапа вузовской ступени иноязычной подготовки с уровня A1 (L1), а также продолжающих изучение с уровня B1 (L2) и B2 (L3) для повышения уровня владения межкультурной коммуникативной компетенции (по общеевропейской системе оценки уровня владения иностранным языком CEFR). В зависимости от уровня владения иностранным языком, программа модуля направлена на то, чтобы обучающиеся овладели необходимыми знаниями, умениями, навыками (в устной и письменной формах) для осуществления речевой деятельности в соответствии с целями и ситуациями межличностного взаимодействия в рамках социально-бытовой сферы деятельности. Модуль включает большое разнообразие форм работы, которые коррелируются друг с другом и усиливают эффективность образовательного процесса. В рамках программы модуля, обучающиеся уровня L1 освоят навыки письменной речи в написании письма личного характера. Обучающиеся уровня L2 освоят навыки в написании имейл-письма в неформальном стиле коммуникации, рассказа-повествования; информационного объявления в соцсетях убеждающего характера с призывом к действию; описания-отзыва на фильм; краткого резюме; эссе-мнения. Обучающиеся уровня L3 освоят навыки в написании текста-дискуссии или текста-комментария на заданную тему (пост как информационная единица блога); информационного объявления в соцсетях убеждающего характера с призывом к действию; отзыва на фильм, включающий в себя краткое описание, оценку и рекомендацию.

Модуль 1 предполагает следующие программные требования и виды промежуточной аттестации:

1 семестр – стартовый уровень A1/A1+ (L1); A2/B1 (L2); B1+/B2 (L3) (зачет);

2 семестр – итоговый уровень A1+/A2; B1/B1+; B2+/C1 (дифференцированный зачет).

Модуль 2. Английский язык для академических целей (English for Academic Purposes) направлен на повышение уровня владения межкультурной коммуникативной компетенции (по общеевропейской системе оценки уровня владения иностранным языком CEFR) и формирование компетенций для решения коммуникативных задач в социокультурной, академической сферах у обучающихся, продолжающих изучение английского языка с уровня A2/B1+/B2/B2+ и предполагает овладение видами речевой деятельности, формирование которых необходимо для функционирования в англоязычной академической среде: организация высказывания и использование соответствующих связок для его логического единства; умение задавать вопросы с различными целями (уточнение, просьба повторить или объяснить сказанное, дать дополнительную информацию); уклонение от ответа, перемена темы, учет особенностей аудитории и использование соответствующего регистра при говорении; использование конспекта или плана; использование риторических техник; умение использовать различные стратегии чтения (предпросмотр текста, позволяющий понять основную идею, связать имеющуюся в нем информацию со своим знанием по теме; детальное чтение и т.п.); умение идентифицировать цели и охват устного и/или письменного аутентичного текста, умение вводить в тему, последовательно излагать идеи, сравнивать и сопоставлять их, выражать согласие или несогласие, выражать мнения, излагать гипотезы, интерпретировать графические и табличные данные, описывать процессы, причинно-следственные отношения. Обучающиеся осваивают навыки написания реферата, эссе-объяснения, эссе-аргументации и эссе-объяснения проблемы и ее решения.

Модуль 2. предполагает следующие программные требования и виды промежуточной аттестации:

3 семестр – стартовый уровень A2+/B1 (2); B1+/B2 (L2) (зачет);

4 семестр – итоговый уровень B/B1+; B2/B2+/C1 (L3) (дифференцированный зачет).

Модуль 3. Английский язык для специальных целей (English for Specific Purposes) (выбор одного направления из трех возможных) для продолжающих изучение английского языка с уровня B1+/B2; B2+

3.1. Английский для исследовательских целей (English for Research Purposes) направлен на научно-исследовательское направление развития языковых навыков, которое ставит своей целью изучение правил речевого поведения, овладение коммуникативными стратегиями и тактиками, риторическими, стилистическими и языковыми нормами и приемами для осуществления профессионального межкультурного общения в научной среде (составлять научные презентации, доклады, выступления перед академической профессионально-ориентированной аудиторией (экспертной аудиторией); развитие критического и аналитического чтения; накопление профессионального словаря (гlossария) по научной тематике; дальнейшее совершенствование языковых навыков и компетенций, позволяющих осуществлять профессиональную устную и письменную коммуникацию в области научной и научно-исследовательской деятельности; формирование навыков подбора, анализа и работы с письменными источниками научно-исследовательского содержания; умений пользоваться основными иноязычными библиографическими стандартами; способностью дифференцировать жанровые особенности текстов разных форматов научно-исследовательского характера; освоение процесса написания научной статьи (учебная версия), редактирования и подготовки статьи к публикации в научном журнале или тезисов для научной конференции.

3.2. Английский для инженерии и технологий (English for Engineering and Technology) направлен на подготовку обучающихся к будущей иноязычной профессиональной деятельности, формирование умений письменной и устной речи в сфере технической коммуникации, развитие творческого, критического и аналитического мышления, а также формирование «мягких» навыков будущих инженеров. Курс предполагает изучение тематического, общенаучного и общетехнического словаря; чтение аутентичных профессионально-ориентированных, научно-популярных и научно-фантастических текстов; аудирование подкастов, интервью, лекций выдающихся ученых и изобретателей в области инженерии и технологий. Программа модуля включает составление технической документации, участие в дебатах и круглых столах, решение кейсов и задач ТРИЗ, обсуждение исследований в области эргономики и этики использования современных технологий дизайн и презентацию собственного инженерного прототипа.

3.3. Английский для предпринимательства и бизнеса (English for Business and Entrepreneurship) разработан с целью обучения культуре иноязычного устного и письменного общения в сфере деловых отношений (понимать англоязычные экономические термины, ориентироваться в основных закономерностях и тенденциях экономики, путях развития бизнеса как в своей стране, так и в мире) и ознакомления с ключевыми аспектами фундаментальных бизнес-концепций и их применением в реальных условиях. Особое внимание уделяется формированию профессионального терминологического аппарата (гlossария) в области бизнеса, совершенствованию языковых навыков и компетенций, необходимых для эффективной профессиональной коммуникации в устной и письменной форме в бизнес-среде, а также углублению понимания мировых бизнес-процессов и ключевых направлений. Содержание данного модуля позволяет получить новые знания, представляющие профессиональный и познавательный интерес для развития умений аналитического анализа при работе с аутентичными научно-популярными текстами, видеоматериалами (подкасты, лекции и интервью с известными предпринимателями), а также анализа бизнес-кейсов и участия в дебатах и круглых столах. В рамках программы модуля, обучающиеся осваивают навыки разработки бизнес-презентаций (pitch), а также изучают основы деловой переписки, включая составление бизнес-предложений (business proposal), отчетов (report) и сопроводительных писем (cover letter).

Модуль 3 предполагает программные требования и виды промежуточной аттестации:

5 семестр – стартовый уровень B1+/B2; B2+ (зачет);

6 семестр – итоговый уровень B2/B2+; C1 (дифференцированный зачет).

1. Цели и задачи

Цель дисциплины

Формирование и развитие социальных, деловых, межкультурных и профессионально-ориентированных коммуникативных компетенций по общеевропейской системе оценки уровня владения иностранным языком для решения коммуникативных задач в социально-бытовой, социокультурной, академической и профессионально-деловой сферах деятельности, а также для развития профессиональных и личностных качеств выпускников.

Задачи дисциплины

Сформировать способность обучающегося языковыми средствами решать коммуникативные задачи в различных ситуациях межкультурного общения, осуществлять межличностное и профессиональное общение на иностранном языке с учётом особенностей культуры изучаемого языка, а также умение преодолевать межкультурные различия в ситуациях в ситуациях общебытового, социального и профессионального общения. Для достижения целей и задач освоения дисциплины, обучающиеся должны овладеть иноязычной общепрофессиональной коммуникативной компетенцией, включающей в себя:

Профессионально ориентированную читательскую компетенцию: способность к пониманию и обработке текстовой информации профессиональной направленности.

Лингвистическую компетенцию: способность в соответствии с нормами изучаемого языка правильно конструировать грамматические формы и синтаксические построения.

Социолингвистическую компетенцию (способность использовать и преобразовывать языковые формы в соответствии с ситуацией иноязычного общения).

Социокультурную компетенцию: способность учитывать в общении речевое и неречевое поведение, принятое в стране изучаемого языка.

Социальную компетенцию: способность взаимодействовать с партнерами по общению, владение соответствующими стратегиями.

Дискурсивную компетенцию (способность понять и достичь связности отдельных высказываний в значимых коммуникативных моделях)

Стратегическую компетенцию: умение пользоваться наиболее эффективными стратегиями при решении коммуникативных задач.

Предметную компетенцию: знание предметной информации при организации собственного высказывания или понимания высказывания других людей.

Прагматическую компетенцию: умение выбирать наиболее эффективный и целесообразный способ выражения мысли в зависимости от условий коммуникативного акта и поставленной задачи.

2. Перечень формируемых компетенций

Освоение дисциплины направлено на формирование следующих компетенций:

Код и наименование компетенции	Индикаторы достижения компетенции
УК-3 Способен осуществлять социальное взаимодействие и реализовывать свою роль в команде	УК-3.1 Способен устанавливать разные виды коммуникации (учебную, научную, деловую, неформальную и др.)
	УК-3.2 Взаимодействует с другими членами команды для достижения поставленной задачи
УК-4 Способен осуществлять деловую коммуникацию в устной и письменной формах на государственном языке Российской Федерации и иностранном(ых) языке(ах)	УК-4.1 Демонстрирует умение вести обмен деловой информацией в устной и письменной формах на государственном языке Российской Федерации и не менее чем на одном иностранном языке
	УК-4.2 Использует современные информационно-коммуникативные средства для коммуникации
УК-5 Способен осмысливать культурное разнообразие общества в социально-историческом, этическом и философском аспектах	УК-5.1 Знает основные категории философии, законы исторического развития, основы межкультурной коммуникации
	УК-5.2 Имеет представление о системах этических и интеллектуальных ценностей и норм, их значении в истории общества
ОПК-3 Способен составлять и оформлять научные и (или) технические (технологические, инновационные) отчеты (публикации, проекты)	ОПК-3.1 Знает основные правила оформления научных публикаций и научно-технической документации, в том числе с использованием прикладного программного обеспечения
	ОПК-3.2 Владеет на практике методологией составления научно-технических отчетов (проектов)
	ОПК-3.3 Владеет методами визуального и графического представления результатов научной (научно-технической, инновационной технологической) деятельности в виде отчетов, научных публикаций

3. Перечень планируемых результатов обучения по дисциплине (модулю)

В результате освоения дисциплины обучающиеся должны знать:

- особенности видов речевой деятельности на английском языке;
- основные фонетические, лексические и грамматические явления и структуры, используемые в устной и письменной речи при общении на английском языке, их отличие от родного языка для аргументированного и логичного построения высказываний, позволяющих использовать изучаемый язык в повседневной, академической, научной, деловой и профессиональной коммуникации;
- межкультурные различия, культурные традиции и реалии, языковые нормы, социокультурные особенности поведения и речевого этикета страны изучаемого языка при устной и письменной межличностной коммуникации, межкультурном общении;
- виды коммуникативных намерений, соотношение коммуникативных намерений с замыслом и целью речевой коммуникации, типовые приемы и способы выражения коммуникативных намерений на английском языке в устной и письменной речи, принципы понимания коммуникативных намерений собеседников;
- особенности иноязычной академической коммуникации, приемы извлечения и сообщения иноязычной информации в академических целях;
- основы организации письменной коммуникации, типы коммуникативных задач письменного общения и функции письменных коммуникативных средств;
- специфику использования вербальных и невербальных средств в ситуациях иноязычной коммуникации;
- риторические приемы, используемые в различных видах коммуникативных ситуаций;
- виды и особенности письменных текстов и устных выступлений, общее содержание сложных текстов на абстрактные и конкретные темы, особенности иноязычных аутентичных текстов, универсальные закономерности структурной организации текста, в том числе узкоспециальных текстов;
- правила использования различных технических средств с целью поиска и извлечения иноязычной информации, основные правила определения релевантности и надежности иноязычных источников, анализа и синтеза информации;
- мировые достижения, открытия, события из области истории, культуры, политики, социальной жизни;
- общие формы организации групповой работы; особенности поведения и интересы других участников; основы стратегического планирования работы команды для достижения поставленной цели;
- стандартные типы коммуникативных задач, цели и задачи деловых переговоров, социокультурные особенности ведения деловых переговоров, коммуникативно-прагматические и жанровые особенности переговоров;
- основные виды, универсальные правила, нормы официальных и деловых документов, особенности их стиля и оформления деловой переписки;
- базовую лексику и терминологию для академического, научного и профессионального общения.

уметь:

- понимать и использовать языковые средства во всех видах речевой деятельности на английском языке;
- вести на английском языке в различных сферах общения: обиходно-бытовых, социально-культурных, общественно-политических, профессиональных;
- соблюдать речевой этикет в ситуациях повседневного и делового общения (устанавливать и поддерживать контакты, завершать беседу, запрашивать и сообщать информацию, побуждать к действию, выражать согласие/несогласие с мнением собеседника, просьбу);
- устно реализовать коммуникативное намерение с целью воздействия на партнера по общению начинать, вести/поддерживать и заканчивать диалог-расспрос об увиденном, прочитанном, диалог-обмен мнениями и соблюдая нормы речевого этикета, при необходимости используя стратегии восстановления сбоя в процессе коммуникации (переспрос, перефразирование и др.);
- письменно реализовывать коммуникативные намерения (информирование, запрос, просьба, согласие, отказ, извинение, благодарность);
- извлекать общую и детальную информацию при чтении аутентичных англоязычных текстов, в том числе научно-публицистических;
- сообщать информацию на основе прочитанного текста в форме подготовленного монологического высказывания (презентации по предложенной теме);
- понимать монологические и диалогические высказывания при непосредственном общении и в аудио/видеозаписи;
- понимать коммуникативные интенции полученных письменных и устных сообщений;
- развертывать предложенный тезис в виде иллюстрации, детализации, разъяснения;
- использовать современные информационные технологии для профессиональной деятельности, делового общения и саморазвития;
- передать на русском языке содержание англоязычных научных и публицистических текстов в сфере профессиональной деятельности;
- подбирать литературу по теме, составлять глоссарий, в том числе двуязычный, переводить и реферировать специальную литературу, подготавливать научные доклады и презентации на базе прочитанной специальной литературы, объяснить свою точку зрения и рассказать о своих планах;
- выбирать речевое поведение, тактики и стратегии в соответствии с целями и особенностями коммуникации;
- осуществлять устное и письменное иноязычное общение в соответствии со своей сферой профессиональной деятельности;
- учитывать особенности поведения и интересы других участников коммуникации, анализировать возможные последствия личных действий в социальном взаимодействии и командной работе, и с учетом этого строить продуктивное взаимодействие в коллективе;
- использовать приемы и принципы построения публичной речи для сообщения;
- профессионально-ориентированного содержания на английском языке;
- распознавать и дифференцировать языковые и речевые явления, выделять основную и второстепенную информацию при чтении аутентичных текстов и восприятии речи на слух, использовать типовые средства устной и письменной коммуникации в межличностном общении; применять адекватные коммуникативные средства в стандартных ситуациях общения на профессионально-ориентированные темы;
- пользоваться графическими редакторами, создавать легко воспринимаемые наглядные материалы;
- описать графическую информацию (круговая гистограмма, таблица, столбиковый и линейный графики);
- написать короткую научно-исследовательскую статью по теме своего исследования;
- написать саммари, ревью, краткую статью-совет на предложенную тему;
- реферировать и аннотировать иноязычные профессиональные тексты;
- создавать деловую корреспонденцию с учетом социокультурных требований к внешней и внутренней формам текста и использованием типизированных речевых высказываний;
- уметь представлять результаты исследования в письменной и устной форме;
- подбирать литературу по теме, составлять профессионально-ориентированный иноязычный тезаурус;
- выполнять перевод профессиональных текстов с иностранного языка на государственный язык Российской Федерации с учетом лексико-грамматических и стилистических особенностей языка оригинала и языка перевода и стандартных способов решения коммуникативных задач в области профессиональной деятельности;
- применять информационно-коммуникативные технологии в общении и речевой деятельности на иностранном языке;
- уметь выявлять и формулировать проблемы, возникающие в процессе изучения иностранного языка; оценивать свои возможности, реалистичность и адекватность намеченных способов и

владеть:

- межкультурной профессионально ориентированной коммуникативной компетенцией в разных видах речевой деятельности;
- различными коммуникативными стратегиями: учебными стратегиями для организации своей учебной деятельности;
- стратегиями рефлексии и самооценки в целях самосовершенствования личных качеств и достижений;
- стратегиями восприятия, анализа, создания устных и письменных текстов разных типов;
- интернет-технологиями, в том числе технологиями искусственного интеллекта на базе нейронных сетей, для выбора оптимального режима получения информации; компенсаторными умениями, помогающими преодолеть «сбои» в коммуникации, вызванные объективными и субъективными, социокультурными причинами;
- разными приемами запоминания и структурирования усваиваемого материала;
- навыками эффективного взаимодействия с другими участниками коммуникации;
- презентационными технологиями для сообщения информации;
- технологиями командных коммуникаций, позволяющими достигать поставленной задачи
- риторическими техниками;
- различными видами чтения (поисковое, ознакомительное, аналитическое) с целью извлечения информации;
- методом поиска и анализа информации из различных источников в профессиональной области;
- навыками аннотирования и реферирования оригинальных научно-публицистических и научно-исследовательских статей;
- приемами оценки и самооценки результатов деятельности по изучению иностранного языка
- приемами выявления и осознания своих языковых возможностей, личностных и профессионально-значимых качеств с целью их совершенствования;
- умением понимать речь носителей и не носителей языка и адекватно реагировать с учетом культурных норм международного общения;
- навыками публикации результатов научных исследований в научных изданиях на английском языке;
- умением создавать ясные, логичные высказывания монологического и диалогического характера в различных ситуациях бытового и профессионального общения, пользуясь необходимым набором средств коммуникации;
- приемами публичной речи и делового и профессионального дискурса на английском языке.

4. Содержание дисциплины (модуля), структурированное по темам (разделам) с указанием отведенного на них количества академических часов и видов учебных занятий

4.1. Разделы дисциплины (модуля) и трудоемкости по видам учебных занятий

№	Тема (раздел) дисциплины	Трудоемкость по видам учебных занятий, включая самостоятельную работу, час.			
		Лекции	Семинары	Лаборат. работы	Самост. работа
1	Модуль 1. Английский язык для общих целей (General English)		120		60
2	Тема 1. Человек		20		10
3	Тема 2. Окружающий мир		20		10
4	Тема 3. Социальная жизнь		20		10
5	Тема 4. Развлечения и хобби		20		10
6	Тема 5. Мечты и реальность		20		10
7	Тема 6. Путешествия		20		10
8	Модуль 2. Английский язык для академических целей (English for Academic Purposes)		120		60
9	Тема 1.Образование		20		10
10	Тема 2. Креативность и творчество		20		10

11	Тема 3. Старое и новое «Интернет вещей»		20		10
12	Тема 4. Жизненные ценности		20		10
13	Тема 5. Экология и здоровье человека		20		10
14	Тема 6. Интеллект		20		10
15	Модуль 3. Английский язык для специальных целей (English for Specific Purposes) (выбор направления 3.1. или 3.2. или 3.3)		120		60
16	3.1. Английский для исследовательских целей (English for Research Purposes)		120		60
17	Тема 1. Наука: вчера, сегодня, завтра		20		10
18	Тема 2. Основы научно-исследовательской деятельности		20		10
19	Тема 3. Основные тренды современного академического письма		20		10
20	Тема 4. Наука, технологии и инновации		20		10
21	Тема 5. Стратегии популяризации научного знания		20		10
22	Тема 6. Этика научного исследования		20		10
23	3.2. Английский для инженерии и технологий (English for Engineering and Technology)				
24	Тема 1. Техногенная цивилизация, общество и человек		20		10
25	Тема 2. Человек в эпоху высоких технологий		20		10
26	Тема 3. Креативная составляющая инженерного мышления		20		10
27	Тема 4. Инновации и технологический прорыв		20		10
28	Тема 5. Эргономика и юзабилити		20		10
29	Тема 6. Технологии и инновации в инженерных проектах		20		10
30	3.3. Английский для предпринимательства и бизнеса (English for Business and Entrepreneurship)				
31	Тема 1. Бизнес и предпринимательство		20		10
32	Тема 2. Особенности ведения бизнеса в условиях VUCA-мира		20		10
33	Тема 3. Корпоративная культура		20		10
34	Тема 4. Работа в команде		20		10
35	Тема 5. Финансы		20		10
36	Тема 6. Управление изменениями. Риск-менеджмент		20		10
Итого часов					180
Подготовка к экзамену		0 час.			
Общая трудоёмкость		540 час., 12 зач.ед.			

4.2. Содержание дисциплины (модуля), структурированное по темам (разделам)

Модуль 1. Английский язык для общих целей (General English)

Семестр: 1 (Осенний)

1. Тема 1. Человек

Персональные данные: имя, возраст, происхождение, место проживания. Внешность, черты характера, привычки, взгляды на жизнь, умения и способности, потребности и интересы, ценности, идеалы, смысл жизни. Детство, отрочество и юность. Человек в социуме: семья и быт, круг общения. Ролевые модели.

Коммуникативные задачи (устная и письменная коммуникация): сообщать о себе: о внешности, чертах характера, своих интересах и хобби, о вредных и полезных привычках, взглядах на жизнь, умениях и способностях, потребностях и интересах, ценностях в жизни, своих идеалах, смысле жизни, о своих достижениях, радостях и трудностях университетской жизни; описывать свое детство, отрочество и юность; задавать вопросы собеседнику по заданным темам; описывать, сравнивать внешность, черты характера; сравнивать вещи или предметы; логически строить высказывания по самостоятельно составленному плану о семье, родственниках: имя, возраст, степени родства, профессия; уметь оперировать числами, датами, днями недели, месяцами и пр.

2. Тема 2. Окружающий мир

Взаимодействие человека с окружающей средой. Загадки природы. Погода и климат. Экстремальные погодные явления. Влияние человека на природу: атмосферу, леса, мировой океан, почву, животный мир. Современные экологические проблемы. Жизнь в городе и в сельской местности. Образ жизни, различные стили жизни. Полезные привычки. Смена места жительства в связи с изменением восприятия жизни. Чудеса и загадки природы. Мировые открытия. Культурное разнообразие и наследие.

Коммуникативные задачи (устная и письменная коммуникация): строить логические высказывания о месте жительства, жизни в городе и сельской местности, о чудесах природы, мировых открытиях, об историческом и культурном наследии, о живых существах и их взаимодействии с окружающей средой, проблемах загрязнения и охраны окружающей среды, природных и техногенных катастрофах, стихийных бедствиях, положительном и отрицательном влиянии человека на природу и экологию земли; рассуждать о нерушимой связи человека и природы; участвовать в дискуссии о ценностях природных ресурсов и значимости культурного наследия для сохранения окружающей среды; строить диалог и участвовать в обсуждении.

3. Тема 3. Социальная жизнь

Отношения между людьми. Отношения с окружающим миром. Влияние цифровизации среды на становление личности. Самопознание. Самореализация. Рефлексия как способ саморазвития. Университетская жизнь. Участие в студенческих клубах или сообществах. Волонтерское движение. Благотворительность. Благоустройство. Участие в молодежных и социальных проектах. Молодежные инициативы. Социальная сознательность.

Коммуникативные задачи (устная и письменная коммуникация): строить монологическую и диалогическую речь с помощью предложенных в рамках темы лексических единиц и грамматических конструкций, логические высказывания на темы взаимоотношений и связей между людьми, этики, цифровизации общества; вести дискуссии о помощи нуждающимся, благотворительности, а также о жизни современных студентов; рассуждать о способах достижения успеха, возможностях развития внутреннего потенциала, жизненных перспективах, смысловом наполнении жизни, формировании ответственности, взятой на себя добровольно; рассказывать о способах самосовершенствования; рассказывать о собственной социальной позиции и социальной инициативе; осуществлять поиск необходимой информации по тематике; участвовать в дискуссии о ценностях и значимости сохранения общения между людьми и передачи знаний следующим поколениям.

Семестр: 2 (Весенний)

4. Тема 4. Развлечения и хобби

Спорт. Искусство. Музыка. Чтение. Фотография. Танцы. Кино. Театр. Видеоигры. Коллекционирование. Творчество. Музыкальные жанры и жанры кино, традиционные и современные виды искусства. Влияние хобби на жизнь человека. Хобби как способ самореализации.

Коммуникативные задачи (устная и письменная коммуникация): уметь описать свои развлечения и хобби; составлять рецензии на фильм, книгу, спектакль и т.д.; обсудить героев и содержание книги, фильма, мультфильма и т.д.; вести беседу о влиянии хобби на выбор профессии, дать обратную связь на прочитанную книгу, просмотренный фильм, музыку, фотовыставку и т.д.; обсуждать киноиндустрию, музыку, СМИ, выражать свое мнение о влиянии СМИ на общество; строить логические высказывания о влиянии хобби на жизнь человека.

5. Тема 5. Мечты и реальность

Что такое мечта. Граница между мечтой и реальностью. Реальность порождает мечту. Мечта, ставшая реальностью. Представление о реальном мире. Мечта или цель. Мечты, планы и реальность. Планы на будущее. Типы мышления. Формирование гибкого мышления, настроенного на личностный и профессиональный рост. Способы преодоления ригидности мышления.

Коммуникативные задачи (устная и письменная коммуникация): рассуждать о разнице между мечтой, планами и целью; рассказать о планах на ближайшее будущее и перспективу, о своих мечтах и целях, участвовать в дискуссии на тему глобальных проблем и их решений, рассуждать о понятии «счастье», дискуссировать на тему «Как воплотить мечту в реальности», уметь составлять список дел на неделю, месяц и т.д.

6. Тема 6. Путешествия

Посещение различных стран и городов, новые впечатления и открытия. Великие путешественники и современные туристические обозреватели. Изменения в восприятии мира, ценность исследования местности, расположенной поблизости. Туризм и путешествие. Планирование поездки. Космические исследования.

Коммуникативные задачи (устная и письменная коммуникация): уметь обсудить туризм как явление, любимые места для туризма, в которых уже бывал; рассказать о странах и городах, в которых хотелось бы побывать; рассуждать на тему каникул, отпуска; обсуждать виды путешествий, посещение достопримечательностей; уметь описать знаковые места и делиться новыми впечатлениями, опытом, необычными фактами; описывать географическое положение городов и стран; сравнивать культуру и обычаи разных стран; описывать процедуру бронирования гостиниц, хостелов, предлагаемый в них сервис; описывать способы путешествий разными транспортными средствами и передвижение по городу, кратко рассказать о транспортной системе в своем городе (метро, такси, автобусы); участвовать в дискуссии о путешествиях в современном мире, космических исследованиях и путешествиях в космосе.

Модуль 2. Английский язык для академических целей (English for Academic Purposes)

Семестр: 3 (Осенний)

7. Тема 1. Образование

Роль образования в современном мире. Обучение в ВУЗе. Общество, основанное на знаниях. Образование через всю жизнь. Образование как ценность. Критерии выбора ВУЗа. Профессия будущего.

Коммуникативные задачи (устная и письменная коммуникация): суммировать основные идеи статьи о важности образования в современном обществе; делать выводы о ценности образования на основе статистики; описывать различные типы статистических данных (графики), обсуждать недостатки и преимущества высшего образования; обсуждать плюсы и минусы различных технологий обучения; дискутировать о профессиях будущего и собственном выборе профессии.

8. Тема 2. Креативность и творчество

10 величайших открытий в разных областях науки. Случайные открытия и их роль в науке, экономные инновации, влияние технологий и образования на развитие творческих способностей, исследовательский потенциал. Научное творчество. Креативное мышление. Изобретательство как процесс решения инженерных задач.

Коммуникативные задачи (устная и письменная коммуникация): рассказывать об открытиях и изобретениях, случайных открытиях, и обсуждать их важность, влияние креативности мышления на развитие науки и технологий; участвовать в дискуссии на тему важности креативного мышления и творчества в науке, технике и учебном процессе, разрабатывать и представлять собственный инновационный проект, описывать технологический процесс.

9. Тема 3. Старое и новое «Интернет вещей»

Люди и данные. Искусственный интеллект. Области применения технологии «Интернет вещей». Тенденции развития интеграции физического мира в компьютерные системы. Влияние технологии «Интернет вещей» на жизнь человека. Искусственный интеллект в образовании. Эволюция промышленных интеллектуальных технологий. Вопросы безопасности данных в эпоху «Интернета вещей».

Коммуникативные задачи (устная и письменная коммуникация): обмениваться мнениями о применении «Интернета Вещей» на бытовом уровне потребителей; рассказывать и описывать возможности, преимущества и недостатки применения современных интеллектуальных технологий в физическом мире; обсуждать развитие «Интернета вещей» в современном мире интеллектуальных технологий и связанные с этим угрозы; составлять и описывать статистические данные по тематике, представленные в виде таблиц.

Семестр: 4 (Весенний)

10. Тема 4. Жизненные ценности

Основополагающие ценности и влияние семьи и социума на их формирование. Культурные сходства и различия ключевых ценностей. Основные теории формирования социокультурных и индивидуальных ценностей. Индивидуализация ценностей в жизни и самооценность. Представление о ключевых ценностях как ориентирах в жизни. Коммуникативные задачи (устная и письменная коммуникация): рассуждать о ценностных ориентирах в жизни человека, описывать собственное представление о жизненных ценностях, обмениваться мнениями о влиянии окружающей действительности и социума на формирование жизненных ценностей и собственного представления о ценности жизни, составлять мотивационные письма для поступления (на стажировку, волонтерскую программу, в магистратуру и т.п.).

11. Тема 5. Экология и здоровье человека

Взаимосвязь экологии и здоровья человека. Зависимость уровня здоровья человека от качества естественной среды обитания. Экологические факторы – свойства среды, в которой мы живем. Гигиена и экология человека. Экология и ее влияние на жизнедеятельность. Роль экологического образования в рациональном природопользовании. Зависимость общественного здоровья от природных факторов.

Коммуникативные задачи (устная и письменная коммуникация): обмениваться мнениями о роли экологии, гигиены на здоровье человека; рассуждать о зависимости здоровья человека от факторов окружающей среды; обсуждать влияние экологических факторов среды на здоровый образ жизни человека; составлять эссе-аргументацию по тематике; делать выводы, формулировать мнение о роли экологического образования для сохранения естественной среды обитания на планете.

12. Тема 6. Интеллект

Стадии когнитивного развития. Типы интеллектов. Теория множественного интеллекта Говарда Гарднера. Влияние различных типов интеллекта на успешность и самореализацию учебы и науки. Память и воспоминания. Влияние цифровых технологий на память. Обучение во сне. Тренировка мозга и мнемотехники, сохранение молодости мозга. Эмоциональный интеллект.

Коммуникативные задачи (устная и письменная коммуникация): дискутировать о существующих стадиях когнитивного развития, типах интеллекта; обосновывать выбор «своего» типа интеллекта по Г. Гарднеру; рассуждать о роли эмоционального интеллекта в эффективности деятельности и психологическом благополучии человека; уметь объяснить как воспоминания хранятся, обрабатываются, удерживаются в памяти; излагать влияние компьютерных технологий на память и делать предположение о том, как будет меняться способность человека запоминать информацию в будущем; осуществлять поиск и обмен информацией об эволюции теории обучения во сне; обсуждать методики тренировки мозга и мнемотехники, используемые в обучении; констатировать научные факты о факторах, помогающих продлить молодость мозга; формулировать предположений о том, как оптимизировать работу мозга во время экзаменов, составлять эссе с аргументацией за и против.

Модуль 3. Английский язык для специальных целей (English for Specific Purposes) (выбор направления 3.1. или 3.2. или 3.3)

3.1. Английский для исследовательских целей (English for Research Purposes)

Семестр: 5 (Осенний)

13. Тема 1. Наука: вчера, сегодня, завтра

Научная деятельность как процесс. Критерии научности. Виды исследований (фундаментальное, прикладное, междисциплинарное и междисциплинарное). История развития технических и естественных наук. Величайшие научные открытия. Новые направления в науке. Образ современного ученого. Научная карьера: путь от бакалавра до нобелевского лауреата. Исследовательская команда. Лауреаты Нобелевской премии и их открытия. Научные исследования как вклад в будущее цивилизации.

Коммуникативные задачи (устная и письменная коммуникация): делать сообщения о научных открытиях, новых направлениях в науке; выразить аргументированное мнение о роли науки в жизни общества, целесообразности финансирования науки; рассказывать о новых направлениях в научных знаниях; рассуждать о влиянии научных открытий на мировоззрение человека; обосновывать свой выбор научного исследования; участвовать в обсуждении о вкладе научных исследований в формирование будущего; рассказывать о нобелевских лауреатах в своей научной области.

14. Тема 2. Основы научно-исследовательской деятельности

Введение в публикационный процесс. Особенности письменной научной коммуникации в русском и английском языках. Анализ структуры научного текста. Формат IMRAD. Наукометрические базы данных научной литературы. Категории научных журналов. Наукометрические показатели (h-индекс, импакт-фактор, альметрика). Методы исследования и сбор данных. Процесс рецензирования (одностороннее слепое, двустороннее слепое, открытое, прозрачное, совместное).

Коммуникативные задачи (устная и письменная коммуникация): выявлять различия изложения, структуры и логики аргументации в английском и русском языке; описывать этапы научного исследования, включая формулирование проблемы, гипотезы, сбор и анализ данных, и кратко излагать их содержание; аргументированно обосновывать выбор темы исследования, его объекта и предмета, цели и задач; выдвигать гипотезу исследования; уметь находить, анализировать и использовать научные публикации и научные базы данных; уметь аргументированно обосновать достоверность источников; разбираться в видах научного рецензирования.

15. Тема 3. Основные тренды современного академического письма

Новые и традиционные жанры представления научной информации (статья, диссертация, графическая аннотация, публикация в социальных сетях и др.). Жанр журнальной публикации: первичные тексты. Вторичные исследовательские тексты: обзоры научной литературы. Виды графической информации в научной коммуникации (таблицы, графики, рисунок, схемы). Особенности представления, описания и интерпретации графической информации в научных статьях. Аннотация простыми словами. Речь для лифта в научной коммуникации. Прямая и непрямая коммуникация в научном дискурсе.

Коммуникативные задачи (устная и письменная коммуникация): рассуждать о гибридной и конвергентной природе современных жанров академического письма; представлять научную информацию в различных устных и письменных форматах с учетом адресата; уметь описывать и интерпретировать графическую информацию, представленную в научных статьях; дискутировать о современных трендах в научной коммуникации и академическом письме; составлять аннотации научных статей простыми словами; составлять и презентовать речь для лифта с учетом ее жанровых особенностей; уметь использовать стратегии прямой и непрямой коммуникации в ситуациях профессионального общения.

Семестр: 6 (Весенний)

16. Тема 4. Наука, технологии и инновации

Взаимосвязь науки, техники и инноваций. Процесс технологизации науки. Внедрение технологий искусственного интеллекта в научно-исследовательский и публикационный процесс. Проблемы защиты прав интеллектуальной собственности на материальные и нематериальные объекты. Инновационные высокотехнологичные разработки. Критический обзор научных статей.

Коммуникативные задачи (устная и письменная коммуникация): делать сообщения о взаимосвязи науки и техники; рассуждать о последних достижениях науки и техники; дискутировать о существующих проблемах в области защиты прав интеллектуальной собственности; выражать аргументированное мнение об авторском праве научных исследований и исключительном праве на научное произведение; составлять критический обзор научных статей, опубликованных в высокорейтинговых англоязычных журналах.

17. Тема 5. Стратегии популяризации научного знания

Научно-популярный стиль. Способы и средства популяризации науки. Научное волонтерство. Социальное значение науки. Ключевые навыки современного ученого. Научно-популярная журналистика. Борьба с лженауками и дезинформацией. Логические заблуждения. Понятие риторики, риторических приемов и изобразительно-выразительных средств в речи ученого. Жанр пресс-релиза и научно-новостного отчета.

Коммуникативные задачи (устная и письменная коммуникация): объяснить сложное научное явление простым языком для любой категории слушателя; делать сообщения о средствах популяризации науки; дискутировать о социальном значении научного волонтерства; рассуждать о научной журналистике и ее роли в популяризации науки; устанавливать коммуникативную связь с аудиторией используя специальные риторические приемы и изобразительные средства речи, направленные на улучшение восприятия информации слушателей; делать сообщения в жанре пресс-релиза и научно-новостного отчета.

18. Тема 6. Этика научного исследования

Важность научной этики в исследовательской и публикационной деятельности. Принципы научной и исследовательской этики. Последствия фальсификаций научных результатов. Основные типы нарушений в сфере этики научных публикаций: конфликт интересов, фабрикация результатов, плагиат, самоплагиат, «салями» публикация, проблемы авторства, соавторства, почетного авторства. Прямое и косвенное цитирование, перифраз. Основные стили цитирования (APA, MLA, Harvard, Chicago). Специфика оформления литературного обзора.

Коммуникативные задачи (устная и письменная коммуникация): выражать аргументированное мнение о важности научной этики в исследовательской и публикационной деятельности; доказывать необходимость следования ключевым принципам научной и исследовательской этики; рассуждать о последствиях фабрикаций, манипулирования или искажения научных данных; объяснить типы нарушений в сфере этики научных публикаций; выявлять различия между прямым цитированием, косвенным цитированием и перифразом и адекватно использовать их при написании научных работ; пользоваться международными стандартами оформления цитирований; составлять литературный обзор по теме научного исследования.

3.2. Английский для инженерии и технологий (English for Engineering and Technology)

Семестр: 5 (Осенний)

19. Тема 1. Техногенная цивилизация, общество и человек

«Этапы индустриального развития: от Индустрии 1.0 до 4.0». Роль инженеров в создании инноваций, развитии технологий и решении глобальных проблем человечества. Требования к профессиональным навыкам и компетенциям инженера. Структура и особенности составления резюме и CV. Техническое собеседование и интервью. Деловая переписка для инженеров. Числа и вычисления. Аналитика больших данных. Искусственный интеллект.

Коммуникативные задачи (устная и письменная коммуникация): сравнивать влияние различных этапов индустриального развития на производственные процессы и общество; представлять информацию о различных инженерных специальностях и их значимости; дискутировать о вкладе инженерных профессий в развитие современного общества; обсуждать «мягкие» и «жесткие» навыки, необходимые для успешной карьеры инженера; практиковать написание и редактирование резюме и CV с учетом требований работодателей; практиковать и совершенствовать навыки краткой самопрезентации (elevator pitch); разыгрывать сценарии технических интервью (mock technical interview); составлять деловые электронные письма на темы, связанные с инженерной деятельностью; корректно выражать просьбы и предложения; выражать аргументированное мнение о преимуществах и недостатках развития искусственного интеллекта и больших данных; грамотно использовать числовые данные и расчеты при описании технологий, их технических характеристик, а также актуальных технологических трендов.

20. Тема 2. Человек в эпоху высоких технологий

Инженерная этика. Этика новых технологий. Влияние современных технологий на сознание людей. Компьютерные науки. Робототехника. Биоинженерия и биоинформационные технологии. Единицы измерения. Цитирование и плагиат.

Коммуникативные задачи: осуществлять коммуникацию в устной и письменной формах, описывать основные принципы инженерной этики; аргументировать важность соблюдения этических норм при разработке и внедрении технологий; анализировать примеры технологических решений с точки зрения их социального и этического влияния; обсуждать вопросы регулирования новых технологий; высказывать суждения о влиянии современных технологий на сознание людей и социокультурную среду человека; описывать ключевые направления компьютерных наук и инженерии; презентовать инновационные разработки в области робототехники; обсуждать перспективы развития биоинформационных технологий; описывать ключевые принципы биомеханики; объяснять этические и правовые аспекты генной модификации; описывать международную систему единиц (СИ) и её применение; объяснять разницу между различными системами измерения; практиковать правильное оформление источников; составлять параграф и эссе.

21. Тема 3. Креативная составляющая инженерного мышления

Инженерный стиль мышления, технический склад ума. Креативность в структуре инженерного мышления. Сторителлинг в профессиональной коммуникации инженеров. Цифровой сторителлинг. Научная фантастика и научно-фантастическое прототипирование. Теория решения изобретательских задач (ТРИЗ). Формы и размеры. Использование искусственного интеллекта для развития креативности при решении инженерных задач. Промпт-инжиниринг и его виды.

Коммуникативные задачи: осуществлять коммуникацию в устной и письменной формах, описывать характеристики инженерного мышления; участвовать в «мозговом штурме» при выборе оптимальных и нестандартных инженерных решений; использовать сторителлинг для описания функционала сложных технических устройств; презентовать цифровую историю об инженерном учебном/профессиональном опыте (достижениях, трудностях, проектах) с использованием мультимедийных инструментов; описывать влияние научной фантастики на технологический прогресс; представлять научно-фантастический прототип для описания изобретений будущего; визуализировать техническую информацию с помощью постера/инфографики; участвовать в групповой дискуссии для решения противоречий с помощью ТРИЗ, презентовать решения; создавать правильные запросы для нейросетей, использовать различные типы промптинга для поиска нестандартных решений инженерных задач; описывать основные геометрические формы и их применение в инженерии; обсуждать оптимальные решения в проектировании с учетом формы и размеров; составлять параграф и эссе.

Семестр: 6 (Весенний)

22. Тема 4. Инновации и технологический прорыв

Введение в техническую коммуникацию для инженеров. Техническое письмо. Требования, предъявляемые к технической документации. Типы целевой аудитории. Дополненная и виртуальная реальность. Цифровые двойники. Трехмерная печать. Материалы, их физические и механические свойства. Химические элементы и формулы. Биомехатроника. Нейрокомпьютерный интерфейс.

Коммуникативные задачи: осуществлять коммуникацию в устной и письменной формах, описывать основные принципы технической коммуникации для инженеров; объяснять разницу между специализированной и неспециализированной аудиторией; обсуждать применение дополненной и виртуальной реальности в инженерии; объяснять концепцию цифровых двойников и их применение; описывать технологию 3D-печати и её применение в различных отраслях инженерии; описывать различные виды материалов и их характеристики; сравнивать материалы по их прочности, твердости, пластичности и другим свойствам; распознавать и объяснять химические формулы и уравнения на английском языке, обсуждать роль химических элементов в современных инженерных разработках; объяснять взаимодействие инженерных и биологических систем; описывать принципы работы нейроинтерфейсов; обсуждать перспективы развития технологий мозг-компьютер; составлять техническое описание продукта.

23. Тема 5. Эргономика и юзабилити

Основы технической коммуникации: взаимодействие с неспециализированной аудиторией. Общее представление об эргономике и юзабилити. Основные методы юзабилити. Соотношение понятий usability и user experience. Сфера применения юзабилити. Понятие удобства интерфейса. Основные принципы дизайна. Human-centered design. User-centered design. Goal-directed design. Общее представление о методах юзабилити. Пользователи и персоны. Цели пользователей. Пользовательский сценарий. Приемы эффективной коммуникации и презентации инженерных прототипов.

Коммуникативные задачи: осуществлять коммуникацию в устной и письменной формах, объяснять сложные технические концепции простым языком; рассказывать о целях эргономики и юзабилити; обсуждать основные понятия, методы, сферы применения юзабилити; обмениваться мнениями о категориях пользователей и практическим применением информационных систем для достижения поставленных целей; осуществлять поиск необходимой информации по теме; представлять собственный инженерный дизайн, демонстрировать прототип с акцентом на его ключевые особенности, описывать возможные области применения инженерного решения; составлять отзыв на презентацию инженерных прототипов.

24. Тема 6. Технологии и инновации в инженерных проектах

Основы технической коммуникации: взаимодействие с разными типами аудиторий. Автономный транспорт. Беспилотные летательные аппараты. Аэрокосмическая Инженерия. Космическая техника. Понятие силы в физике. Роль физики в инженерных проектах.

Коммуникативные задачи: осуществлять коммуникацию в устной и письменной формах, Адаптировать техническую информацию под разные категории пользователей; обсуждать применение и цели развития прорывных технологий в области беспилотного транспорта; делать сообщения об инновационных инженерных проектах в данной сфере; дискутировать о роли международного сотрудничества в развитии космических технологий; делать сообщения о возобновляемых и невозобновляемых источниках энергетики; разрабатывать стратегию убеждения потенциальных инвесторов или заказчиков; описывать основные виды физических сил; приводить примеры использования физических сил в инновационных технологиях; визуализировать техническую информацию с помощью постера/инфографики, составлять техническое описание механизма для специализированной аудитории.

3.3. Английский для предпринимательства и бизнеса (English for Business and Entrepreneurship)

Семестр: 5 (Осенний)

25. Тема 1. Бизнес и предпринимательство

Сущность бизнеса и предпринимательства. Цели, задачи, функции, субъекты бизнеса. Архитектура бизнеса: анализ ключевых факторов. Формы бизнеса с позиции стадий воспроизводства, с позиции научно-технического прогресса, по критерию охвата экономического пространства, по уровню организации хозяйственной жизни, с точки зрения государственного и правового статуса. ESG–принципы. Построение бизнес-моделей в цифровой экономике. Бизнес-модель Остервальдера: суть, содержание. Генерация новых идей в бизнес-моделировании. Влияние технологического прогресса на международную деловую среду. Продвижение собственных инновационных идей слушателей. Виды предпринимательства. Инновационный характер предпринимательства. Предпринимательство, идеи и инновации, виды продукта, стартапы и экосистемы в России, международные премии для предпринимателей. Изучение рынка и его сегментов, подходящих для инновационных предпринимательских проектов.

Коммуникативные задачи (устная и письменная коммуникация): участвовать в беседе о сущности бизнеса и предпринимательства, его целях, задачах, функциях, субъектах; дискутировать об ответственном отношении к окружающей среде, высокой социальной ответственности и высоком качестве корпоративного управления; высказывать суждение почему люди становятся предпринимателями, о влиянии предпринимательства на общество и экономику страны; уметь объяснять построение бизнес-моделей их сущность и содержание; генерировать идеи для стартапов, выступить с pitch-презентацией своей бизнес-идеи для потенциального инвестора.

26. Тема 2. Особенности ведения бизнеса в условиях VUCA-мира

Система современного бизнеса, включающая субъекты деловых отношений (предприниматели, потребители, работники по найму, государственные структуры), инфраструктуру бизнеса, системы управления, изучения контрагентов, оценки деятельности и собственные внутренние импульсы развития (конкуренция). Сложность, нестабильность, неоднозначность, неопределенность – параметры, влияющие на изменения в деловом мире глобально и локально.

Коммуникативные задачи (устная и письменная коммуникация): рассуждать о современных проблемах бизнеса и влиянии цифровизации на стабильное развитие современного бизнеса, реализация проектов посредством цифровых инструментов, управления проектами через цифровые каналы, сервисы и платформы; участвовать в дебатах о переходе от VUCA-мира к VUCA-2.0 миру (Volatility — Vision, Uncertainty — Undersfnding, Complexity — Clarity, Ambiguity — Agility).

27. Тема 3. Корпоративная культура

Корпоративная философия и корпоративная культура. Типология организационных культур (Г. Хофстед). Виды, принципы и приоритеты, функции корпоративной культуры. Формирование целевого образа корпоративной культуры. Взаимосвязь ценностей и корпоративной культуры с стратегией развития бизнеса и предпринимательства. Современные концепции корпоративной культуры. Формирование кодекса корпоративной культуры в бизнесе и предпринимательстве. Роль корпоративной культуры в развитии предпринимательства и бизнеса. Культура как бренд. Коммуникации корпоративной культуры.

Коммуникативные задачи (устная и письменная коммуникация): формулировать универсальные параметры типологии Г. Хофстеда; дискутировать о философии корпоративной культуры в формировании целевого образа компании как бренда, приводить практические примеры; рассуждать о обсуждать роль корпоративной культуры в развитии предпринимательства и бизнеса на основе комплекса убеждений, ценностей и ожиданий; участвовать в обсуждении изменений современных концепций формирования и функций корпоративной культуры; делать сообщения о выборе стратегии и принципов выстраивания корпоративной культуры в известных компаниях-гигантах.

28. Тема 4. Работа в команде

Принципы работы в команде, в том числе в многонациональной. Командная работа и эффективное сотрудничество, принципиальные отличия. Распределение ролей в команде, проекте. Преимущества и недостатки командной работы. Взаимоотношения в команде. Ответственность при работе в команде. Методы определения «командного духа».

Коммуникативные задачи (устная и письменная коммуникация): обсуждать основные принципы работы в команде; дискутировать об эффективном командном взаимодействии; приводить аргументы определения «командного духа»; сотрудничать, кооперироваться, выражать свою точку зрения, конструктивно преодолевать разногласия, использовать потенциал группы и достигать коллективных результатов работы; использовать методы коммуникативного общения и значительно увеличивать эффективность работы многонациональной команды; устанавливать наиболее эффективные правила коммуникации при взаимодействии с командой; задавать уточняющие вопросы, подводя собеседника к своему мнению; проводить интервью, выстраивая систему эффективного взаимодействия при обсуждении заданной темы; выступать посредником при возникновении разногласий и успешно их решать; создавать вокруг себя атмосферу дружелюбия и открытости; убедительно излагать суждение и влиять на мнение собеседника; распознавать потребности и интересы собеседника и отталкиваться от них в процессе диалога.

Семестр: 6 (Весенний)

29. Тема 5. Финансы

Социально-экономическая сущность финансов. Понятие финансов. Функции финансов. Финансовые ресурсы. Финансы и бизнес. Источники финансирования и бюджетирования бизнеса. Понятие финансового планирования, виды финансовых планов. Стартовый капитал. Финансовый анализ деятельности предприятия.

Коммуникативные задачи (устная и письменная коммуникация): дискутировать о социально-экономической сущности финансов, стратегии и тактике предпринимательских действий; обсуждать денежные отношения между предпринимателями и другими участниками бизнеса, в том числе между предпринимательскими компаниями и государством; уметь объяснять различные виды и источники финансирования; использовать приемы убедительной речи для объяснения основных понятий финансового планирования и основных источников финансирования бизнеса; составлять анализ финансово-хозяйственной деятельности; обсуждать возможные способы финансирования новой бизнес идеи; принимать участие в дискуссии о современных методах инвестирования денежных средств; сравнить системы налогообложения в зависимости от юридической формы организации бизнеса.

30. Тема 6. Управление изменениями. Риск-менеджмент

Основные процессы управления рисками проекта. Идентификация и качественный анализ рисков проекта. Классификация рисков и иерархическая структура рисков проекта (RBS). Экспертные методы: мозговой штурм, метод Дельфи, интервью и анкетирование. Диаграмма Исикавы. Факторы риска, рисковые события и последствия их реализации. Методы сбора информации для идентификации рисков. Количественные методы оценки рисков проекта. Стратегии и инструменты управления рисками. Мониторинг и управление рисками. Управление изменениями в проекте.

Коммуникативные задачи (устная и письменная коммуникация): дискутировать о понятие риска и неопределенности, проектных рисках; уметь объяснить место управления рисками в системе управления проектом, основные концепции, принципы построения системы и ключевые факторы успеха управления рисками проекта; объяснять содержание основных процессов управления рисками проекта и планирование управление рисками; составлять содержание плана управления рисками; составлять анализ предположений и ограничений проекта; обсуждать понятие и цель управления изменениями в проекте, роли и функции участников проекта при управлении изменениями. Критерии принятия решений о внесении изменений.

5. Описание материально-технической базы, необходимой для осуществления образовательного процесса по дисциплине (модулю)

Учебная аудитория, для проведения учебных занятий, предусмотренных программой дисциплины (модуля), оснащенная оборудованием и техническими средствами обучения: столы и стулья для обучающихся и преподавателя; интерактивной доской (экраном); мультимедийным проектором; звуковоспроизводящей аппаратурой; компьютером для преподавателя, а также ноутбуками для обучающихся (при необходимости) с возможностью подключения к сети «Интернет» и обеспечением доступа в электронную информационно-образовательную среду (далее - ЭИОС) МФТИ.

6.Перечень рекомендуемой литературы

Основная литература

1. Английский язык. General & Academic English (A2–B1) / В. В. Левченко. – Москва: Юрайт, 2022.
2. Английский язык для естественно-научных направлений / Л. В. Полубиченко, Е. Э. Кожарская, Н. Л. Моргун, Л. Н. Шевырдяева. – Москва: Юрайт, 2022.
3. Английский язык для естественно-научных специальностей (A2–B1) / О. А. Егорова, Е. Э. Кожарская. – Москва: Юрайт, 2022.
4. Английский язык для технических направлений (A1) / Ю. Б. Кузьменкова. – Москва: Юрайт, 2022.
5. Английский язык для технических направлений (B1–B2) / Н. Л. Байдикова, Е. С. Давиденко. – Москва: Юрайт, 2022.
6. How to write a research article / E. Bazanova, S. Suchkova. – Moscow: Nauka, 2020.
7. Английский язык для академических целей / Т. А. Барановская, А. В. Захарова, Т. Б. Пospelova, Ю. А. Суворова. – Москва: Юрайт, 2022.
8. Английский язык в международном бизнесе / Л. В. Ступникова. – Москва: Юрайт, 2022.
9. Английский язык для физиков и инженеров / И. Ю. Коваленко. – Москва: Юрайт, 2022.

Дополнительная литература

1. Английский язык для экономистов (A2–B2) / В. И. Уваров. – Москва: Юрайт, 2022.
2. Английский язык / Ю. Б. Кузьменкова. – Москва: Юрайт, 2022.
3. Английский язык. Грамматика (B2) / В. А. Гуреев. – Москва: Юрайт, 2022.
4. Лексикология английского языка / Г. Б. Антрушина, О. В. Афанасьева, Н. Н. Морозова. – Москва: Юрайт, 2022.
5. Академическое письмо. Лексика. Developing Academic Literacy / В. В. Меняйло, Н. А. Тулякова, С. В. Чумилкин. – Москва: Юрайт, 2022.
6. Английский язык для публичных выступлений (B1-B2) / Л. С. Чикилева. – Москва: Юрайт, 2022.
7. Иностранный язык в сфере профессиональной коммуникации : комплексные учебные задания, учебное пособие / И. В. Беляева, Е. Ю. Нестеренко, Т. И. Сорогина. — Москва, Флинта, 2017.— URL: <https://e.lanbook.com/book/92749> (дата обращения: 04.02.2021). - Полный текст (Режим доступа : из сети МФТИ / Удаленный доступ)

8. Куряева Р. И. Английский язык. Лексика и грамматика : учебник для вузов / Р. И. Куряева. – 8-е изд., испр. и доп. – Москва : Юрайт, 2024. – 1 файл. – (Высшее образование). – Электронная версия печатной публикации

Перечень рекомендуемой литературы для самостоятельной работы:

1. Armer, T., & Day, J. (2011). Cambridge English for Scientists. In Cambridge University Press eBooks. <https://ci.nii.ac.jp/ncid/BB05943443>
2. Ayub Khan, M., & Ebner, N. (2018). The Palgrave Handbook of Cross-Cultural Business Negotiation (1st ed. 2019). Palgrave Macmillan.
3. Bonamy, D. (2011). Technical English Level 3 coursebook. Allyn & Bacon.
4. Bonamy, D. (2022). Technical English Level 2. Pearson Education Limited.
5. Crane, A., & Matten, D. (2016). Business Ethics: Managing Corporate Citizenship and Sustainability in the Age of Globalization (4th ed.). Oxford University Press.
6. Dimond-Bayir, S. (2014). Unlock Level 2 Listening and Speaking Skills (1st ed.). Cambridge Discovery Education.
7. English, L., & Lynn, S. (1995). Business Across Cultures: Effective Communication Strategies. Addison-Wesley.
8. Glendinning, E. (2013). Oxford English for Careers: Technology for Engineering and Applied Sciences. Oxford University Press.
9. Glendinning, E. H., & Glendinning, N. (1995). Oxford English for Electrical and Mechanical Engineering. In Oxford University Press eBooks. Oxford University Press.
10. Gustavii, B. (2017). How to Write and Illustrate a Scientific Paper. Cambridge University Press. <https://doi.org/10.1017/9781316650431>
11. Hancock, E., & Kanigel, R. (2003). Ideas into Words: Mastering the Craft of Science Writing. <http://ci.nii.ac.jp/ncid/BA64781198>
12. Hill, D. (2013). English for information technology: Course Book. Pearson Education ESL.
13. Ibbotson, M. (2009). Professional English in Use, Engineering : Technical English for professionals. In Cambridge University Press eBooks. <http://ci.nii.ac.jp/ncid/BB00987907>
14. Katan, D., & Taibli, M. (2021). Translating Cultures An Introduction for Translators, Interpreters and Mediators (3rd ed.). Routledge.
15. Khan, M. A., & Ebner, N. (2018). The Palgrave Handbook of Cross-Cultural Business Negotiation. In Springer eBooks. <https://doi.org/10.1007/978-3-030-00277-0>
16. Lennon, J., & Gurak, L. (2013). Technical Communication (13th ed.). Pearson.
17. Markel, M., & Selber, S. (2021). Technical Communication (13th ed.). Macmillan. https://www.macmillanlearning.com/college/us/product/Technical-Communication/p/1319414257?selected_tab=Product%20Overview
18. Mingbin, Z. (2016). Balance: The Art of Chinese Business (Cases in Modern Chinese Business). Paths Publishing Group.
19. O’Nill, R. (2015). Unlock Level 2 Reading and Writing Skills. Cambridge University Press.
20. Rossow, M. D. (2005). A Field Guide for Science Writers. In Oxford University Press eBooks. Oxford University Press. <https://doi.org/10.1093/oso/9780195174991.001.0001>
21. Schneider, S., & Barsoux, J.-L. (2002). Managing Across Cultures (2nd ed.). Pearson College Div.
22. Silvia, P. J. (2019). How to Write a Lot: A practical Guide to Productive Academic Writing (2nd ed.). American Psychological Association. <https://ci.nii.ac.jp/ncid/BB27060933>
23. Ting-Toomey, S., & Dorjee, T. (2018). Communicating Across Cultures (2nd ed.). The Guilford Press.
24. Trzeciak, J., & MacKay, S. E. (1994). Study Skills for Academic Writing (English for Academic Study). In Prentice Hall eBooks. Prentice Hall.
25. Wallwork, A. (2014). Meetings, Negotiations, and Socializing. A Guide to Professional English (2014th ed.). Springer.
26. Williams, J. (1995). Style: Toward Clarity and Grace (Chicago Guides to Writing, Editing, and Publishing). University of Chicago Press.
27. Williams, J. (2006). Style: Lessons in Clarity and Grace (9th ed.). Pearson/Longman.
28. Zinsser, W. (2016). On Writing Well: The Classic Guide to Writing Nonfiction. Harper Perennial.

7. Перечень ресурсов информационно-телекоммуникационной сети "Интернет", необходимых для освоения дисциплины (модуля)

1. lms.mipt.ru. – виртуальная обучающая среда LMS МФТИ для обеспечения образовательного процесса с применением электронного обучения (далее – ЭО) и дистанционных образовательных технологий (далее – ДОТ).

2. <http://quizlet.com> – онлайн сервис, с помощью которого можно создавать дидактические флэшкарточки как для очного, так и дистанционного обучения; используется для тренировки новых лексических единиц.
3. <http://www.listenaminute.com> – аудиоматериалы
4. <http://www.uefap.com> – материалы по обучению академическому английскому языку (using English for Academic Purposes), список необходимых академических слов (<http://www.uefap.com/vocab/vocfram.htm>)
5. <http://breakingnewsenglish.com> – статьи и аудиоматериалы по разнообразной тематике для обучающихся с разным уровнем владения языком.
6. <http://scientificamerican.com> – научно-популярные статьи Scientific American
7. <http://www.nationalgeographic.com> – научно-популярные статьи National Geographic
8. <http://nature.com> – научно-популярные статьи Nature
9. <http://sciencemag.org> – научно-популярные статьи
10. <https://www.ifcc.org> гайд к созданию плана исследования 05_Research_Guide_IFCC.pdf
11. <https://www.popsoci.com> – научно-популярные статьи Popular Science Homepage | Popular Science (popsoci.com)
12. <https://www.feynmanlectures.caltech.edu> – лекции Ричарда Фейнмана по физике The Feynman Lectures on Physics (caltech.edu)
13. <https://www.hawking.org.uk> – лекции Стивена Хокинга по физике Stephen Hawking
14. <https://www.ted.com> – научно-популярные лекции TED: Ideas Worth Spreading
15. <https://nptel.ac.in> – ресурс видео-лекций по различным отраслям науки и предметам Courses: NPTEL
16. <https://www.nobelprize.org> – ресурс видео-лекций по различным отраслям наук Videos of Nobel Prize lectures from literature laureates - NobelPrize.org
17. <https://www.physicsgalaxy.com> – видео-лекции по физике Online Physics Video Lectures, Classes and Courses - Physics Galaxy
18. <https://www.reddit.com> – видео-лекции по различным отраслям науки Video Lectures (reddit.com)
19. <http://videlectures.net> – видео-лекции по различным отраслям науки VideoLectures.NET - VideoLectures.NET

8. Перечень информационных технологий, используемых при осуществлении образовательного процесса по дисциплине (модулю), включая перечень необходимого программного обеспечения и информационных справочных систем (при необходимости)

Для ведения учебного процесса используются: информационно-технологическое пространство МФТИ (специализированная инфраструктура, включающая в себя совокупность программно-аппаратных средств, а именно: серверы, персональные компьютеры, системы передачи данных, лицензионное программное обеспечение); электронно-информационный ресурс библиотеки; база данных системы электронного обучения (lms.mipt.ru); базы данных электронных справочных систем (в свободном доступе или доступе на основании заключенных договоров), автоматизированные средства доступа к электронным информационным ресурсам; другие базы данных и файловые системы, используемые в образовательном процессе.

Учебная деятельность реализуется с использованием ЭИОС МФТИ (<http://lms.mipt.ru>), с помощью которой осуществляется фиксация хода образовательного процесса, результатов промежуточной аттестации, самоконтроля выполнения заданий, проведения тестирования, а также предоставляется неограниченный доступ обучающимся и научно-педагогическим работникам к информационно-образовательным ресурсам ЭИОС из любой точки, в которой имеется доступ к информационно-телекоммуникационной сети «Интернет».

На практических занятиях используются технологии общего или индивидуального пользования: мультимедийные технологии (работа на интерактивной доске, некоторые технологии презентаций посредством компьютера, и те, что ширятся по сетям), общественные зоны, личные удаленные рабочие места, а также электронные информационно-образовательные ресурсы, которые обеспечивает взаимодействие участников образовательного процесса.

Самостоятельная работа обучающихся осуществляется с использованием виртуальной обучающей среды на основе LMS МФТИ (<https://lms.mipt.ru/>), с помощью которой обучающимся предоставляется доступ к различным источникам мультимедийной информации, организуется общение всех участников учебного процесса, осуществляется интерактивный контроль и самоконтроль выполнения заданий, проводится тестирование.

9. Методические указания для обучающихся по освоению дисциплины (модуля)

Обучающийся, осваивающий дисциплину (модуль) должен овладеть межкультурной коммуникативной компетенцией, включающей в себя: лингвистическую компетенцию (способность в соответствии с нормами изучаемого языка правильно конструировать грамматические формы и синтаксические построения), социолингвистическую компетенцию (способность использовать и преобразовывать языковые формы в соответствии с ситуацией иноязычного общения), социокультурную компетенцию (способность учитывать в общении речевое и неречевое поведение, принятое в стране изучаемого языка), социальную компетенцию (способность взаимодействовать с партнерами по общению, владение соответствующими стратегиями), дискурсивную компетенцию (способность понять и достичь связности отдельных высказываний в значимых коммуникативных моделях) стратегическую компетенцию (умение пользоваться наиболее эффективными стратегиями при решении коммуникативных задач), предметную компетенцию (знание предметной информации при организации собственного высказывания или понимания высказывания других людей), прагматическую компетенцию (способность к общению и умение реализовывать любое высказывание учитывая условия при которых осуществляется акт говорения (слушания, письма), статус адресата, объект обсуждения и т.д.) для развития личностных и профессиональных качеств, осознания социальной значимости своей профессиональной деятельности, уважительному отношению и соблюдению принципов этики, морали, нравственности и толерантности, а также читательскую компетенцию: способность к корректному извлечению информации из текста и профессионально ориентированную читательскую компетенцию: способность к пониманию и обработке текстовой информации профессиональной направленности.

Освоение дисциплины происходит на практических занятиях в учебной аудитории и в самостоятельной работе обучающегося, в условиях самоконтроля, взаимоконтроля и взаимопроверки при взаимодействии между участниками образовательного процесса, в том числе синхронное и (или) асинхронное взаимодействия посредством сети «Интернет» с применением ЭИОС МФТИ (lms.mipt.ru).

На практических занятиях основное внимание уделяется формированию умений и навыков владения как устными видами речевой деятельности (говорение, аудирование), так и письменными видами речевой деятельности (чтение, письмо). Текущий контроль по дисциплине проводится на каждом практическом занятии в устной и письменной формах. Объектом текущего контроля является уровень сформированности языковых навыков и речевых умений.

Практические занятия проводятся на основе коммуникативного подхода с использованием активных/интерактивных форм работы:

- работа в малых группах;
- дискуссия;
- обучающие игры (ролевые, проблемные ролевые, деловые и т.д.);
- эвристическая беседа по содержанию прочитанного или прослушанного текста, просмотренного видео материала;
- обсуждение вопросов и обмен мнениями;
- отработка просмотрового чтения текстов, проверка понимания содержания и смысла просмотренного текста;
- просмотр и обсуждение видеоматериала;
- презентации на основе современных мультимедийных средств.

Успешное овладение программой дисциплины (модуля) в целом и эффективность каждого практического занятия напрямую зависят от регулярной самостоятельной работы обучающегося. Задания для самостоятельной работы должны выполняться обучающимся в полном объеме и точно в указанные сроки.

Самостоятельная работа включает в себя:

- повторение и закрепление пройденного материала;
- выполнение лексико-грамматических упражнений, направленных на формирование языковых навыков;

- чтение и проверка понимания текстов;
- прослушивание аудиозаписей и просмотр видеоматериалов, выполнение к ним заданий;
- выполнение творческих письменных заданий, направленных на формирование речевых умений;
- домашнее чтение, конспектирование, перевод на русский;
- подготовка монологических и диалогических высказываний по изучаемой теме.

При возникновении вопросов или трудностей, связанных с освоением содержания дисциплины (модуля), обучающийся может обратиться к преподавателю, используя информационно-коммуникационные ресурсы МФТИ (корпоративная почта, чат в ЭИОС и иные компоненты телекоммуникационной среды).

ОЦЕНОЧНЫЕ МАТЕРИАЛЫ ПО ДИСЦИПЛИНЕ (МОДУЛЮ)

по направлению:	Прикладная математика и информатика
профиль подготовки:	Прикладная математика, компьютерные науки и инженерия Физтех-школа Прикладной Математики и Информатики департамент иностранных языков
курс:	<u>1</u>
квалификация:	бакалавр

Семестры, формы промежуточной аттестации:

- 1 (осенний) - Зачет
- 2 (весенний) - Дифференцированный зачет
- 3 (осенний) - Зачет
- 4 (весенний) - Дифференцированный зачет
- 5 (осенний) - Зачет
- 6 (весенний) - Дифференцированный зачет

Разработчики:

В.А. Авдеева, старший преподаватель
Е.М. Базанова, канд. пед. наук, доцент, доцент
А.В. Горизонтова, канд. ист. наук, доцент
А.С. Денисова, старший методист
О.В. Космодемьянская, старший методист
А.В. Ламзина, канд. филол. наук, доцент
А.И. Лыкова, старший методист
О.В. Маруневич, канд. филол. наук, доцент, доцент
А.А. Полонская, ассистент
Н.Л. Саввина, старший преподаватель
О.В. Шадрина, старший преподаватель
Н.В. Цытулина, заместитель руководителя по учебно-методической работе

1. Компетенции, формируемые в процессе изучения дисциплины

Код и наименование компетенции	Индикаторы достижения компетенции
УК-3 Способен осуществлять социальное взаимодействие и реализовывать свою роль в команде	УК-3.1 Способен устанавливать разные виды коммуникации (учебную, научную, деловую, неформальную и др.)
	УК-3.2 Взаимодействует с другими членами команды для достижения поставленной задачи
УК-4 Способен осуществлять деловую коммуникацию в устной и письменной формах на государственном языке Российской Федерации и иностранном(ых) языке(ах)	УК-4.1 Демонстрирует умение вести обмен деловой информацией в устной и письменной формах на государственном языке Российской Федерации и не менее чем на одном иностранном языке
	УК-4.2 Использует современные информационно-коммуникативные средства для коммуникации
УК-5 Способен осмысливать культурное разнообразие общества в социально-историческом, этическом и философском аспектах	УК-5.1 Знает основные категории философии, законы исторического развития, основы межкультурной коммуникации
	УК-5.2 Имеет представление о системах этических и интеллектуальных ценностей и норм, их значении в истории общества
ОПК-3 Способен составлять и оформлять научные и (или) технические (технологические, инновационные) отчеты (публикации, проекты)	ОПК-3.1 Знает основные правила оформления научных публикаций и научно-технической документации, в том числе с использованием прикладного программного обеспечения
	ОПК-3.2 Владеет на практике методологией составления научно-технических отчетов (проектов)
	ОПК-3.3 Владеет методами визуального и графического представления результатов научной (научно-технической, инновационной технологической) деятельности в виде отчетов, научных публикаций

2. Показатели оценивания компетенций

В результате изучения дисциплины «Английский язык для специальных целей» обучающийся должен:

знать:

- особенности видов речевой деятельности на английском языке;
- основные фонетические, лексические и грамматические явления и структуры, используемые в устной и письменной речи при общении на английском языке, их отличие от родного языка для аргументированного и логичного построения высказываний, позволяющих использовать изучаемый язык в повседневной, академической, научной, деловой и профессиональной коммуникации;
- межкультурные различия, культурные традиции и реалии, языковые нормы, социокультурные особенности поведения и речевого этикета страны изучаемого языка при устной и письменной межличностной коммуникации, межкультурном общении;
- виды коммуникативных намерений, соотношение коммуникативных намерений с замыслом и целью речевой коммуникации, типовые приемы и способы выражения коммуникативных намерений на английском языке в устной и письменной речи, принципы понимания коммуникативных намерений собеседников;
- особенности иноязычной академической коммуникации, приемы извлечения и сообщения иноязычной информации в академических целях;
- основы организации письменной коммуникации, типы коммуникативных задач письменного общения и функции письменных коммуникативных средств;
- специфику использования вербальных и невербальных средств в ситуациях иноязычной коммуникации;
- риторические приемы, используемые в различных видах коммуникативных ситуаций;
- виды и особенности письменных текстов и устных выступлений, общее содержание сложных текстов на абстрактные и конкретные темы, особенности иноязычных аутентичных текстов, универсальные закономерности структурной организации текста, в том числе узкоспециальных текстов;
- правила использования различных технических средств с целью поиска и извлечения иноязычной информации, основные правила определения релевантности и надежности иноязычных источников, анализа и синтеза информации;
- мировые достижения, открытия, события из области истории, культуры, политики, социальной жизни;
- общие формы организации групповой работы; особенности поведения и интересы других участников; основы стратегического планирования работы команды для достижения поставленной цели;
- стандартные типы коммуникативных задач, цели и задачи деловых переговоров, социокультурные особенности ведения деловых переговоров, коммуникативно-прагматические и жанровые особенности переговоров;
- основные виды, универсальные правила, нормы официальных и деловых документов, особенности их стиля и оформления деловой переписки;
- базовую лексику и терминологию для академического, научного и профессионального общения.

уметь:

- понимать и использовать языковые средства во всех видах речевой деятельности на английском языке;
- вести на английском языке в различных сферах общения: обиходно-бытовых, социально-культурных, общественно-политических, профессиональных;
- соблюдать речевой этикет в ситуациях повседневного и делового общения (устанавливать и поддерживать контакты, завершать беседу, запрашивать и сообщать информацию, побуждать к действию, выражать согласие/несогласие с мнением собеседника, просьбу);
- устно реализовать коммуникативное намерение с целью воздействия на партнера по общению начинать, вести/поддерживать и заканчивать диалог-расспрос об увиденном, прочитанном, диалог-обмен мнениями и соблюдая нормы речевого этикета, при необходимости используя стратегии восстановления сбоя в процессе коммуникации (переспрос, перефразирование и др.);
- письменно реализовывать коммуникативные намерения (информирование, запрос, просьба, согласие, отказ, извинение, благодарность);
- извлекать общую и детальную информацию при чтении аутентичных англоязычных текстов, в том числе научно-публицистических;
- сообщать информацию на основе прочитанного текста в форме подготовленного монологического высказывания (презентации по предложенной теме);
- понимать монологические и диалогические высказывания при непосредственном общении и в аудио/видеозаписи;
- понимать коммуникативные интенции полученных письменных и устных сообщений;
- развертывать предложенный тезис в виде иллюстрации, детализации, разъяснения;
- использовать современные информационные технологии для профессиональной деятельности, делового общения и саморазвития;
- передать на русском языке содержание англоязычных научных и публицистических текстов в сфере профессиональной деятельности;
- подбирать литературу по теме, составлять глоссарий, в том числе двуязычный, переводить и реферировать специальную литературу, подготавливать научные доклады и презентации на базе прочитанной специальной литературы, объяснить свою точку зрения и рассказать о своих планах;
- выбирать речевое поведение, тактики и стратегии в соответствии с целями и особенностями коммуникации;
- осуществлять устное и письменное иноязычное общение в соответствии со своей сферой профессиональной деятельности;
- учитывать особенности поведения и интересы других участников коммуникации, анализировать возможные последствия личных действий в социальном взаимодействии и командной работе, и с учетом этого строить продуктивное взаимодействие в коллективе;
- использовать приемы и принципы построения публичной речи для сообщения;
- профессионально-ориентированного содержания на английском языке;
- распознавать и дифференцировать языковые и речевые явления, выделять основную и второстепенную информацию при чтении аутентичных текстов и восприятии речи на слух, использовать типовые средства устной и письменной коммуникации в межличностном общении; применять адекватные коммуникативные средства в стандартных ситуациях общения на профессионально-ориентированные темы;
- пользоваться графическими редакторами, создавать легко воспринимаемые наглядные материалы;
- описать графическую информацию (круговая гистограмма, таблица, столбиковый и линейный графики);
- написать короткую научно-исследовательскую статью по теме своего исследования;
- написать саммари, ревью, краткую статью-совет на предложенную тему;
- реферировать и аннотировать иноязычные профессиональные тексты;
- создавать деловую корреспонденцию с учетом социокультурных требований к внешней и внутренней формам текста и использованием типизированных речевых высказываний;
- уметь представлять результаты исследования в письменной и устной форме;
- подбирать литературу по теме, составлять профессионально-ориентированный иноязычный тезаурус;
- выполнять перевод профессиональных текстов с иностранного языка на государственный язык Российской Федерации с учетом лексико-грамматических и стилистических особенностей языка оригинала и языка перевода и стандартных способов решения коммуникативных задач в области профессиональной деятельности;
- применять информационно-коммуникативные технологии в общении и речевой деятельности на иностранном языке;
- уметь выявлять и формулировать проблемы, возникающие в процессе изучения иностранного языка; оценивать свои возможности, реалистичность и адекватность намеченных способов и

владеть:

- межкультурной профессионально ориентированной коммуникативной компетенцией в разных видах речевой деятельности;
- различными коммуникативными стратегиями: учебными стратегиями для организации своей учебной деятельности;
- стратегиями рефлексии и самооценки в целях самосовершенствования личных качеств и достижений;
- стратегиями восприятия, анализа, создания устных и письменных текстов разных типов;
- интернет-технологиями, в том числе технологиями искусственного интеллекта на базе нейронных сетей, для выбора оптимального режима получения информации; компенсаторными умениями, помогающими преодолеть «сбои» в коммуникации, вызванные объективными и субъективными, социокультурными причинами;
- разными приемами запоминания и структурирования усваиваемого материала;
- навыками эффективного взаимодействия с другими участниками коммуникации;
- презентационными технологиями для сообщения информации;
- технологиями командных коммуникаций, позволяющими достигать поставленной задачи
- риторическими техниками;
- различными видами чтения (поисковое, ознакомительное, аналитическое) с целью извлечения информации;
- методом поиска и анализа информации из различных источников в профессиональной области;
- навыками аннотирования и реферирования оригинальных научно-публицистических и научно-исследовательских статей;
- приемами оценки и самооценки результатов деятельности по изучению иностранного языка
- приемами выявления и осознания своих языковых возможностей, личностных и профессионально-значимых качеств с целью их совершенствования;
- умением понимать речь носителей и не носителей языка и адекватно реагировать с учетом культурных норм международного общения;
- навыками публикации результатов научных исследований в научных изданиях на английском языке;
- умением создавать ясные, логичные высказывания монологического и диалогического характера в различных ситуациях бытового и профессионального общения, пользуясь необходимым набором средств коммуникации;
- приемами публичной речи и делового и профессионального дискурса на английском языке.

3. Перечень типовых (примерных) вопросов, заданий, тем для подготовки к текущему контролю

Перечень типовых контрольных заданий представлен в прикреплённом файле.

Методические рекомендации, определяющие процедуру оценивания знаний, умений и владений и (или) опыта деятельности текущего контроля успеваемости по дисциплине

Оценка знаний, умений, владений, характеризующая этапы формирования компетенций по дисциплине иностранного языка носит комплексный характер и проводится в форме текущего и промежуточного контроля успеваемости обучающихся, осуществляемого с помощью балльно-рейтинговой системы (БРС) МФТИ. Оценка успешности освоения дисциплины (модуля) выражается в 100-балльной шкале БРС МФТИ, как суммарные баллы, которые набирает обучающийся по результату текущего контроля успеваемости и промежуточной аттестации в семестре (итоговый рейтинг).

Текущий контроль успеваемости проводится в течение семестра с целью контроля усвоения у обучающихся знаний, умений и уровня владения иностранным языком для решения коммуникативных задач в социокультурной, академической и профессионально-деловой сферах деятельности, своевременного выявления сложностей при освоении дисциплины (модуля) и их устранению, а также оказания своевременной консультативной индивидуальной помощи обучающимся.

Показателем текущего контроля успеваемости служит выполнение всех видов учебной работы, предусмотренной рабочей программой дисциплины (модуля), в том числе аудиторная работа обучающегося, посещение практических (семинарских) занятий и академическая активность на занятиях по иностранному языку.

Виды, формы, критерии оценки, периодичность и порядок проведения текущего контроля успеваемости обучающихся (далее – контрольные точки) определяются самостоятельно в соответствии с поставленными задачами и спецификой реализуемой рабочей программы дисциплины (модуля).

К контролю текущей успеваемости относятся проверка знаний, умений и владений:

- на занятиях (опросы, интерактивные беседы, доклады, презентации, ролевые игры, выполнение контрольных заданий по разным видам речевой деятельности и тестов для проверки лексико-грамматических навыков);
- по результатам индивидуальной самостоятельной работы (подготовка устных докладов, выполнение тренировочных онлайн-тестов и заданий для контроля и самоконтроля умений аудирования, чтения, письма и лексико-грамматических навыков в LMS МФТИ.
- в ходе индивидуальных консультаций с обучающимися, имеющими академические задолженности.

Для организации текущего контроля учебных достижений внутри учебной дисциплины (модуля) определяются контрольные точки, оптимально расположенные во временном интервале изучения дисциплины (модуля) (План контроля результатов обучения) и доводятся до сведения обучающихся: для первого курса на второй неделе учебного семестра, в остальных случаях – на первом учебном занятии семестра, а также размещаются на образовательной платформе в LMS МФТИ.

На проверку письменных работ в рамках текущего контроля успеваемости в семестре отводится не более 7 календарных дней. Преподаватель ведущий дисциплину (модуль) обязан своевременно информировать обучающихся о результатах прохождения каждой контрольной точки, об учебных достижениях на разных этапах освоения дисциплины (модуля) и своевременно вносить результаты оценочных мероприятий (в том числе за выполнение письменных работ) в электронный журнал, чтобы обучающиеся могли своевременно видеть оценки на платформе LMS МФТИ.

Отставание обучающегося от графика мероприятий текущего контроля (невыполнение предусмотренных программой всех контрольных точек и несдача индивидуальных заданий и т.д.) по изучаемой дисциплине (модулю) приводит к образованию текущей задолженности.

Оценка за текущую работу в семестре определяется суммарно по окончании семестра на основе промежуточных рейтинговых баллов, полученных обучающимся в семестре, с учетом их общей трудоемкости и выставляется как средневзвешенный балл.

Баллы, составляющие текущий рейтинг, фиксируются педагогическим работником в электронном журнале LMS МФТИ. При подсчете рейтинговых баллов в LMS МФТИ применяется правило округления до целого числа.

Академическая честность и плагиат

Плагиат

Представляет собой незаконное присвоение чужих идей и результатов деятельности, использование не являющихся общеизвестными фактов, концепций или особенностей (устной или письменной) речи, заимствованных из другого источника без ссылки на него. При отправке любой работы (на бумажном носителе или в электронном виде) вы соглашаетесь соблюдать положения МФТИ о плагиате. Вы также обязуетесь создавать работы самостоятельно, с должным обозначением и цитированием всех использованных материалов из опубликованных или неопубликованных работ других лиц, а также предоставлять к проверке работы, не созданные в рамках иных учебных курсов. Кроме того, отправляя работу, вы даете согласие МФТИ на принятие возможных мер, целью которых является подтверждение подлинности представленного материала, включая (без ограничения нижеперечисленным) проверку работы на плагиат посредством специализированных сервисов и предоставление копии работы другому сотруднику (сотрудникам).

Использование ChatGPT и других инструментов генеративного ИИ: в рамках данного учебного курса разрешается использовать генеративный ИИ в определенных контекстах и при условии ссылки на такое использование. Департамент иностранных языков выступает в поддержку осознанного экспериментирования с инструментами генеративного ИИ, такими как ChatGPT и/или иными ресурсами. Однако при использовании этих инструментов необходимо принимать во внимание важные соображения, в том числе, касающиеся информационной безопасности и конфиденциальности данных, соблюдения установленных требований и авторских прав, а также академической честности. Необходимо указывать каждый факт использования инструментов ИИ, даже если целью использования является формирование концепций, а не создание готового текста или иллюстраций.

При использовании инструментов ИИ в ходе выполнения заданий необходимо создать документ (приложение к заданию), в который будут включены:

- диалог с инструментом ИИ полностью, с выделением наиболее релевантных фрагментов;
- указание на конкретный инструмент ИИ (например, ChatGPT или иной);
- объяснение того, каким образом использовались инструменты ИИ (например, с целью формирования идей, оборотов речи, создания элементов текста, длинных фрагментов текста, последовательности доводов в защиту той или иной теории, доказательств, иллюстраций основных концепций и т. д.);
- обоснование целесообразности использования инструментов ИИ (например, в целях экономии времени, стимулирования вдохновения или размышлений о поставленной проблеме; чтобы справиться с растущим стрессом, прояснить смысл текста, перевести текст и т. д.).

Исследования, фальсификация и подделка

От учащихся ожидаются честность и точность во всех представленных работах, будь то научные статьи или письменные работы на курсах журналистики или любых других учебных курсах. Подделка — это преднамеренное искажение данных, результатов или цитат, включая ложное цитирование источников или цитирование источников, которые не использовались в работе. Фальсификация — это манипулирование исследованием, включая искажение или сокрытие важных данных или результатов. Как и плагиат, подделка и фальсификация являются серьезными нарушениями академической честности, которые подлежат критической оценке со стороны администрации с последующим принятием дисциплинарных мер.

Политика курса и ожидаемые результаты

С целью стимулирования активного участия в обсуждениях на учебных занятиях, обучающимся выставляются баллы за посещение и академическую активность, как результат интеграции различных видов деятельности и проявлений активности, наиболее существенных именно в сфере учебных взаимодействий. Баллы выставляются за посещение каждого учебного занятия и активное участие в учебной работе на практических занятиях.

Посещаемость

Необходимо добросовестно посещать учебные занятия. В случае одного пропуска без уважительной причины (отсутствие подтверждающего документа/справки/больничного) оценка текущего рейтинга за курс снижается. Если обучающийся вынужден пропустить учебное занятие, то необходимо заранее уведомить об этом преподавателя любым удобным средством информирования (эл. почта, чат в LMS, чат курса, служебная записка от физтех-школы и т.д.).

Отсутствие на учебных занятиях (по уважительной/без уважительной причины) и отставание обучающегося от графика мероприятий текущего контроля (невыполнение предусмотренных программой всех учебных заданий, несдача индивидуальных заданий и т.д.) по изучаемой дисциплине (курсу) приводит к текущей задолженности.

4. Перечень типовых (примерных) вопросов и тем для проведения промежуточной аттестации обучающихся

Перечень типовых (примерных) вопросов и тем представлен в прикреплённом файле.

Критерии оценивания

Оценка успешности освоения обучающимися материала по дисциплине (знаний, умений, владений) характеризующая этапы формирования компетенций проводится в форме текущего и промежуточного контроля, осуществляемого с помощью балльно-рейтинговой системы (БРС) МФТИ и выражается в 100-балльной шкале (Оценка/Баллы):

Отлично:

Оценка «отлично (10)» выставляется обучающемуся, получившему 96-100 баллов в балльно-рейтинговой системе оценивания.

Оценка «отлично (9)» выставляется обучающемуся, получившему 91-95 баллов в балльно-рейтинговой системе оценивания.

Оценка «отлично (8)» выставляется обучающемуся, получившему 86-90 баллов в балльно-рейтинговой системе оценивания.

Хорошо:

Оценка «хорошо (7)» выставляется обучающемуся, получившему 81-85 баллов в балльно-рейтинговой системе оценивания.

Оценка «хорошо (6)» выставляется обучающемуся, получившему 76-80 баллов в балльно-рейтинговой системе оценивания.

Оценка «хорошо (5)» выставляется обучающемуся, получившему 71-75 баллов в балльно-рейтинговой системе оценивания.

Удовлетворительно:

Оценка «удовлетворительно (4)» выставляется обучающемуся, получившему 66-70 баллов в балльно-рейтинговой системе оценивания.

Оценка «удовлетворительно (3)» выставляется обучающемуся, получившему 60-65 баллов в балльно-рейтинговой системе оценивания.

Неудовлетворительно:

Оценка «неудовлетворительно (2)» выставляется обучающемуся, получившему 48-59 балла в балльно-рейтинговой системе оценивания.

Оценка «неудовлетворительно (1)» выставляется обучающемуся, получившему 0-47 балла в балльно-рейтинговой системе оценивания.

Критерии оценивания знаний, умений и навыков и (или) опыта деятельности представлены в прикреплённом файле.

5. Методические материалы, определяющие процедуры оценивания знаний, умений, навыков и (или) опыта деятельности

Промежуточная аттестация по завершению освоения дисциплины(модуля) проводится в 1, 3, 5 семестре (осенний) в форме зачета и во 2, 4, 6 семестре (весенний) в форме дифференцированного зачета. Каждый из них состоит из 2 частей: устная и письменная.

Промежуточная аттестация в форме зачета осуществляется в период зачетной недели.

На каждую часть зачета (устную и письменную) в рейтинге отводится по 10 баллов.

Из 10 баллов за устную часть зачета:

0-5 баллов формируются по результату участия студентов во всех устных видах речевой деятельности на учебных занятиях и выставляется в электронный журнал LMS МФТИ автоматически, как суммарный балл в конце осеннего семестра;

0-5 баллов обучающийся получает на зачетной неделе в период проведения промежуточной аттестации.

Формой выполнения письменной части промежуточной аттестации в форме зачета выступает независимое тестирование ИСТОК, проводимое ДИЯ на последней учебной неделе семестра и оценивается от 0 (ноля) до 10 баллов (п. 2.2 Положения о тестировании в Департаменте иностранных языков, в действующей редакции).

Промежуточная аттестация в форме дифференцированного зачета осуществляется в период зачетной недели, а в форме экзамена на экзаменационной неделе по экзаменационным билетам, которые включают в себя устную и письменную часть.

На каждую часть (устную и письменную) отводится по 5 баллов.

К устной части дифференцированного зачета/экзамена допускаются все обучающиеся, независимо от количества баллов, полученных за письменную часть.

Итоговый рейтинг за семестр при освоении дисциплины (модуля) или курса обучения (курс по выбору) составляет максимум 100 баллов и формируется как сумма баллов, состоящая из следующих компонентов:

Осенний семестр (зачет):

Текущий рейтинг (баллы по результатам текущего контроля успеваемости в семестре) составляет максимум 80 баллов, в том числе:

- 4 балла – посещаемость занятий;
- 12 баллов – академическая активность на учебных занятиях;
- 48 баллов – рубежи текущего контроля (контрольные точки);
- 16 баллов – выполнение обязательных письменных работ за семестр.

Максимальное количество баллов за промежуточную аттестацию составляет 20 баллов в том числе:

- 10 баллов – за устную часть;
- 10 баллов – за письменную часть.

Весенний семестр (дифференцированный зачет).

Текущий рейтинг (баллы по результатам текущего контроля успеваемости в семестре) – максимум 90 баллов, в том числе:

- 4 балла – посещаемость занятий;
- 12 баллов – академическая активность на учебных занятиях;
- 48 баллов – рубежи текущего контроля (контрольные точки);
- 10 баллов – независимое тестирование;
- 16 баллов – выполнение обязательных письменных работ за семестр.

Максимальное количество баллов за промежуточную аттестацию составляет 10 баллов в том числе:

- 5 баллов – за устную часть;
- 5 баллов – за письменную часть.

В течение учебного семестра по каждому модулю должен быть накоплен текущий рейтинг не менее 60 % от максимального значения текущего рейтинга.

Все виды учебных работ должны выполняться точно в сроки, предусмотренные программой обучения.

**Критерии оценивания знаний умений и навыков и (или) опыта деятельности
текущего контроля успеваемости и промежуточной аттестации**

1. Академическая активность на учебных занятиях

Описание критерия академической активности	Баллы
<ul style="list-style-type: none"> Демонстрирует отличное знание пройденного материала и умение эффективно его применять на практике Принимает активное участие в выполнении всех видов заданий на занятии Проявляет инициативу во взаимодействии с преподавателем и/или другими обучающимися Даёт обдуманные ответы и комментарии, которые способствуют более глубокому обсуждению предмета На вопросы и замечания обучающихся и/или преподавателя отвечает вовремя и в приемлемой форме 	2
<ul style="list-style-type: none"> Демонстрирует хорошее знание пройденного материала, но при применении их на практике демонстрирует незначительные затруднения Принимает участие в выполнении большинства видов заданий Готов сам принять участие в обсуждении, не дожидаясь, когда его спросят Даёт ответы на большую часть вопросов других обучающихся и/или преподавателя 	1.5
<ul style="list-style-type: none"> Демонстрирует удовлетворительное знание пройденного материала, но применение их на практике даётся ему с трудом Принимает участие в выполнении некоторых видов заданий Участие в обсуждении принимает время от времени Даёт ответ только на прямые обращённые к нему вопросы преподавателя и/или других обучающихся 	1
<ul style="list-style-type: none"> Демонстрирует неудовлетворительное знание пройденного материала, часто не может применить его на практике Не демонстрирует желания принимать участия в работе на занятии Редко принимает участие в обсуждении С трудом отвечает на прямые обращённые к нему вопросы преподавателя и/или других обучающихся 	0,5
<ul style="list-style-type: none"> Демонстрирует плохое знание пройденного материала Практически не принимает участие в работе на занятии На прямые обращённые к нему вопросы преподавателя и/или обучающихся ответа не даёт 	0

**2. Интегрированные рецептивные и продуктивные навыки:
аудирование/чтение —> письмо**

Баллы	Общее описание	Содержание	Коммуникативные навыки	Композиция	Уровень владения языком
5	Ответ соответствует условиям задания с небольшими погрешностями в полноте высказывания и отвечает следующим критериям	Ответ <ul style="list-style-type: none"> полностью соответствует условиям задания содержит необходимую и достаточную информацию из текста (письменного/аудио / видео) и ее анализ демонстрирует отличное понимание цели задания и целевой аудитории 	Студент <ul style="list-style-type: none"> демонстрирует глубокое знание норм выполнения конкретного типа задания использует соответствующий формат и стиль речи в процессе всего высказывания эффективно и убедительно передает идеи 	Ответ <ul style="list-style-type: none"> полон и внутренне непротиворечив (композиция логична и последовательна, текст читается легко) используется большое число элементов-связок число слов соответствует требуемому 	Ответ <ul style="list-style-type: none"> демонстрирует уверенное владение разнообразными грамматическими конструкциями и обладает словарным запасом, соответствующим требуемому уровню содержит незначительные ошибки, не

		<ul style="list-style-type: none"> • демонстрирует ясную последовательность изложения мыслей при наличии уместных уточнений и подробностей 			<p>влияющие на понимание</p> <ul style="list-style-type: none"> • ошибок в пунктуации, орфографии и правописании заглавных букв нет
4	Содержит критерии пунктов 5 и 3				
3	<p>Ответ в целом соответствует условиям задания, но в нем частично отсутствует необходимая информация или присутствуют неточности.</p> <p>Данный уровень отвечает как минимум трем из следующих критериев</p>	<p>Ответ</p> <ul style="list-style-type: none"> • в основном соответствует условиям задания • частично содержит информацию из текста (письменного/аудио/ видео) в соответствии с заданием • демонстрирует трудности в понимании цели задания и целевой аудитории • основные мысли раскрыты не полностью 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует достаточное знание норм выполнения конкретного типа задания • использует в основном соответствующий формат и стиль речи в процессе всего высказывания • относительно эффективно и убедительно передает идеи 	<p>Ответ</p> <ul style="list-style-type: none"> • не совсем полон, имеются внутренние противоречия • используется некоторое число элементов-связок • число слов соответствует требуемому 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует ограниченное владение словарным запасом и грамматическими конструкциями, которые студент должен использовать на требуемом уровне • содержит ошибки в лексике и грамматических структурах, не препятствующие пониманию • накладываются ошибки в пунктуации, орфографии, правописании заглавных букв
2	Содержит критерии пунктов 3 и 1				
1	<p>Ответ характеризуется недостаточностью передачи содержания или связности речи, или мало соответствует условиям задания.</p> <p>Данный уровень отвечает как минимум трем из следующих критериев</p>	<p>Ответ</p> <ul style="list-style-type: none"> • частично соответствует условиям задания • содержит недостаточный объем информации из текста (письменного/аудио/ видео) в соответствии с заданием • демонстрирует непонимание цели задания и целевой аудитории • выстроен нелогично и непоследовательно 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует недостаточное знание норм выполнения конкретного типа задания • при формулировании высказывания использует несоответствующий формат и стиль речи • не может эффективно и убедительно передать идеи 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует существенные логические противоречия и упущения • использование элементов-связок недостаточное или они употребляются неверно • число слов либо выше, либо ниже требуемого 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует минимальное владение словарным запасом и грамматическими конструкциями, соответствующими требуемому уровню • использует язык, который трудно понять из-за лексических и грамматических ошибок • демонстрирует незнание правил орфографии, пунктуации, правописания заглавных букв
0	В качестве ответа студент присылает скопированные отрывки оригинала, или ответ не соответствует заданной тематике, или сдан пустой документ.				

3. Интегрированные рецептивные и продуктивные навыки:

Аудирование/чтение —————> говорение

Баллы	Общее описание	Содержание	Коммуникативные навыки	Презентация	Уровень владения языком
5	Ответ соответствует условиям задания с небольшими погрешностями в полноте высказывания и отвечает следующим критериям:	Ответ <ul style="list-style-type: none"> • полностью соответствует условиям задания • содержит необходимую и достаточную информацию из текста (письменного/аудио/ видео) и ее анализ • демонстрирует отличное понимание цели задания и целевой аудитории • выстроен логично и последовательно 	Студент <ul style="list-style-type: none"> • демонстрирует глубокое знание норм выполнения конкретного типа задания • использует соответствующий формат и стиль речи в процессе всего высказывания • эффективно и убедительно передает идеи • постоянно удерживает внимание целевой аудитории (монолог) или активно взаимодействует с партнером 	Студент <ul style="list-style-type: none"> • демонстрирует четкое и естественное произношение • использует интонацию для эффективной передачи смысла • демонстрирует корректное использование фразового и словесного ударения • не проявляет явных колебаний 	Ответ <ul style="list-style-type: none"> • демонстрирует уверенное владение разнообразными грамматическими конструкциями и обладает словарным запасом, соответствующим требуемому уровню • содержит незначительные ошибки, не влияющие на понимание
4	Содержит критерии пунктов 5 и 3				
3	Ответ в целом соответствует условиям задания, но в нем частично отсутствует необходимая информация или присутствуют неточности. Данный уровень отвечает, как минимум трем из следующих критериев:	Ответ <ul style="list-style-type: none"> • в основном соответствует условиям задания • частично содержит информацию из текста (письменного/аудио/ видео) в соответствии с заданием • демонстрирует трудности в понимании цели задания и целевой аудитории • присутствуют ошибки в логике и последовательности высказывания, не оказывающие серьезного влияния на передачу смысла 	Студент <ul style="list-style-type: none"> • демонстрирует достаточное знание норм выполнения конкретного типа задания • использует в основном соответствующий формат и стиль речи в процессе всего высказывания • относительно эффективно и убедительно передает идеи • в основном удерживает внимание целевой аудитории или взаимодействует с партнером 	Студент <ul style="list-style-type: none"> • демонстрирует в основном четкое и естественное произношение • использует интонацию, которая частично эффективна для передачи смысла • в целом точно использует фразовое и словесное ударение • в целом сохраняет непрерывность высказывания, несмотря на некоторые колебания 	Ответ <ul style="list-style-type: none"> • демонстрирует ограниченное владение словарным запасом и грамматическими конструкциями, которые студент должен использовать на требуемом уровне • содержит ошибки в лексике и грамматических структурах, не препятствующие пониманию
2	Содержит критерии пунктов 3 и 1				

1	Ответ характеризуется недостаточностью передачи содержания или связности речи, или мало соответствует условиям задания. Данный уровень отвечает, как минимум трем из следующих критериев:	Ответ <ul style="list-style-type: none"> • частично соответствует условиям задания • содержит недостаточный объем информации из текста (письменного/аудио/ видео) в соответствии с заданием • демонстрирует непонимание цели задания и целевой аудитории • выстроен нелогично и непоследовательно 	Студент <ul style="list-style-type: none"> • демонстрирует недостаточное знание норм выполнения конкретного типа задания • при формулировании высказывания использует несоответствующий формат и стиль речи • не может эффективно и убедительно передать идеи • не может удержать внимание целевой аудитории или взаимодействовать с партнером 	Студент <ul style="list-style-type: none"> • демонстрирует нечеткое произношение и/или неправильную интонацию, препятствующую ясному пониманию • не может поддерживать непрерывность высказывания из-за частых колебаний, которые мешают слушателям 	Ответ <ul style="list-style-type: none"> • демонстрирует минимальное владение словарным запасом и грамматическими конструкциями, соответствующими требуемому уровню • использует язык, который трудно понять из-за лексических и грамматических ошибок
0	Говорящий не делает попыток ответить, или ответ не соответствует условиям задания				

Говорение

	Общее описание	Содержание	Коммуникативные навыки	Презентация	Уровень владения языком
5	Ответ соответствует условиям задания с небольшими погрешностями и в полноте высказывания и отвечает следующим критериям:	Ответ <ul style="list-style-type: none"> • полностью соответствует условиям задания • демонстрирует отличное понимание цели задания и целевой аудитории • выстроен логично и последовательно 	Студент <ul style="list-style-type: none"> • демонстрирует глубокое знание норм выполнения конкретного типа задания • использует соответствующий формат и стиль речи в процессе всего высказывания • эффективно и убедительно передает идеи • постоянно удерживает внимание целевой аудитории (монолог) или активно взаимодействует с партнером 	Студент <ul style="list-style-type: none"> • демонстрирует четкое и естественное произношение • использует интонацию для эффективной передачи смысла • демонстрирует корректное использование фразового и словесного ударения • не проявляет явных колебаний грамотно использует широкий набор цифровых средств для задач устного выступления (если такое требование следует из логики задания) демонстрирует развитое умение создавать красочные и информативные графические элементы и иллюстрации (если такое требование следует из логики задания) 	Ответ <ul style="list-style-type: none"> • демонстрирует уверенное владение разнообразными грамматическими конструкциями и обладает словарным запасом, соответствующим требуемому уровню • содержит незначительные ошибки, не влияющие на понимание
4	Содержит критерии пунктов 5 и 3				

3	<p>Ответ в целом соответствует условиям задания, но в нем частично отсутствует необходимая информация или присутствуют неточности. Данный уровень отвечает, как минимум трем из следующих критериев:</p>	<p>Ответ</p> <ul style="list-style-type: none"> • в основном соответствует условиям задания • демонстрирует трудности в понимании цели задания и целевой аудитории • присутствуют ошибки в логике и последовательности высказывания, не оказывающие серьезного влияния на передачу смысла 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует достаточное знание норм выполнения конкретного типа задания • использует в основном соответствующий формат и стиль речи в процессе всего высказывания • относительно эффективно и убедительно передает идеи • в основном удерживает внимание целевой аудитории или взаимодействует с партнером 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует в основном четкое и естественное произношение • использует интонацию, которая частично эффективна для передачи смысла • в целом точно использует фразовое и словесное ударение • в целом сохраняет непрерывность высказывания, несмотря на некоторые колебания использует некоторый набор цифровых средств для задач устного выступления (если такое требование следует из логики задания) демонстрирует удовлетворительный навык создания красочных и информативных графических элементов и иллюстраций (если такое требование следует из логики задания) 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует ограниченное владение словарным запасом и грамматическими конструкциями, которые студент должен использовать на требуемом уровне • содержит ошибки в лексике и грамматических структурах, не препятствующие пониманию
2	Содержит критерии пунктов 3 и 1				
1	<p>Ответ характеризует ся недостаточностью передачи содержания или связности речи, или мало соответствует условиям задания. Данный уровень отвечает как минимум трем из следующих критериев:</p>	<p>Ответ</p> <ul style="list-style-type: none"> • частично соответствует условиям задания • демонстрирует непонимание цели задания и целевой аудитории • выстроен нелогично и непоследовательно 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует недостаточное знание норм выполнения конкретного типа задания • при формулировании высказывания использует несоответствующий формат и стиль речи • не может эффективно и убедительно передать идеи • не может удержать внимание целевой аудитории или взаимодействовать с партнером 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует нечеткое произношение и/или неправильную интонацию, препятствующую ясному пониманию • не может поддерживать непрерывность высказывания из-за частых колебаний, которые мешают слушателям • даже при наличии необходимости не применяет цифровых средств для задач устного выступления • даже при наличии такой необходимости не применяет красочных и информативных графических 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует минимальное владение словарным запасом и грамматическими конструкциями, соответствующим и требуемому уровню • использует язык, который трудно понять из-за лексических и грамматических ошибок

				элементов и иллюстраций	
0	Говорящий не делает попыток ответить, или ответ не соответствует условиям задания				

Письмо

	Общее описание	Содержание	Коммуникативные навыки	Композиция	Уровень владения языком
5	Ответ соответствует условиям задания с небольшими погрешностями в полноте высказывания и отвечает следующим критериям	Ответ <ul style="list-style-type: none"> • полностью соответствует условиям задания • демонстрирует отличное понимание цели задания и целевой аудитории • демонстрирует ясную последовательность изложения мыслей при наличии уместных уточнений и подробностей • сопровождает диаграмму/схему корректными обозначениями (если такое требование следует из логики задания) 	Студент <ul style="list-style-type: none"> • демонстрирует глубокое знание норм выполнения конкретного типа задания • использует соответствующий формат и стиль речи в процессе всего высказывания • эффективно и убедительно передает идеи 	Ответ <ul style="list-style-type: none"> • полон и внутренне непротиворечив (композиция логична и последовательна, текст читается легко) • используется большое число элементов-связок • число слов соответствует требуемому • полностью соответствует правилам цитирования (APA) (если такое требование следует из логики задания) 	Ответ <ul style="list-style-type: none"> • демонстрирует уверенное владение разнообразными грамматическими конструкциями и обладает словарным запасом, соответствующим требуемому уровню • содержит незначительные ошибки, не влияющие на понимание • ошибок в пунктуации, орфографии и правописании заглавных букв нет
4	Содержит критерии пунктов 5 и 3				
3	Ответ в целом соответствует условиям задания, но в нем частично отсутствует необходимая информация или присутствуют неточности. Данный уровень отвечает как минимум трем из следующих критериев	Ответ <ul style="list-style-type: none"> • в основном соответствует условиям задания • демонстрирует трудности в понимании цели задания и целевой аудитории • основные мысли раскрыты не полностью • сопровождает диаграмму/схему в целом корректными обозначениями (если такое требование следует из логики задания) 	Студент <ul style="list-style-type: none"> • демонстрирует достаточное знание норм выполнения конкретного типа задания • использует в основном соответствующий формат и стиль речи в процессе всего высказывания • относительно эффективно и убедительно передает идеи 	Ответ <ul style="list-style-type: none"> • не совсем полон, имеются внутренние противоречия • используется некоторое число элементов-связок • число слов соответствует требуемому • в целом соответствует правилам цитирования (APA) (если такое требование следует из логики задания) 	Ответ <ul style="list-style-type: none"> • демонстрирует ограниченное владение словарным запасом и грамматическими конструкциями, которые студент должен использовать на требуемом уровне • содержит ошибки в лексике и грамматических структурах, не препятствующие пониманию • наличествуют ошибки в пунктуации, орфографии, правописании заглавных букв
2	Содержит критерии пунктов 3 и 1				

1	<p>Ответ характеризуется недостаточностью передачи содержания или связности речи, или мало соответствует условиям задания. Данный уровень отвечает как минимум трем из следующих критериев:</p>	<p>Ответ</p> <ul style="list-style-type: none"> • частично соответствует условиям задания • демонстрирует непонимание цели задания и целевой аудитории • выстроен нелогично и непоследовательно • не сопровождает диаграмму/схему какими-либо необходимыми обозначениями 	<p>Студент</p> <ul style="list-style-type: none"> • демонстрирует недостаточное знание норм выполнения конкретного типа задания • при формулировании высказывания использует несоответствующий формат и стиль речи • не может эффективно и убедительно передать идеи 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует существенные логические противоречия и упущения • использование элементов-связок недостаточное или они употребляется неверно • число слов либо выше, либо ниже требуемого • не соответствует правилам цитирования (АРА) (если такое требование следует из логики задания) 	<p>Ответ</p> <ul style="list-style-type: none"> • демонстрирует минимальное владение словарным запасом и грамматическими конструкциями, соответствующими требуемому уровню • использует язык, который трудно понять из-за лексических и грамматических ошибок • демонстрирует незнание правил орфографии, пунктуации, правописания заглавных букв
0	<p>В качестве ответа студент присылает скопированные отрывки оригинала, или ответ не соответствует заданной тематике, или сдан пустой документ.</p>				

3. Перечень типовых контрольных заданий для подготовки к текущему контролю по модулям, используемых для оценки знаний, умений, владений (навыков)

Модуль 1. Английский язык для общих целей (General English)

Тема 1. Человек.

Аудиторная работа: обсуждение вопросов и обмен мнениями; проверка усвоения лексического и грамматического материала.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий.

Домашнее задание: выполнение тренировочных лексико-грамматических упражнений.

Тема 2. Окружающий мир.

Аудиторная работа: проверка понимания иноязычной речи на слух (просмотр видео) обсуждение темы, проблемных вопросов и обмен мнениями.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий.

Домашнее задание: выполнение тренировочных лексико-грамматических упражнений.

Тема 3. Социальная жизнь.

Аудиторная работа: проверка понимания содержания и смысла прочитанного текста, проверка понимания иноязычной речи на слух, обсуждение темы, обсуждение вопросов и обмен мнениями.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: провести исследование наличия социальных проектов в МФТИ или предложить собственный социально-значимый проект, выполнения заданий, предусмотренных программой.

Тема 4. Развлечения и хобби.

Аудиторная работа: дискуссия; проверка усвоения лексического и грамматического материала.

Самостоятельная работа: проверка понимания содержания и смысла прочитанного текста.

Домашнее задание: подготовить устное сообщение, описать различные особенности культуры разных стран, выполнения заданий, предусмотренных программой.

Тема 5. Мечты и реальность

Аудиторная работа, обсуждение темы, сообщение и беседа по изученной теме, обсуждение проблемных вопросов и обмен мнениями; проверка усвоения лексического и грамматического материала; ролевая игра на основе пройденного материала.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: выполнение тренировочных лексико-грамматических упражнений.

Тема 6. Путешествия.

Аудиторная работа: обсуждение проблемных вопросов и обмен мнениями по теме; проверка усвоения лексического и грамматического материала; подготовить краткое описание путешествия.

Самостоятельная работа: проверка понимания содержания и смысла прочитанного текста (дополнительное чтение).

Домашнее задание: выполнение тренировочных лексико-грамматических упражнений.

1 семестр (осенний)

Уровень L1

Примеры заданий

Устная часть – развернутый ответ на три вопроса по одной из тем семестра

UNIT TEST

1. Complete the sentences with the correct verb form (present simple/ present continuous) and the given words: *relationships, generous, attractive, appearance, digital*.

- 1) My sister always _____ (look) very _____. She takes care of her _____ and always dresses nicely.
- 2) My friend John is _____. He always _____ (give) back to the community and is always helps others.
- 3) Nowadays, people spend a lot of time on _____ platforms. They _____ (check) their social media accounts and _____ (communicate) with their friends and family today.
- 4) Sarah _____ (no, wear) glasses usually, but today she _____ (wear) glasses.
- 5) The Smiths _____ (build) a strong and healthy family now _____. They _____ always (put) their children's needs first.

2. Fill in the blanks with the appropriate words: *role model, urban life, lifestyle, cheerful, social media*

- 1) In this digital age, _____ has become an integral part of our daily lives.
- 2) Many people look up to celebrities and public figures as their _____.
- 3) A healthy _____ is essential for well-being.
- 4) The fast-paced and dynamic atmosphere of _____ can be exciting and interesting.
- 5) She has a lot of challenges in her university life, but she is always _____.

3. Complete the sentences with the words: *exciting, excited, patient, advice, advise*

1. Can you please give me _____ on how to improve my English speaking skills?
2. I am so _____ to go on vacation next week!
3. The boat ride was really _____ and thrilling.
4. The teacher was very _____ and took the time to answer all my questions.
5. I would _____ you to take some rest and relax after a busy week.

4. Use comparative or superlative forms of adjectives.

1. Pete is (friendly) person in our group.
2. Sam is (tall) than his (old) brother Bob.
3. Life in the city is (exciting) than life in the countryside.
4. July is usually (dry) month in this region as it rarely rains.
5. That was (bad) meal I've ever eaten.

5. Put the words in the correct order and use : *is, are, was , were*

- 1 your / married / brothers ?
2. the / office / where / post?
3. your / singer / who / favourite?
4. last / he / the / in / year / Crimea.
5. weather / yesterday / the / but / hot / it / today / cooler.

6. Complete the sentences with - *there is/ there are / there was/ were/ has got/ have got*.

1. I a terrible headache.a medical center nearby?
- 2.. ... you ... any brothers or sisters? Yes, I .. an elder brother.
3. How many people in your family? five of us.
4.nine planets in the solar system but now ...only eight.
5. any historical monuments in your native town?

7. Put questions to the underlined words.

- 1.. He is interested in playing video games.
2. They were excited when they came to the university for the first time.
- 3.. There was much difficult coursework but I was able to pass everything.
4. He has got ambitious personal goals.
5. She is tall and slim.

8. Complete the sentences with correct modal verb: *should, must, can, don't have to, shouldn't*

1. You _____ use a mobile phone on a plane.
2. We _____ cook tonight. We can get a pizza.
3. You _____ study harder or you are going to fail.
4. I have some free time. I _____ help her now?
5. It's late. You _____ go to bed.

9. Use the correct past form of the verb. Use Past Simple.

1. James (be) born on July 2, 1999.
2. I (meet) my best friend at University 5 years ago.
3. Lina and I (go) to the cinema last week.
4. Jerry (be) thirsty, he (drink) all the water.
5. Kitty (write) a letter to Brad a few days ago.

10. Change the adjectives into adverbs and complete the sentences: *good selfish patient serious dangerous*

1. The girls waited ____ outside the door.
2. You shouldn't take what he says ____.
3. They walked ____ along the top of the wall.
4. He isn't sleeping ____ because he is worried about work.
5. I think she behaved very ____.

11. Choose the right word

1. It's *her/hers* problem, not *your/yours*.
2. *My/Mine* flat is bigger than *her/hers*.
3. Can we use *your/yours* computer? *Our/ours* isn't working.
4. Whose copy books are these? Are they *our/ours* or *their/theirs*?
5. Kate and John have got three children, but I don't remember *their/theirs* names.

12. Read the text and fill the gaps 1-12 with words a, b or c

Working with clocks

Arthur Repson **1** a career out of repairing clocks. In today's digital world, **2** clocks are very cheap, **3** seems everyone just throws out **4** clock as soon as it stops working. But in the old days, clocks were expensive and made to last, **5** if they went wrong wanted to get them repaired. Arthur likes to fix **6** old antique clocks. He **7** gets a lot of pleasure from going to people's houses and repairing really big 'grandfather' clocks.

Aged 64, Arthur hopes to retire **8**. He wants to teach **9** young person to repair clocks. But young people are not interested **10** this job. But there's good news: Arthur's local university **11** planning to organise a training course and they **12** Arthur to help.

1. a) make b) made c) making
2. a) where b) there c) what
3. a) what b) that c) it
4. a) there b) its c) their
5. a) when b) so c) but
6. a) really b) reality c) realistic
7. a) too b) also c) again
8. a) again b) soon c) early
9. a) --- b) the c) a

10. a) aboutb) ofc) in
 11. a) isb) arec) will
 12. a) wantb) wantedc) wants

13. Read the text and fill the gaps 1-6 with sentences a-g. You will not need one of the sentences.

Dear Rudy

I had an interview in London yesterday. I flew to Heathrow, one of four airports near London. I decided to take the train, the Heathrow Express, into London, not to save money but because it's faster than a taxi or a bus. **1** The company's office is five minutes from Paddington station, so I was soon at AGC Computers!

My interview was with Nick Kane, the Director, but as I walked through the door, guess who I saw? Tim Buckle, our old friend. **2** Tim sends you his greeting. We had a chat and then I went to Mr Kane's office.

I felt nervous before I walked into the office. I only had three hours sleep on Monday night and wasn't in my best shape. **3** I did not need to be nervous: Mr Kane was so pleasant that my worries disappeared immediately and I felt comfortable.

And... I got the job! The money is the same as I earn now but I get the chance to see the world. **4** I believe that in a couple of years I will get a salary increase. Also, there is a good bonus system in AGC. If I work well (and I will do my best), they will pay me extra 15% every four months. I'm going to Tim's house for dinner tonight. He's still the same... tall and thin but now his hair is very short. **5** He and Gina have got three boys and a girl, four kids! Can you imagine Tom as a father of four?

Actually, if you are still planning to change your job, you should think about ACG too. They are looking for IT people now. **6** With your experience and skills, you have very good chances of getting a job. So, bear that in mind.

See you.

Lukas

- a) His wife, Gina Firth, knows my sister.
 b) I hope to make a fast career there.
 c) They need more specialists in the customer service department.
 d) But after speaking with Tim I relaxed a bit.
 e) You will be good for them.
 f) I arrived at 10 am, waited ten minutes for the train and after a fifteen-minute journey was in London.
 g) We have lots to talk about.

Уровень L2

Примеры заданий

UNIT TEST

1 Fill in the gaps with the present simple or present continuous form of the verbs in brackets.

A: What's on your mind these days?

B: Well, I **11** _____ (think) about applying for that job at the new company. The opportunity there **12** _____ (seem) promising.

A: Are you free for a chat?

B: Not at the moment, I **13** _____ (have) lunch with a colleague. Can we talk later?

A: What is the soup like?

B: It **14** _____ (taste) delicious!

A: 15 _____ (you / understand) the instructions for the assignment?

B: Yes, they are quite clear.

2 Fill in the gaps with the present perfect or present perfect continuous forms of the verbs in brackets.

Sarah has a lot of hobbies. She **21** _____ (be) interested in gardening for 5 years. Her garden **22** _____ (change) greatly over this time. Besides, Sarah **23** _____ (learn) to play the piano and to compose music since the age of 15. She **24** _____ (create) several beautiful pieces of music during this time, and her skills are continuously improving. I **25** _____ (know) Sarah for five years and can say that she is a remarkable person.

3 Match the parts of the words with the given suffixes and put the suitable words into the gaps. In the table there are two parts of the words you don't need.

-able -ial -ible -ious -y -ance -less	appear____ convert____ suspicious____ artificial____ community____ tidy____ powerful____ reliable____ contribute____
---------------------------------------	--

1. There was nothing unusual about her physical _____.
2. He bought a _____ sports car to enjoy driving with the top down.
3. The detective found some _____ facts in her biography.
4. Her smile seemed so _____ that it was hard to believe she was really happy.
5. The house was always _____, thanks to her regular cleaning.
6. Despite his best efforts, he felt _____ in the face of the danger.
7. The new smartphone is known for its _____ performance and long battery life.

4 Choose the correct options a-c to complete the sentences.

1 Everyone in the class _____ phone numbers.

- a enhanced
- b expanded
- c exchanged

2 She had olive skin with attractive tiny _____.

- a eyebrows
- b eyelashes
- c freckles

3 After Roberto's father remarried, the boy hoped to have a (an) _____ soon.

- a half-brother
- b uncle
- c nephew

4 At the end of the academic year, life gets _____, there isn't enough time to meet up with friends.

- A infuriating
- b hectic
- c terrifying

5 Scientists are hoping for a _____ in the search for a cure for diabetes.

- a proof
- b assignment
- c breakthrough

6 The company buys damaged cars, _____ them and then sells them.

- a repairs
- b renovates
- c improves

7 They drove from middle-class _____ to a very poor inner-city area.

- a squares
- b suburbs
- c roundabouts

8 Most people in _____ areas work on farms.

- a rural
- b urban
- c ancient

9 He had _____ red hair, shaved at the sides and gelled on top.

- a slim
- b spiky
- c shoulder-length

10 We were waiting for them at the entrance to the cinema. _____, they were sitting in the bar.

- a while
- b meanwhile
- c until

Уровень L3

Примеры заданий

1. Написать блог «Вызовы студенческой жизни»;
2. Подготовить устное сообщение «Важное исследование и роль в науке»
3. Написать социальное объявление «Развитие Диксона: его стратегическая роль»

Задания на лексику

Task 1. Read the texts about ‘taxi parents’ in Australia and the UK. Fill in the gaps with a suitable word.

Two-thirds of Aussie parents get a (1) _____ as though they’re running a cab service for their kids. New research from Allianz Australia has (2) _____ that 61% of Australian parents say they spend the equivalent of a full working day behind the (3) _____ ferrying their children to school, daycare and extra-curricular activities. And one in 10 say they (4) _____ nine hours a week or more as ‘parent taxis.’ That’s 936 hours or the equivalent to 117 working days each year!

Some parents leave the house at 9am and don’t get home again until after 2pm by the time the children have (5) _____ all their weekend activities.

The grueling schedule has left them (6) _____ emotionally, mentally and physically, and while she wouldn’t change being a parent for the world, it’s left her feeling as if there is “no light at the end of the (7) _____.”

Sadly, these parents are judged by other parents. People say things like ‘they don’t have to do so many (8) _____’ or point out that as children they didn’t do so many of them.

Задания на аудирование

Task 1. Guess the words from their definitions.

1. _____ —	the former political system in South Africa in which only white people had full political rights and other people, especially black people, were forced to live away from white people, go to separate schools
2. _____ —	an account written by somebody, especially somebody famous, about their life and experiences
3. _____ —	not very often, rarely
4. _____ —	a home for children whose parents are dead
5. _____ —	an official order to control the movement of people or vehicles because of a dangerous situation
6. _____ —	the feeling of being comfortable and happy in a particular situation or with a particular group of people

Task 2. Fill in the gaps using the given adjectives and discuss the meaning of the phrases. far / shaky / voracious / bright / confined / international

have a _____ start	a _____ TV studio	bring _____ dimension
look on the _____ side	a _____ cry from	become a _____ reader

Task 3. Watch the video and fill in the gaps with up to 4 words in the necessary form.

1. Despite _____, his humour helped him get his ticket to belonging.
2. Trevor started his career in _____ which he took over from John Stuart.
3. While his ratings _____, he connected American politics with _____ in South Africa.
4. According to the law, _____ was a crime.
5. There was a possibility of being _____, if the police found little Trevor.
6. The fun games Trevor had ever played was _____, pretending they were cars.
7. Being raised as white helped him realise there _____ on what he could achieve.
8. Looking on the bright side, Trevor is supposed to be _____ in the family.

Task 4. Choose one question and write a paragraph between 35-45 words.

- Q1. What is true misery: having everything and not knowing its value or having nothing?
Q2. Have you learnt to appreciate freedom of leaving home once lockdown was over?

2 семестр (весенний)

Уровень L1

Примеры заданий

Устная часть – развернутый ответ на три вопроса по одной из предложенных тем за два семестра.

Письменная часть – письменный лексико-грамматический контрольный тест, контрольное задание по чтению и сочинение – рассуждение на одну из предложенных тем из семестра.

Final test.

1. Put the words in the correct order to make questions.

1. – long – you – in – lived – how – have – house – this?
2. – books – this – how – yet – author – many – written – has?
3. – a- you – ridden – ever – horse – have ?
4. – projects – this – you – year – have – many – completed – how?
5. – astronauts – space – how – on – many – international – worked – the – station - have?

2. Complete the sentences with the correct Past Simple or Present Perfect form.

1. The modern art exhibition (open) in Moscow two weeks ago and we already (visit) it.
2. Please, speak quietly, the children just (fall asleep).
3. Jack (finish) the course a month ago and he already (get) a well-paid job in a big company.
4. A team of scientists just (announce) positive results of their experiments.
5. How long you (know) Boris? – We first (meet) 5 years ago.

3. Match the synonyms:

- | | |
|-----------------|---|
| 1. desire | a. clear, apparent |
| 2. bond | b. authentic, unmixed |
| 3. resilience | c. captivating |
| 4. crew | d. link |
| 5. obvious | e. a feeling of wanting to have or do something |
| 6. distinction | f. use, spend |
| 7. consume | g. strength, persistence |
| 8. evaluate | h. team, group |
| 9. pure | i. estimate, calculate |
| 10. fascinating | j. contrast, separation |

4. Fill in the gaps with the appropriate form of the verbs using Future Simple, Present Continuous or 'be going to'

Verbs: lay, pass, do, sit, live, wear, open, be, leave, rain

1. What ____ you ____ to the party on Saturday?
- 2 He _____ at 10pm tomorrow.
3. Wait a minute, I _____ the door for you.
4. I _____ the exam, I'm determined to do it.
5. According to the weather forecast it _____ warmer tomorrow.
6. The sky is full of clouds. It _____.
7. I _____ the table if you agree to wash up.
8. What ____ you ____ tonight? Let's go to the cinema.
9. He's got the tickets. We _____ in the second row!
10. He doesn't think people _____ on other planets.

5. Complete the sentences with the words from the list: a)rely on b)victory c)compete d)common e)communication f)genres g)took part h)achieve i)coordination j)against

1. They have much in _____-they both like extreme sports.
2. ____ Day is the main public holiday in our country.
3. He is honest and responsible, you can _____ him.
4. Do you know what rock groups _____ in the festival?

5. Teams from Moscow universities _____in various kinds of sport.
6. Unfortunately face to face_____is decreasing nowadays.
7. Almost all kinds of sport need good_____
8. I am ____your proposal as I find it unacceptable.
9. One must work hard to_____ success.
10. What _____of films do you prefer?

6. Use the right form: –ing form or infinitive.

1. Teachers expect students_____hard all year (work)
2. He enjoys_____at weekends (cycle).
3. We hope _____you soon (see).
4. His parents agreed _____ him go to the party.(let)
5. Kate practices_____the piano every day (play)
6. Try to avoid _____silly mistakes in the test (make).
7. I don't mind _____them with their work (help).
8. He prefers _____at home to _____sport (stay do).
9. When I finish _____my homework I'd like _____out(do go).
10. He wants_____extra classes in Maths (take).

7. Read the text and choose the right variant for each gap.

HEINRICH SCHLIEMANN

Part 1

Heinrich Schliemann was born in Germany (1) 1822. His father was a well-educated (2) a poor priest. (3) the boy was seven years old, his father gave him a book about ancient history. Heinrich liked it very much and was mostly impressed (4) one picture. It was (5) illustration to the poem of the ancient Greek poet Homer 'Iliad'. 'Iliad' tells the story of the war (6) Greeks and Trojans. In the 19th century nobody believed (7) the city of Troy really existed. Young Schliemann decided that (8) day he would travel to (9) Troy could be situated, find (10) legendary city and prove that Homer's story was true. But (11) do that, he needed money and education. He managed to become a very wealthy man though he (12) got any education.

	A	B	C
1	at	in	on
2	but	and	so
3	where	while	when
4	from	in	by
5	a	an	the
6	between	of	among
7	if	that	in
8	the	one	any
9	when	what	where
10	the	a	no article
11	for	to	in order
12	no	never	ever

8.PART 2 Read the text and build the correct form of the given word.

As it was mentioned, Heinrich's family was not 1 WEALTH, so at the age of 14 he began to work. First, he was an 2 ASSIST in a shop. There he first heard 3GREECE language. One of the 4 BUY came from this country and spoke the language. Schliemann remembered his 5 IMPRESS from this meeting for many years. In several years he decided that 6 EMIGRATE would help him to earn money. He went to Amsterdam and worked in a 7COMMERCE company there and began learning modern and ancient Greek. Schliemann had a talent for languages, he was 8 ABILITY to memorize words and grammar very 9 QUICK. In 1842 his company sent him to Saint Petersburg where he soon opened his own company that soon became very 10 SUCCESS. By the age of 36 he had enough money to stop working as a 11 BUSINESS. He finally could 12 INVESTMENT his money in his project of finding Troy.

9.PART 3 Read the text and say if the statements below are true or false.

Amateur archeologist – археолог-любитель.

Excavations - раскопки

Layer - слой

In 1870-ies Schliemann was finally ready to start looking for Troy and came to Turkey where it could be found. However, he was not the only one who was interested in finding the mysterious world of Homer's poems. Before him, Frank Calvert, an English diplomat in Turkey and an amateurarcheologist had begun excavations of a high hill called Hissarlik in Western part of this country. He believed that Troy had to be situated there and found some ancient artifacts. However, he did not have enough funds to finish his project. Perhaps, it was Calvert who convinced Schliemann that to find Troy, it was necessary to continue excavations in Hissarlik. Schliemann came there in 1871 with a big team of workers and soon started finding some ruins and old objects. He then understood that the hill consisted of several layers: people were building walls and houses on the ruins of older buildings. Now archeologists know that there are 10 layers there, which means that people lived there for many centuries since 3000 BCconstructing new buildings over the old ones. Schliemann decided that the Troy of Homer was at the very bottom of the hill – what is now called Troy !. As he was not a professional archeologist, and in general archeology was not so well developed at that time, he carelessly destroyed all the upper layers. In 1873 he found a priceless treasure of gold and silver. He believed that it belonged to the Priam, the king of Troy mentioned by Homer. Until the end of his life Schliemann believed that he found what he had dreamed about from childhood. But even in his time many specialists were skeptical about his conclusions. Now archeologists know that he destroyed the real city of Homer's time which was in the layer *Troy VI*. What he found existed long before the times of *Iliad*.

1. Calvert did not finish the excavations because archeology was his hobby and not his main job.
2. The idea to look for Troy in Hissarlik belonged to Schliemann.
3. Schliemann realized that there were several different cities built one over another.
4. Nowadays archeology is more advanced than in 1870-ies.
5. Schliemann believed that the treasure he found was mentioned by Homer.
6. The Troy of Homer times was at the very bottom of the hill.

10. Write an essay on the topic "Travelling is my hobby" (80-100 words)

Уровень L2

Примеры заданий

1. Сделать устное сообщение на тему «Загадки Земли».
2. Сделать устное сообщение на тему «Каким я вижу будущее».

3. Написать эссе с выражением собственного мнения на тему “Нужно ли человечеству колонизировать другие планеты?»
4. Выполнить проверочную работу

UNIT TEST

1 Put the verbs in the brackets into the appropriate form – active or passive.

How Coca-Cola is Made

Coca-Cola is made in a special way. First, the ingredients 1) _____ (mix) together in a large container. Water 2) _____ (add) , and the mixture 3) _____ (heat). This step takes a lot of time! Next, the liquid 4) _____ (cool) down and _____ (filter) to make it clean and clear. Coca-Cola 5) _____ (contain) several ingredients such as carbonated water, sugar, caramel color, phosphoric acid, natural flavors, caffeine, and citric acid. They 6) _____ (add) a special syrup to its composition known as "Merchandise 7X", which is a closely guarded secret known only to a few individuals within the Coca-Cola company. This syrup is a key part of the unique flavor of Coca-Cola, and its recipe 7) _____ (keep) confidential. So, the syrup 8) _____ (add) to the liquid. When Coke is ready, it 9) _____ (pour) into bottles or cans. Finally, Coca-Cola 10) _____ (deliver) to stores all around the world.

2 Choose the correct option.

1 A: What do you think is the secret of success?

B: Well, I believe that if people 1) _____ (have/will have) a positive mindset and work hard, they generally 2) _____ (feel/will feel) successful.

A: And what's the secret to a happy family?

B: As well as positive attitude, if you 3) _____ (show/will show) your affection regularly and 4) _____ (be/are/will be) cheerful and kind to all members of the family, often spend time together, you 5) _____ (will probably live/probably will live) in a happy family.

3 Complete the dialogue using modal verbs of deduction ‘must’, ‘can’, ‘can’t’, ‘might/could’.

I broke my arm last month, when we were doing PE at school. We had to make a pyramid and I was right on the top. We 1) _____ have been doing it properly because suddenly the pyramid collapsed and I landed on my arm. The teacher 2) _____ have known immediately that I had broken my arm because he called an ambulance. I still remember the feeling-my arm was weak and looked strange. I was sitting and thinking: ‘It 3) _____ be broken. If it were broken, I’d be in agony’. I can only guess that not feeling any pain 4) _____ have been because I was in shock. The next three weeks in plaster were not the best in my life but it 5) _____ have been a lot worse!

4 Complete the text with the correct word. The first letter of the missing word is given.

When we talk about mindset, it's crucial to understand that our way of thinking plays an important role in how we understand the world around us and respond to challenges. Our beliefs shape our actions and decisions, as well as 1) **i** _____ how successfully we can navigate through difficulties.

One important aspect of mindset is the ability to see a way to grow where others only see obstacles. When faced with problems, one can either get stuck on them or use them as an 2) **o** _____ for

growth and development. In this context, getting in the process of finding solutions becomes a significant step towards achieving a **3) g**_____.

To **4) a**_____ success, it's essential to have a flexible approach to problem-solving. This means being ready to adapt to changes and learn from mistakes. Continuous striving for improvement and development leads to **5) p**_____ progress.

Уровень L3

Примеры заданий

1. Творческое задание: озвучка небольшого фрагмента фильма
2. Написать эссе-рассуждение: «Космический туризм»
3. Подготовить устное сообщение «Необычное путешествие»

Задания на грамматику

Task 1. Fill in the gaps with the correct form of the given word from the list.

ubiquitous / pick up / disclosure / advocate / drive up / take up / defy / emphasis

1. The Bauhaus students _____ when it was closed after 14 years of work.
2. The sales of Cesca chair were _____ steam in the spring.
3. But what wealth does is _____ the price of certain important things.
4. The Bauhaus' legacy has become _____ all over the world.
5. Some artists put a special _____ on colours in their paintings.
6. Gropius was a conservative who _____ fewer government control on development of the school.
7. This was the first (and last) time that Meyer dared to _____ the National Socialists.
8. The latest book about Andy Warhol had startling _____ about his private life.

Задания по аудированию

Test Listening Module 6

I Study the words:

- **sextant** - an instrument for measuring angles and distances, used to calculate the exact position of a ship or an aircraft
- **stocky** - (of a person) short, with a strong, solid body
- **stature** /'stætʃə/ - a person's height

II Listen to the mystery connected with Amelia Earhart and complete the gaps with up to three words.

1. Amelia Earhart and her _____ vanished without a trace while trying to _____ the globe.
2. Apart from human remains a research group investigating the plane crash found a _____ and a _____ on Nikumaroro island.
3. Upon the examination of the remains in Fiji's medical school Doctor Hoodless reasoned that they once had belonged to a _____.
4. The loss of the _____ of the Nikumaroro castaways makes it difficult to assess whether the measurements made by the British doctor are _____.
5. Richard Jantz claims that forensic anthropology was quite _____ at the time of the Electra's disappearance.
6. Today forensic anthropologists agree that the 19th-century formulae for calculating the stature _____ it.
7. Out of three _____ used back then in forensic examination only one is still valid these days.

Модуль 2. Английский язык для академических целей (English for Academic Purposes)

Тема 1. Образование

Аудиторная работа: сообщение на основе сравнения образовательных систем, проверка понимания содержания текстов, основных идей, деталей, проверка усвоения лексико-грамматического материала, контрольная работа.

Самостоятельная работа: составление конспекта/схемы основных идей текста (домашнее чтение), описание различных видов графиков.

Домашнее задание: прочитать текст про непрерывное образование и подготовить аргументы за и против на основе прочитанного, выполнения заданий, предусмотренных программой.

Тема 2. Креативность и творчество

Аудиторная работа: сообщение и обсуждение, дискуссия на основе услышанного и прочитанного материала, проверка понимания содержания и структуры текста (статьи, лекции/сообщения), проверка усвоения лексико-грамматического материала.

Самостоятельная работа: описание технологического процесса с использованием инфографики.

Домашнее задание: создать проект инновационного продукта (устройства/технологии/методики) направленного на повышение академических результатов студентов МФТИ, сделать его презентацию, выполнения заданий, предусмотренных программой.

Тема 3. Старое и новое «Интернет вещей»

Аудиторная работа: сообщение на основе информации собранной из различных источников, обмен мнениями, ролевая игра, проверка усвоения лексико-грамматического материала, проверка навыка составления конспекта.

Самостоятельная работа: поиск и сбор информации по теме, написание абзаца описания таблицы.

Домашнее задание: сбор информации и подготовка к выступлению в соответствии с ролью в ролевой игре, выполнения заданий, предусмотренных программой.

Тема 4. Жизненные ценности

Аудиторная работа: беседа, обсуждение проблемных вопросов, короткое сообщение, обсуждение, проверка усвоения лексико-грамматического материала, проверка понимания содержания и структуры текста (статьи, лекции/сообщения).

Самостоятельная работа: написание мотивационного письма.

Домашнее задание: прочитать текст на тему баланса между учебой и личной жизнью, составить диаграмму на основе прочитанного, выполнения заданий, предусмотренных программой.

Тема 5. Экология и здоровье человека

Аудиторная работа: короткое сообщение и его обсуждение, обмен мнениями, проверка усвоения лексико-грамматического материала, проверка понимания содержания и структуры текста (статьи, лекции/сообщения). Самостоятельная работа: поиск и сбор информации по теме для составления инфографики и подготовка сообщения.

Домашнее задание: написание аргументативного эссе, выполнения заданий, предусмотренных программой.

Тема 6. Интеллект

Аудиторная работа: дискуссия, сообщение и его обсуждение, проверка усвоения лексико-грамматического материала, проверка понимания содержания и структуры текста (статьи, лекции/сообщения).

Самостоятельная работа: написание эссе с аргументацией за и против.

Домашнее задание: провести исследование на тему эффективности одной из мнемонических техник и представить его результаты в виде презентации, выполнения заданий, предусмотренных программой.

3 семестр (осенний)

Уровень L2

Примеры заданий

I. Listen to a presentation on higher education by a Japanese student and complete the notes.

1. Aim of presentation: _____
2. Speaker's first aim: _____
3. Speaker's university: _____
4. Speaker's chosen department: _____
5. Speaker's second main aim: _____
6. Speaker's main message: _____

II. Complete the sentences with the words in the appropriate form.

purify accept apply can + impact account consequence may + expel have to
+ follow should + address explore

1. Today, UK universities _____ more and more international students.
2. Gold _____ through a process of heating.
3. A number of studies have indicated that pre-task planning _____ positively on language performance.
4. Mandarin speakers _____ for almost 15% of the world's population.
5. Any student caught cheating in an exam _____ from their university.
6. All research _____ these standards.
7. Each year over a thousand people _____ for just 50 places on the course.
8. There are a number of questions that _____ before the selection of a final study destination.
9. Language extinction is a natural _____ of a more globalized world.
10. While the scientists _____ the trench, the crew noted that the seabed was soft and featureless.

III. A. Read the text and decide which statement 1-3 contains the main idea.

1. Subjects taught in universities are more internationally relevant than in the past.
2. International cooperation between universities is stronger than in the past.
3. Universities have a greater international mix of students than in the past.

The internalization of higher education

Secondary and Higher education represents 34% of today's global market for education, and more students travel abroad for their university studies than ever before. Recent research suggests that in the region of four million students enroll each year in universities outside their native country. This number is steadily increasing. The largest numbers of international students are from China the USA and Western Europe.

International universities are not a new phenomenon. Nine hundred years ago, students from around Europe travelled to the first universities in Bologna, Paris, and Oxford. Over the centuries,

this trend continued creating strong academic networks, and helping information and research results to cross borders.

In the early part of the 20th century, the United States started to attract students and professors from around the world. American universities created a system where good teaching and first-class research took place under one roof. These universities were rich and had many of the best students, the best departments, and the most modern laboratories. Today, the vast majority of universities worldwide are following the US model.

Towards the end of the 20th century, universities in a number of other countries started to encourage more students from overseas. Today, many universities around the world have a large proportion of foreign students. For example, around 20% of the students at universities in the UK are now from another country. At the University of Oxford, students currently come from over 140 countries, and overseas students make up one-third of the student body. This broad international approach is mirrored in the teaching, as over 40% of the university's academic staff are citizens of foreign countries. Other countries which have a high proportion of foreign students include Australia, New Zealand, Japan, and some European countries, such as Luxembourg and Switzerland. The United States has over 20% of the world's international students, but this accounts for less than 5% of its total student numbers.

However, universities are not only attracting foreign students, they are also exporting their ideas abroad. By the 1990s, popular Western Universities were becoming more financially-driven and were beginning to act more like businesses. They moved closer to their customers by establishing international branch campuses, particularly in Asia and the Middle East, or by making alliances with the local universities. In this way they could offer a British, Australian, or American degree, for example, in the host country, so that the local student did not have to travel abroad. Overseas branch campuses are today a big part of the growing internationalization of higher education.

III. B. Complete the notes relating to the following dates.

1. 900 years ago _____
2. During the early part of the 20th century _____
3. In the late 20th century _____
4. In the 1990s _____
5. Today _____

IV. Describe the table. Write at least 100 words.

Annual professional service robots installed globally, by application area

Professional service robots are semi- or fully autonomous machines that perform useful tasks in a professional setting outside of industrial applications, such as in cleaning or medical surgery. Consumer service robots are not included.

Year	Transportation and logistics	Hospitality	Medical robotics	Agriculture	Professional cleaning
2022	86,000	25,000	9,000	8,000	7,000
2021	60,000	11,000	10,000	7,000	6,000

Уровень L3

Примеры заданий

I. Read the text and complete with the missing parts below:

- a. to gather and analyze greater amounts of data
- b. to have better productivity and reliability
- c. smarter and more automated machines
- d. provide preventive measures or repairing
- e. computer software
- f. greater system integration
- g. connected systems
- h. update their software
- i. connected ecosystems or environments
- j. real-time data

The industrial internet of things (IIoT) refers to the use of the internet of things (IoT) in industry. The IIoT allows industries and enterprises to have better productivity and reliability in their operations. All this is possible due to machine-to-machine (M2M) communication, big data, and machine learning. The IIoT includes industrial use (with robotics), medical devices, and performing processes using computer software.

What makes it unique is the joining of information technology (IT) and operational technology (OT). The convergence of IT and OT provides industries with greater system integration due to automation and optimization, and better visibility of the supply chain and logistics. The monitoring and control of physical infrastructures in industrial operations are made easier through the use of smart sensors and remote access and better control.

Real-time data from sensors and other information sources help industrial devices and infrastructures in their “decision-making,” to suggest insights and specific actions. Machines are able to take on and automate tasks that previous industrial revolutions could not do. So, the IIoT is significant for cases related to connected ecosystems or environments, such as how cities become smart cities and factories become smart factories.

Businesses select connected and smart devices, which gives them the means to gather and analyze greater amounts of data at greater speeds, predict points of failure, and even trigger maintenance processes independently (without an operator’s participation).

What are the security issues and challenges in adopting the IIoT?

Using of the IIoT can revolutionize how industries operate, but the challenges arise while maintaining security in conditions of increased connectivity. As OT is integrated into the internet, organizations face the introduction of smarter and more automated machines at work. As many businesses still use outdated software in systems and processes, they are in danger of hacker attacks. So manufacturers have to update their software to ensure the security of the users and provide preventive measures or repairing when security issues take place.

Even more, the need for cybersecurity becomes crucial as more significant security incidents take place. When hackers get access to connected systems it does not only mean that breaks can happen, but the major operations can be shut down.

What are the risks to IIoT systems?

Unsecure IIoT systems can lead to operational disruption and loss of money, among other considerable consequences. More connected environments mean more security risks, such as:

1. Software vulnerabilities that can be used to attack systems.
2. Open internet-connected devices and systems.
3. Malicious activities like hacking, targeted attacks, and data breaches.

4. System manipulation that can cause operational disruption or sabotage processes (e.g., production line stoppage).
5. System malfunction that can result in damage of devices and machines or injury to operators or people nearby.

II. Listen to the talk on IoT security and complete the notes.

Part I	Maire O'Neill delivers a talk on the importance of (1) _____. The whole speech can be subdivided into five parts for convenience. In the first part Maire O'Neill starts by giving an example of a(n) (2) _____ which illustrates the scale of the (3) _____ problem.
Part II	In the second part the speaker defines IoT. It is the (4) _____ of internet connectivity to (5) _____ devices and everyday objects. She also gives some numbers that illustrate how many devices are connected per person (by (6) _____ the number will grow to (7) _____ devices per person). In the second part Maire O'Neill includes the list of '11 least secure connected devices' made by <i>Tech Republic</i> , a (8) _____. The devices such as smart locks, smart baby monitors, (9) _____, (10) _____, (11) _____, (12) _____, (13) _____ are on the list.

III. Read the text and form new words from those in CAPITALS.

ELECTRICITY – (1) _____ UTILIZE of electricity is a process to which a number of bright minds have (2) _____ CONTRIBUTION over thousands of years. It can be traced back to Ancient Egypt and Ancient Greece, when Thales of Miletus conducted the earliest research into the phenomenon. The 18th-century American Renaissance man Benjamin Franklin is generally credited with the (3) _____ PROVE of our understanding of electricity, if not its (4) _____ DISCOVER. It's hard to (5) _____ ESTIMATION how important electricity has become to humanity as it runs the majority of our (6) _____ GADGET and shapes our way of life. The invention of the light bulb, although a separate contribution, (7) _____ TRIBUTE to Thomas Edison in 1879, is certainly a major (8) _____ EXTEND of the ability to harness electricity. It has significantly changed the way we live, work as well as the look and functioning of our cities.

IV. Describe the table. Write at least 150 words.

Annual private investment in artificial intelligence, by focus area, Facial recognition

Includes companies that received more than \$1.5 million in investment. This data is expressed in US dollars, adjusted for inflation.

Country/ Year	2020	2021	2022	2023
United States	\$ 177.79 mill	\$ 460.00 mill	\$ 370.36 mill	\$ 80.04 mill
European Union and United Kingdom	0	\$ 20.00 mill	\$ 37.04 mill	\$ 8.89 mill

China	\$ 617.72 mill	\$ 3.04 bil	\$ 55.55 mill	\$ 115.61 mill
-------	----------------	-------------	---------------	----------------

4 семестр (весенний)

Уровень L2

Примеры заданий

I. Listen to the presentation and complete the tasks.

Decide if these statements are true or false?

- Emily had a chance to travel a lot when she was a child. That explains why she loves the sea so much.
- Before plastic products appeared, life had been dramatically different.
- The speaker thinks that people can't come back to the world with no plastic.
- Emily thinks it is important to inform as many people as possible about the problem.

Choose the best option.

- *The majority/ Half* of sea birds have eaten plastic during their life.
- When plastic enters the ocean, it breaks into microscoplastic and *accumulates/ disappears*.
- The oceans *produce/ consume* oxygen.
- In circular economy we *reuse/ give up* plastic.
- The oceans are *too big/ not too big* to fail.

II. Fill in the gaps with the words from the box in necessary grammar form (3 words are extra). (10 points)

affect	component	deadly	emission	estimate	face	facilitate	moisture	species
		survival	sustain	threaten	wildlife			

1. The _____ of carbon dioxide from human activities, such as burning fossil fuels and deforestation, is a major contributor to climate change.
2. Pollution and deforestation can contribute to the spread of _____ diseases.
3. Preserving biodiversity is crucial for maintaining a healthy and balanced environment that can _____ life for generations to come.
4. This disease _____ not only physical health, but also mental and emotional well-being.
5. There are over 300 different _____ of birds that migrate through this area each year.
6. The adoption of renewable energy has _____ a reduction in carbon emissions.
7. The unchecked disposal of plastic waste into the oceans _____ marine life with devastating pollution.
8. Governments _____ with the task of developing policies to address the pressing issues of climate change.
9. Faced with a global pandemic, what strategies are essential for human _____?
10. Environmentalists _____ that over one million species are at risk of extinction due to human activities.

III. Read the text and decide in what paragraph or paragraphs we can find:

1. general information about changing of climate system?
2. detailed information about warming threat and its consequences?
3. attempts to find solutions to prevent climate change problems?
4. the admission of the fact of real problem?

Climate change is one of the most far-reaching social and political challenges that humans have ever faced. “Climate change is the defining issue of our time...we face a direct existential threat,” says UN Secretary-General António Guterres. Climate change is part of a much broader problem of unsustainable consumption of natural resources.

Warming of the climate system is unequivocal, according to the most prominent international scientific body of over 1,000 climate scientists for assessing climate change, the Intergovernmental Panel on Climate Change. Human influence on the climate system is clear.

What is open to question, however, is how we, as a species, can bend the curve of planetary warming before it is too late. We don't have much time. We have already emitted 2.2 trillion tons of carbon dioxide into the air, and the third trillion will be dumped into the air by 2030. How can we rapidly phase out our dependence on fossil fuels? How can we quicken the pace of technological innovation and create the social, political, and economic impetus to implement those solutions that are already available? How can we do so in a way that helps, not harms, the most disadvantaged people in society?

The industrial era was ushered in with the invention of the improved steam engine by the Scottish engineer James Watt in 1769. The Industrial Revolution that followed benefited humanity immensely with vastly improved health and wealth, but the improvement in the human condition came at a huge and unacceptable cost to the environment. Largely as a result of industrial emissions of carbon dioxide and other greenhouse gases, the planet has already warmed by about 1°C (1.8°F) since preindustrial times. If emissions continue at the present rate, the planetary warming is highly likely to reach 1.5°C (2.7°F) before 2030. The last time the planet was this warm was 130,000 years ago, and it was sufficient to increase sea level by about 6 to 9 meters (20 to 30 feet). With unchecked emissions beyond 2030, the warming could exceed 2°C by 2050, exposing more than 1.5 billion people to extreme heat waves, storms, floods, fires, droughts, and a variety of diseases.

Such projections were thought to be unrealistic or dystopian in the first decade of the twenty-first century, but not anymore. The science linking warming to extreme weather has improved so dramatically in the years following the Paris climate summit (in 2015) that the normally cautious American Meteorological Society declared in 2017: “We are experiencing new weather extremes because we have created a new climate.” This is very risky for human health.

Scientists by and large accept that we have entered the age of humans—the Anthropocene. In other words, we have transitioned from the Holocene epoch with its relatively stable climate to the Anthropocene, a period when climate change has led to climate disruption. Such far-reaching disruptions are no longer being debated among the vast majority (97%) of scientists.

IV. Write a motivation letter to apply for an internship. Make sure that you clearly state what motivates you in this work and value that your future work will bring to people.

Уровень L3

Примеры заданий

I. Read the text again and complete the table below. Choose ONE word from the text for each answer.

IQ shows	a person's _____ to utilize facts, _____ and _____ predictions, _____ puzzles and _____ information
SQ shows	a person's _____ to be creative and analytical, the power of _____ and _____, how _____ a person is to people in general, how _____ or selfish a person is
EQ shows	a person's _____ to understand, use and control emotions, how _____ a person can communicate and _____ stress, how well a person can _____ with others, _____ problems and _____ conflict

According to the studies, there are specific parts of the human brain that 'are responsible' for specific cognitive areas. They are all different and independent from one another. That is why we can identify many types of intelligence. The three most important ones are Intelligence Quotient, Spiritual Quotient, and Emotional Quotient.

The intelligence quotient (IQ) measures a person's thinking capacity. In a nutshell, it is meant to assess how well someone can utilize facts and reasoning to answer questions or make predictions. Short- and long-term memory is measured in IQ tests to examine this. They also assess how quickly people can solve puzzles and recollect information they have heard.

Spirituality shows a person's ability to be creative, alert, and analytical. Spirituality strengthens the power of intuition and awareness. It helps a lot in coping with such current problems like terrorism, egocentrism, and a lack of humanity. SQ makes us more responsible in relation to ourselves, our families, to people in general. It makes us more modest in how we see ourselves and significantly diminishes our selfish intentions. Thus, our life becomes more meaningful.

Emotional intelligence (EQ) is the capacity to understand, use, and control one's own emotions. People who have high EQ are able to reduce stress, communicate effectively, sympathize with others, overcome problems, and avoid conflict. Emotional intelligence also helps to develop stronger connections, succeed at school and at work, and to achieve your professional and personal objectives.

II. Watch the presentation on the benefits of sleep. According to Arianna Huffington, are the sentences true or false?

1. Women are in competition with each other for who can function with the least sleep.
2. We have great leaders, but without sleep they make bad decisions.
3. Lehman Brothers failed because they were too busy trying to make more and more money.
4. Someone with more sleep would have seen the "iceberg" that Lehman Brothers were going to hit.
5. Sleep isn't just important for individuals; it's important for the world.

III. Read the text and form new words from those in brackets.

The influence of Western mass media may be the most **1** ____ (**intuition**) force of cultural convergence. Social learning is the dominant method through which humans transmit cultural values and norms, and the diffusion of films, television, the internet, and **2** ____ (**education**) materials have made it easier to learn about the United States than any other country.

A recent analysis found that educational attainment correlated with cultural 3___ (**similar**) to the United States across the world, suggesting educational attainment may propagate Western values. Yet there is less evidence that non-educational mass media is a Westernizing force. Some countries 4___ (**specific**) ban or regulate Western media. Even when foreign media is unregulated, people often prefer national and regional content. And when people do 5___ (**consumption**) foreign media, there is no clear evidence that it leads them to accept foreign values. Studies that use media as an intervention tool to change norms in non-Western cultural groups have been careful to work with local organizations to produce culture-specific productions instead of emulating Western media. A mass media perspective, like an ecological perspective, offers no clear predictions for whether national cultures are converging or diverging in their values.

The World Values Survey (WVS) has become the proving ground for hypotheses about contemporary value change. The WVS is a multi-panel survey of 450,869 demographically 6___ (**represent**) people across 105 countries, with multiple waves of data from 76 of these countries (406,185 people). The first timepoint (wave) of this survey took place in 1981, and the seventh timepoint completed data collection in 2021. Few studies have examined every WVS timepoint, but many have 7___ (**analysis**) changes in the mean level of key values or value dimensions across subsets of timepoint and countries. Some studies have argued for global trends on specific values. One analysis documented a global rise of individualism. Another study reported that emancipative values are diffusing around the world, but this diffusion has been more rapid in liberal democracies than in other government types. Other research has focused on specific world regions. For example, membership within the European Union (E.U.) is associated with greater value similarity with other E.U. countries over time but also with value divergence from 8___ (**Centre**) Asian countries. The most thorough analysis to date compared 9___ (**respond**) on three WVS questionnaires across 18 countries at two timepoints (1990s vs. 2010s). It reported a worldwide shift among these countries towards cultural traits 10___ (**type**) of rich Western individualist countries, but there are also differences in the impact across the surveys.

IV. Write a motivation letter to apply for a Master's programme. Make sure that you clearly state what motivates you in this study and value that your future study will bring to people.

Модуль 3. Английский язык для специальных целей (English for Specific Purposes) (выбор направления 3.1 или 3.2 или 3.3)

3.1. Английский для исследовательских целей (English for Research Purposes)

Тема 1. Наука: вчера, сегодня, завтра

Аудиторная работа: дискуссия, сообщение и его обсуждение, проверка усвоения лексико-грамматического материала, проверка понимания содержания и структуры текста (статьи, лекции/сообщения); устное сообщение о передовых достижениях науки в своей области. Самостоятельная работа: поиск и сбор информации по теме, работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы

Домашнее задание: написание эссе о выбранном научном направлении «(Наука: вчера, сегодня, завтра)», выполнения заданий, предусмотренных программой.

Тема 2. Основы научно-исследовательской деятельности

Аудиторная работа: обсуждение различных видов письменной научной коммуникации, категорий научных журналов, в том числе журналы «белого списка» ВАК, обсуждение вопросов и обмен мнениями о методах исследования и сборе данных для исследования.

Самостоятельная работа: поиск и сбор информации по теме; работа с информационными ресурсами, наукометрическими базами данных научной литературы (Scopus, Web of Science, Google Scholar, РИНЦ), описать этапы научного исследования, включая формулирование проблемы, гипотезы.

Домашнее задание: сбор и анализ данных, уметь находить, анализировать и использовать научные публикации и научные базы данных, провести анализ структуры выбранного научного текста, аннотированная библиография и библиографический список, выполнения заданий, предусмотренных программой.

Тема 3. Основные тренды современного академического письма

Аудиторная работа: чтение, проверка понимания содержания и смысла прочитанного текста, обсуждение жанров представления научной информации, рассуждения о гибридной и конвергентной природе современных жанров академического письма, дискуссии о современных трендах в научной коммуникации и академическом письме, устное комментирование визуальных данных (инфографики) в научной коммуникации, особенностей представления, описания и интерпретации графической информации в научных статьях.

Самостоятельная работа: поиск и сбор информации по тематике, работа с информационными ресурсами, чтение научных статей по профилю подготовки.

Домашнее задание: выбор жанра и составление аннотации к научной статье, работа с информационными ресурсами и источниками информации. составить и презентовать речь для лифта с учетом ее жанровых особенностей, выполнения заданий, предусмотренных программой.

Тема 4. Наука, технологии и инновации

Аудиторная работа: работа с текстами различной научной тематики, обсуждение, обзор научных статей, рассуждения о последних достижениях науки и техники; дискуссии о существующих проблемах в области защиты прав интеллектуальной собственности; аргументированное выражение мнения об авторском праве научных исследований и исключительном праве на научное произведение.

Самостоятельная работа: работа с текстом, дополнительное чтение, составление критического обзора научных статей, опубликованных в высокорейтинговых англоязычных журналах

Домашнее задание: подготовка сообщения о взаимосвязи науки и техники; подготовить обзор научных статей, выполнения заданий, предусмотренных программой.

Тема 5. Стратегии популяризации научного знания

Аудиторная работа: устанавливать коммуникативную связь с аудиторией используя специальные риторические приемы и изобразительные средства речи, направленные на улучшение восприятия информации слушателей; выступление с устными сообщениями о средствах популяризации науки; дискуссии о социальном значении научного волонтерства; рассуждения и обмен мнениями о научной журналистике и ее роли в популяризации науки; делать сообщения в жанре пресс-релиза и научно-новостного отчета.

Самостоятельная работа: работа с текстом различных стилей, подготовка сообщений, работа с различными информационными ресурсами и базами данных, чтение научно-популярных по профилю.

Домашнее задание: подготовить устное сообщение о научном явлении простым языком для любой категории слушателя, подготовка выступлений в жанре пресс-релиза и научно-новостного отчета, выполнения заданий, предусмотренных программой.

Тема 6. Этика научного исследования

Аудиторная работа: дискуссия, устное аргументированные высказывания и выражение аргументированного мнения о важности научной этики в исследовательской и

публикационной деятельности; приводить в устной речи доказательства необходимости следования ключевым принципам научной и исследовательской этики; рассуждать о последствиях фабрикаций, манипулирования или искажения научных данных; объяснять типы нарушений в сфере этики научных публикаций; обмениваться мнениями о различиях между прямым цитированием, косвенным цитированием и перифразом,

Самостоятельная работа: работа с информационными источниками и базами данных, международными стандартами оформления цитирований; составление литературных обзоров по теме научного исследования.

Домашнее задание: подготовка к выступлениям на учебных занятиях, подбор информации, составить литературный обзор по теме научного исследования, выполнения заданий, предусмотренных программой.

5 семестр (осенний)

Примеры заданий

1. Лексико-грамматический тест

I. Listening.

1. *Listen to the report about the recent updates in science. Write down the numbers next to the items mentioned.*

_____ → the number of degrees (in Celsius) that the robot was subjected to in order to make it change form

_____ → the number of seconds that were required for the robot to change from solid to liquid form

2. *Answer the questions true (T), false (F) or not stated (NS).*

1. The robot can switch between solid and liquid states and move around by itself.
2. According to the team behind the study, potential uses for the robot include healthcare and electronics.
3. The team performed more than one type of experiment with the robot.
4. The robot has already been used to perform medical procedures on human beings.
5. Other microrobots made from different materials are being developed by the team.

II. Vocabulary

1. *Match words with their definitions*

1. relevant	a. the range of a subject covered by a book, program, discussion etc.
2. concise	b. connected with what is happening or being discussed
3. scope	c. to stop something
4. cease	d. to help someone or support
5. acquire	e. the quality of being good
6. resistance	f. to give a good reason or to be a good reason for
7. assist	g. to behave towards someone or deal with something in a particular way
8. justify	h. fighting against what is attacking you, or refusing to accept smth
9. treat	i. to prove that something exists or is true, or to make certain that smth is correct

10. distinctive	j. easy to recognize because it is different from other things
11. verify	k. to get or obtain something
12. merit	l. short and clear, expressing what needs to be said

2. Fill in the gaps with the words in the box. There are **two extra** words.

sumptions	enroll	handle	assemble	alumni	genuine	implications
aspiration	scope	diverse	relevant	range	substantial	

- The newspaper aims to cover a of issues (2 words).
- We believe that genetically modified crops will have serious ... for the environment.
- How long would it take to ... a robot?
- Your argument is based on a completely false ...
- He has always shown a ... concern for all members of his research team.
- Do you know anyone of the Cambridge ...?
- Jane cannot ... at his local school because the class is full.
- I'm afraid it's out of the ... of my lecture.
- This position doesn't fit his career
- I recommend you to ignore that comment, it's not ...

3. Match the parts of the words to complete the definitions below.

Definition	Prefix / root	Root
I. result or effect	1. con	a. sequent
II. happening after smth else	2. out	b. read
III. to give the main ideas of smth without details	3. on	c. forward
IV. to improve, increase, or add to smth	4. under	d. consistent
V. look through and mark mistakes	5. in	e. tribute
VI. containing parts that do not match; not always behaving in the same way	6. sub	f. going
VII. continuing to exist or develop	7. out	g. visor
VIII. begin to do something, especially smth challenging	8. dis	h. come
IX. direct, honest, easy to understand	9. in	i. come
X. a teacher with responsibility for a particular student	10. proof	j. line
XI. money you get from working or investment	11. super	k. take
XII. get rid because you no longer need	12. straight	l. card

4. Fill in the gaps with a proper word from the previous task. Change the form of the word if necessary.

- This work takes advantage of natural bacteria biosynthesis in a reproducible and ... (= clear) approach.
- Chapter 17 discusses recent, ... (=current) research and future research challenges.
- The most recent survey of rare birds was ... (=performed) in 2021.

4. The evidence given in the given paper was (= not matching) with the main argument of Smith & Brooks

5. In this journal, the authors are listed alphabetically, with the corresponding assumption that all authors ... (= give) equally to the paper.

5. Fill in the gaps with a preposition, if necessary

1. To come innovative solutions, research team members often engage in brainstorming sessions.

2. The study aims to fit ... the data into a mathematical model for accurate predictions.

3. The accuracy of the results heavily relies ... the precision of the measuring instruments used.

4. Ten influential scientists contributed ... the special edition of the journal.

5. Since 1901 the Nobel Prize has been awarded for achievements ... physics, chemistry, physiology or medicine, literature and for peace.

6. Researchers take advantage ... advanced technology to enhance their data analysis capabilities.

7. To delve ... the intricacies of the human brain, neuroscientists employ various imaging techniques.

8. Researchers modify the experimental conditions to eliminate potential confounding factors.

9. Recent studies have shown that children tend ... acquire language skills at an early age.

10. Heins & McCormack conducted extensive research ... the effects of climate change on marine ecosystems.

III. Grammar

1. Choose the right answer

1. We ... living in this climate.

- a. are using to b. use to c. are used to d. used to

2. Are you used to ... before going to bed?

- a. be read b. be reading c. read d. reading

3. I used to ... thirty cigarettes a day.

- a. be smoking b. smoked c. smoking d. smoke

4. This restaurant ... very good but now, it isn't.

- a. was used to be b. used to was c. use to be d. used to be

5. Don't worry! You will soon ... living in such a crowded city.

- a. be used to b. get used to c. used to d. to get used

6. It is an old habit in my country that people ... drinking tea after each meal.

- a. are used to b. are getting used to c. to get used to d. were used to

7. There be so many people in the streets but now there is barely anyone.

- a. would b. used to c. were used d. is used

8. When we had a serious argument, Simon and I ... talk to each other for weeks.

- a. didn't use to b. wouldn't c. don't use d. used

2. Insert a necessary article (a, an, or the). If the article is not needed, write -

1. ___ method introduced by Smith et. al (2021) yielded ___ same results as ___ other method used by Johson & Li (2018).
2. ___ Human Genome Project was ___ exciting development towards ___ personalized medicine.
3. ___ smartphone has become ___ inalienable part of ___ modern existence.
4. Did you get ___ scholarship you applied for?
5. ___ third of our team is practicing hard ___ every day.
6. ___ chairperson of our department, Dr. James Jones, has his doctorate from ___ University of Nebraska.
7. _ computers have changed ___ skills needed by ___ worker in ___ automobile industry.
8. ___ homework is ___ essential part of many university courses.
9. ___ water is necessary for all ___ forms of ___ life.
10. ___ tigers are ___ largest animas in ___ cat family.

3. *Put the following words in the plural.*

Axis, bacterium, nucleus, stratum, thesis, medium, focus, appendix, analysis, phenomenon

IV. Reading

1. *Match sentences A-H with gaps 1-7. There is one extra choice.*

- A. introducing material under the skin to produce protection against a disease
- B. by infecting someone first with cowpox and then with smallpox
- C. a terrible problem in many parts of the world
- D. a virus which produces fever and a rash
- E. MD from the University of St Andrews in 1792
- F. many honors from universities around the world
- G. due to a range of factors including better nutrition, housing and working conditions
- H. a mild illness caused by a virus related to smallpox

Vaccine pioneers

Average global life expectancy has more than doubled in the last two centuries (1) _____, as well as improved scientific understanding of the causes of disease and its prevention. The development of vaccines against common serious illnesses has saved many lives.

Edward Jenner (1749-1823) was an English doctor who developed a way to prevent smallpox, a highly contagious disease caused by (2) _____. Three out of ten people who caught smallpox died and survivors were left with terrible scars. Jenner was born in the English town of Berkeley. He left his hometown to study medicine, but then returned to Berkeley to work as a doctor. In 1796, a dairymaid came to see Jenner about a rash on her hand. Jenner immediately recognized that she was suffering from cowpox, (3) _____. Jenner had heard that people who caught cowpox seemed to be immune to smallpox and he wanted to test if this was true, (4) _____. He chose James Phipps, his gardener's 8-year-old son, for the experiment. So, he scratched the skin on Phipps' arm and rubbed in some live material from the dairymaid's cowpox rash. The boy became mildly ill but recovered quickly. Then Jenner introduced some live material from a smallpox sufferer's rash to Phipps' body in the same way. Phipps did not become ill with smallpox, even when Jenner repeated the procedure.

Jenner had established the basic idea of (5) _____. The process was named vaccination to acknowledge his work with cowpox – *vacca* means *cow* in Latin. Throughout his life, Jenner continued to work on this procedure and received (6) _____. Other scientists continued his work and improved the smallpox vaccine after his death, making it safer and more effective. Despite the availability of a vaccination, smallpox continued to be (7) _____. A campaign against smallpox was introduced by the World Health Organization (WHO) in 1959 but was not properly funded until 1967. Smallpox was not completely eradicated until 1980.

2. *Answer the questions to the text.*

1. What was the motivation behind Jenner's experiment with cowpox and smallpox?
2. How did Jenner test the theory that cowpox could provide immunity to smallpox?
3. What was the significance of Jenner's work in the field of medicine?

3. *Complete the summary using the words below. There are extra words.*

Edward Jenner (1749-1823) was an English (1)... who developed a method to prevent smallpox, a virus-based illness that (2) fever and a rash. In 1796, following a visit from a dairymaid, Jenner decided to (3) whether it was true that those who contracted cowpox appeared to be (4) to smallpox. He chose James Phipps, his gardener's 8-year-old son, for the experiment. Jenner introduced live material from a cowpox rash to James' body, and he found that he did not become ill with smallpox. Jenner's name is associated with this procedure – (5) Despite the vaccine's success, smallpox remained a global (6) ..., with a campaign introduced by the World Health Organization in 1959 but not fully eradicated until 1980.

investigate	injection	physician	vaccination	immunity	concern	causes	resistant
-------------	-----------	-----------	-------------	----------	---------	--------	-----------

2. Individual Reading

A. Read a scientific article from Q1-Q2 Scopus and Web of Science-indexed journals and analyze each part of the paper according to the following plan:

General information

1. The name of the paper.
2. Publication type (conference paper, journal article, book chapter).
3. Subject area and category of the journal / proceedings.
4. Journal scope, Q ranking, h-index, country of origin.

The given information can be found on <https://www.scimagojr.com/>

Abstract

1. Analyse the abstract and say if it provides:
 - logical reasons for conducting the study;
 - the description of the methodology applied in the research;
 - concise and clear report of the findings;
 - a logical conclusion based on the results.
2. Does the abstract clearly describe the paper's objectives?
3. Does the abstract correspond to the information presented in the research paper?
4. Does the abstract contain any information that is not investigated in the paper?

Introduction

1. Does the author present the reasons for conducting the study?
2. Does the introduction include background information?
3. Is there a clear thesis statement in the introduction?

Methods

1. Are the methods presented clearly enough?
2. Were the standard or modified methods used?
3. If modified, were the changes explained effectively?
4. Did the author indicate the limitations and the problems that arose while using the chosen methods?
5. Are the selected methods appropriate for the given research paper?

Results

1. Are the findings adequate and logical?
2. Is the data presented precisely?
3. If there are any tables or diagrams, are they easily-understandable? Comment on them.
4. Are the results helpful for the understanding of the topic?

Discussion

1. Did the author meet the objectives?
2. If the author did not meet the objectives, do they provide any explanation for that?
3. Are the findings interpreted adequately?
4. Is the author biased?
5. Does the author discuss the percent of errors that might occur while conducting the research?

B. Present your research paper analysis in class (a speech + PowerPoint Presentation).

Time limit: 7-10 min.

Your presentation should contain the following slides:

- 1) The title of the paper and its authors
- 2) Information about the journal (quartile, impactfactor, h-index, publisher)
- 3) Reasons for conducting the study and its purpose. Indicate why it is important in your field
- 4) Study procedure / design / experiment
- 5) Key results (2-3 slides)
- 6) Study application or/and the potential for future research
- 7) Thank you slide with personal contacts

Maximum: 10 slides

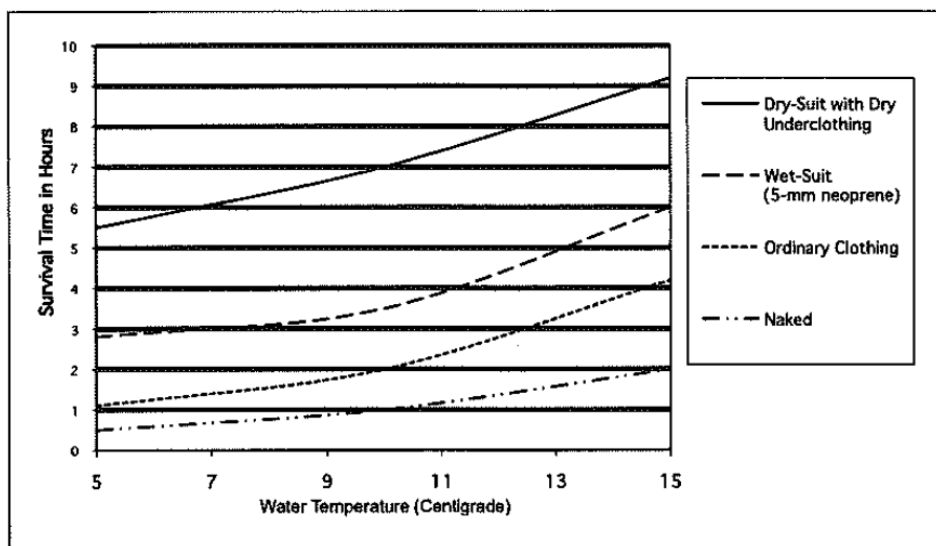
3. Written Assignment: Data Commentary

Write caption and data commentary for any of the visuals in Data Commentary Options

(<https://lms.mipt.ru/mod/page/view.php?id=188245>)

OPTION 3

Topic: survival time in water



Follow the given structure:

- location statement + summary sentence;
- highlighting statements;
- discussion/interpretation+hedging.

Example of data commentary:

Location statement + indicative summary

① Table 4 shows survey respondents' self-reported involvement in online misbehavior during the previous 12 months. ② According to the table, the most common online misbehavior is "unauthorized downloading of film and music." ③ As can be seen, just over three out of four students in the study have downloaded music or film more than once a year. ④ This very high percentage of misbehavior is especially alarming, since protection of intellectual property is a basic element for enriching the film and music industries. ⑤ Another notable result is that viewing pornographic materials on the internet was reported by 40% of the respondents, although purchasing pornography was reported by only a small minority of these respondents. ⑥ The least frequently reported misbehaviors were illegally using another person's email account or credit information, along with either completely copying homework from a website or buying an assignment from a source on the internet. ⑦ It is worthwhile to note that these different forms of online misbehavior seem to be patterned according to the degree of the perceived seriousness of the bad behavior. ⑧ Activities that are generally believed to be criminal (e.g., using someone's credit information) were less frequent than activities that, although unlawful, many do not view as criminal, such as downloading movies and music. ⑨ Illegal downloading may have an economic cause, but other reasons might be important, as well. ⑩ This problem will likely continue until reasons that students engage in this behavior are clearly identified.

Highlighting statement in terms of a linking *as* clause

Interpretations and implications

6 семестр (весенний)

Примеры заданий

1. Лексико-грамматический тест

I. Listening

1a. Listen to the audio and define the main idea

- 1) astronomers have observed a distant galaxy, which might be covered by a deep-water ocean.
- 2) how the James Webb telescope gathers information about distant planets.
- 3) scientists have located a new exoplanet that is potentially comprised of extremely hot water.

1b. Listen the audio again and answer the following questions.

- 1) Which two gases were found in the exoplanet's atmosphere?
- 2) How far is the exoplanet?
- 3) What is the name of the planet?
- 4) What breakdowns are captured by the satellite?
- 5) What is lacking in the atmosphere that provides for the existence of an ocean?
- 6) Which substance is believed to make up the seabed?

2. Listen to the audio 2 and decide if the following statements are True or False

- 1) Tech company, Baidu has seen a significant increase in the number of projects involving virtual influencers and performers in the past year.
- 2) The cost of creating virtual individuals has increased in the past year.
- 3) Li Shiyang, head of Baidu's virtual people and robotics division, expects the virtual human industry to decline in the coming year.
- 4) At least 36 % of consumers in China watched a digital celebrity or influencer perform in the past year.
- 5) The rise of virtual influencers and performers poses a threat to real people's job in the entertainment industry.
- 6) It's important for businesses to ensure the use of virtual talent is transparent and accountable.

II. Reading

3a. Read the text and match the methods mentioned with the correct heading. There is one extra heading.

- a. Using leftover food material
- b. Using the power of the sun
- c. Using energy created by movement
- d. Using the power of the ocean
- e. Using something similar to a plant

Unusual ways of generating energy

1. A popular way of keeping fit and having fun around the world, dancing could also help to solve the energy crisis. Clubs in Japan have experimented with special dance floors that generate a type of kinetic energy using crystals. While this sounds a little strange, there has already been a success in creating lighting effects through the movement of clubbers as they enjoy a Saturday night out. Imagine being able to create your own disco lights with your dance moves! Glowing roads
2. Also known as smart roads, this technology involves covering roads and bicycle paths with a special light sensitive material. The technique has been used in the Netherlands, in which cycle lanes absorb solar energy during the day and, using the collected power, glow at night, reducing

the need for street lights. Smart road tech could also power electric cars with glass solar panels, although replacing road surfaces around the world could take quite a while!

3. Human bodies let off a lot of heat. Just think of the last time you were feeling cold, and huddled with a loved one for warmth. A crowd of people can turn a nightclub in winter into a sweaty, unpleasant experience. In Stockholm, engineers have figured out a way to harness the body heat of people commuting to work. The city's railway station has been fitted with a special ventilation system that captures this collected heat and transfers it to a nearby office building.

4. Biofuel is one of the more promising alternatives to traditional fossil fuels, such as oil or gas. By using waste material, for example, leftover coffee beans or fat from chocolate production, vehicles can be powered and homes can be heated. Using leftover materials from food production is a good way to avoid some of the disadvantages of biofuel production, including the high cost of growing special crops and associated pollution. However, most kinds of biofuel will contribute to global warming, even if they are less destructive than traditional fuel sources.

5. A tiny organism that can be found in sea and freshwater around the world, algae could be a potential solution to our energy problems. With a high heat content compared to food sources such as sugar or corn, algae could have many applications, including use as biofuel to power planes or cars. These plant-like organisms use a natural process to convert sunlight into energy, creating fatty acids and nutrients which, in turn, can be converted into fuel. This alternative energy source has been studied for over 50 years, and could offer a reliable method of generating power. Drawbacks include additional ingredients, like fertilizers, which may not be easy to get hold of, and a large amount of land and water that is necessary in order to grow the organism at an industrial level.

3b. Read the text again. Complete the sentences with between ONE to THREE words from the article.

1. As well as being popular as a method of keeping fit, dancing could help ____ the energy crisis.
2. Clubbers enjoying a Saturday night out have been able to create ____ by moving.
3. Smart Road technology can involve ____ roads and cycle lanes with a special light sensitive material.
4. The technology could also allow ____ to be powered with glass solar panels.
5. Too many people can make a trip to a nightclub a sweaty, ____ experience.
6. A method of harnessing commuters' body heat has been discovered by ____ in Stockholm.
7. By using ____ from coffee or chocolate production, homes can be heated and vehicles powered.
8. Most kinds of biofuel tend to be less ____ than traditional fuel sources.
9. Found in both ____ environments, algae could be a solution to the energy crisis.
10. There are some ____, such as the need for additional ingredients like fertilizers.

III. Vocabulary

4. Use the words on the right to build word forms needed on the left.

1. Maintaining ____ in experimental design and data analysis is essential for advancing scientific knowledge.

rigorous

2. Governments can ____ innovation by providing grants to researchers and businesses.	incentive
3. Universities should ____ their research portfolios to encompass a wider range of STEM disciplines.	diversity
4. He suggested that we ____ funds to other projects.	
5. With smart technology, a range of household ____ and systems can be monitored and controlled.	apply
6. The fellowships are granted to ____ with outstanding academic merit	
7. ____ integration of different software systems is crucial for efficient data sharing and collaboration.	seam
8. The new drug has demonstrated a ____ increase in efficacy compared to existing treatments.	ten
9. social media can ____ the impact of scientific discoveries by reaching a wider audience and fostering discussion.	magnitude
10. Data compression algorithms can ____ large amounts of data without compromising its integrity.	volume

5. Fill in the prepositions, where necessary.

- The paper reported ____ 9 experiments.
- Not all papers will be considered worthy ____ publication.
- Let's consider the ratio of Y ____ X.
- They guarantee that research will be published regardless ____ results.
- We need to eliminate ____ waste and inefficiencies from the process.
- The weather can affect ____ our mood and behavior.
- The new technology paved the way ____ advancements in healthcare.
- He excels ____ chemistry.
- The interviewees were randomly allocated ____ one of the five groups.
- Researchers often resort ____ advanced statistical methods to analyze complex data sets

6. Match words and their definitions

- key word
- impact factor
- academic journal
- affiliation
- DOI

- an index based on the frequency with which a journal's articles are cited in scientific publications
- a significant word from a title or document used especially as an index to content
- information about the scientific organization based on which the author conducts the research.
- unique identifier for digital objects, making them easily traceable lifetime.
- journal in which the articles have been evaluated by peers prior to publication to assess their quality and suitability

IV. Writing strategies

7. Define the purposes of using quotations in the following sentences:

1. support for an argument or point of view
 2. explanation of a point, item, etc.
 3. introduction of a point or viewpoint
 4. exemplification of the point being made
-
- a. According to Lui, there are ‘two approaches to language: sentence linguistics and discourse analysis’ (Lui 2019: 132).
 - b. For example, they argue that ‘learning strategies have to be learned in exactly the same way as other complex cognitive skills’ (O’Malley, McIntire 2020: 289).
 - c. Thus, in contrast to American structuralist views on language, language was viewed as purposeful activity related to goals and situations in the real world. “The language which a person originates ... is always expressed for a purpose” (Frisby 2007: 16).
 - d. K. Anderson explains that ‘the move from declarative to procedural knowledge takes place in three stages: 1) the cognitive stage; 2) the associative stage; 3) the autonomous stage’ (Anderson 2015: 174).

8. Rewrite the following sentences using Hedging techniques. Each sentence should contain a different technique

1. People aged under 25 tend to use the internet more frequently than older people.
2. Coral reefs are seriously affected by rises in sea temperature.
3. Solar power offers a solution to producing clean, cheap energy in developing countries.
4. The study shows that bilingual children have better memory skills than children who only speak one language.
5. Taking a lot of vitamin C will help overcome a bad cold.
6. The Earth’s tilt was caused by a collision with another planet during its formation billions of years ago.
7. Electronic portfolios, or ePortfolios, have become very popular in recent years for showcasing one’s skills and achievements online. Employers in the USA are interested in the concept of ePortfolios.

9. As a proofreader, put article *the* or *0* article in the gaps

- 1) ___ researchers have a very privileged position as they are paid to do what they like doing. 2) ___ researchers in industry tend to be paid more than 3) ___ researchers at university. 4) ___ researchers at Manchester University are studying ways to improve English as a language of international business communication: the project is called Bizglish. 5) ___ only researchers in the project who are not being sponsored by the British government are those from abroad. 6) ___ Researchers who started the project have now all left the team.

2. Science in Simple words (watching + speaking)

Watching:

Ex. 1. Pre-watching discussion

1. Have you ever tried to communicate a piece of scientific information to lay public, for example, to your school friend or a family member?
2. Did you manage to make them understand you? What difficulties did you have? Did you find it challenging to keep the person interested?
3. Explaining his ideas, Fergus McAuliffe mentions his associations with the words “model” and “significant”. What contexts and associations come up first to your mind?
4. Fergus also mentions one person when he makes a joke. Find out who Bear Grylls is.

Ex. 2. Vocab preview: Match the words to their meanings or synonyms.

ambiguous	(formal) to copy
a bond	(formal) to start again
a cardiac arrest	a heart attack
askew /ə'skju:/	at an angle instead of straight
convoluted	complicated; difficult to understand
shiver	get sth back
tangible	not clear and therefore capable of being understood in more than one way
to blur	real; easily seen, felt, or noticed
to captivate	strong
to clink	strong connection
to embrace sth	to accept sth
to handle sth	to believe that smth is true
to reckon	to deal with sth
to regain	to make a short ringing sound
to repel	become less clear and sharp
to replicate sth	to keep smb's attention by being interesting, attractive etc.
to resume	damaged or destroyed
tough	a sudden shaking movement of your body because you are cold, frightened etc
wrecked	to keep smth away

Ex. 3. Predicting grammar: in these extracts from the speech, put the verbs in the form you find appropriate. While watching, check your predictions.

1. ... in the 1800s and early 1900s artists, poets and scientists (**engage with**) the public. Scientists (**tell**) stories of their latest works.
2. Scientists began (**spend**) more time (**research**) and less time (**engage with**) the public.
3. A few weeks ago, I (**work**) on a draft paper with my supervisor... and he kept on (**pull**) me up on areas where my scientific writing wasn't of a good enough standard.
4. So, this was me (**communicate**) as a scientist and I (**not be able**) (**step away**) from the objective language...

5. ... a few weeks ago, I found myself (**go over**) to a science communication competition where I (**have to connect**) with scientists and the public at the same time.
6. If your heart (**stop**) (**beat**), that (**be**) cardiac arrest leading to death.
7. What if you (**not need**) a beating heart (**be**) alive?
8. When the cells in our body (**freeze**), they (**dehydrate**).

Watching – TED Sharing science through story Fergus McAuliffe at TEDxDublin

Ex. 4. Questions.

1. The speaker is from Ireland. When you watch, pay attention to how Fergus McAuliffe pronounces “duck”, “does”, “first”. Could you understand an Irish / Scottish accent easily?
2. Why did the Royal Institution have to make Albemarle Street one-way? How does the speaker describe the connection between scientists and the public back then in the 1800s and early 1900s?
3. Why did the connection between scientists and the public weaken?
4. What are the three barriers to science communication mentioned by the speaker?
5. Why does the language of science have to be objective?
6. How did the speaker communicate warm feelings to his girlfriend?
7. What tool can help to overcome the barrier of effective science communication? Why does the speaker find this tool to be powerful?
8. Why does the presenter believe that scientists must not be afraid of simple language?
9. What oldest tools of communication does the speaker mention in the conclusion?
10. What competition did the speaker take part in? What were the rules?
11. Be ready to retell the wood frog story.

Ex. 5. Check your predictions on grammar in Ex_3.

Ex. 6. Match two halves of the phrases used in the video.

a block	and forth
a cube	arrest
to send back	below zero
cardiac	between life and death
cells resume	bond
clash	connection
draft	death
iris	for interpretation
inbuilt	of cheese
room	of context
statistically	of ice
strong	paper
tangible	with proportional force
to blur the line	safety mechanism

to cheat	significant
temperatures drop	the colored part of an eye
to evolve	the solution
to repel	their function

Ex. 7. Further discussion.

1. In your area of study, think of one phenomena / law / theory / experiment that would suit well to create a story.
2. What was the last lecture/conference/presentation where you got bored and distracted? What was wrong with that speech?
3. Do you have your own tips on how to communicate science effectively?

Speaking: Pick a topic (or suggest yours) and prepare a creative explanation for no longer than 3 mins. In small groups or solo.

Use analogies, anecdotes, metaphors, thought experiments, stories, etc. It should be a pop-science talk for non-experts.

Possible topics:

1. What is quantum computing and how does it work?
2. Why do planets have rings and are all the ring systems in the Solar System of the same structure?
3. Why do all planets orbit the Sun in more or less the same plane?
4. What are black holes and why do they break the laws of Newtonian physics?
5. Can mirages happen on Mars or Venus and why?
6. What are massless particles and how do they behave in a gravitational field?
7. Why do we find positive and negative terminals in a battery, while plugs and sockets have none?
8. How does Siri (or any other virtual assistant) recognize human voice?
9. Why does a rainbow have the shape of an arch?
10. Wave-particle duality. When and why do micro particles show wave-like or particle-like properties?

3. Written Assignment: Literature Review (Reading + Writing)

Look at the samples below and identify the genre (Literature Review? List of References? Annotated Bibliography? Critique?)

Sample 1

Samuels and Buncle (2006) found that 18 year olds were not very engaged in politics in Australia. However, by 2012, a number of studies had located some changes in the voting patterns of the age group (Hodges 2012; Leong 2009; Magnussen 2009; Nyugen 2011), while some others (Rippleside 2010; Tropea 2014; Underwood 2011) concluded that in several states

of Australia, there had been very little change. It appears there are regional variations in voting behaviours among 18 year olds, depending on the state or territory of Australia. One striking example is in Victoria, where in 2004, when 90% of 18 year olds voted for the first time (Rippleside, 2010:15). In 2013 this proportion had dropped to 47%, which was a very significant change. The reason for this, Rippleside argues, is that survey responses showed overwhelmingly the interviewees said they were too busy working to remember to vote (2013:16).

Sample 2

1. Allen, Douglas W. (1992) "Marriage and Divorce: Comment," The American Economic Review, 82(3) (June): 679-685.
2. Angrist, John D. and William N. Evans (1998) "Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size," The American Economic Review, 88(3) (June): 450-477.
3. Becker, Gary S., Landes, Elisabeth M. and Robert T. Michael (1977) "An Economic Analysis of Marital Instability," Journal of Political Economy, 85(6) (December): 1141-1187.
4. Bedard, Kelly and Olivier Deschenes (2003) "Sex Preferences, Marital Dissolution and the Economic Status of Women," forthcoming in the Journal of Human Resources.
5. Blau, David M. and Philip K. Robins (1988) "Child-Care Costs and Family Labor Supply," The Review of Economics and Statistics, 70(3) (August): 374-381. Brinig, Margaret F. and F.H.
6. Buckley (1998) "No-Fault Laws and At-Fault People," International Review of Law and Economics, 18(3) (September): 325-340.

B. Match the samples above with their function:

- a) provides the information for the readers to be able to find the cited sources
- b) provides context for your research by summarizing and analyzing key studies and theoretical concepts related to your research question
- c) provides information about a list of sources (source+commentary), including possible evaluation. Can be written either for personal use or published.

C. Match the literature review types to their descriptions.

Historical Review	<ul style="list-style-type: none"> · statistical synthesis of data from various studies, allowing researchers to draw more precise and generalizable conclusions by combining data from multiple sources · valuable when the aim is to quantitatively measure the effect size or impact of a particular intervention, treatment, or phenomenon.
Narrative Literature Review	<ul style="list-style-type: none"> · provides an in-depth evaluation of existing literature, scrutinizing sources for their strengths, weaknesses, and relevance
Critical Review	<ul style="list-style-type: none"> · focuses on the evolution of a topic over time, tracing its development through past research, events, and scholarly contributions
Meta-analysis	<ul style="list-style-type: none"> · descriptive; provides a broad overview of a topic without following any specific methodology · enables to present a simple, organized text with key points, theories, and conclusions drawn from existing literature on the subject · could lead to bias due to the subjective nature of selection and interpretation of knowledge
Scoping Review	<ul style="list-style-type: none"> · follows a structured approach to gathering, analyzing, and synthesizing the information collected

	<ul style="list-style-type: none"> · has specific, predefined criteria for choosing literature across multiple databases
Systematic Literature Review	<ul style="list-style-type: none"> · do not seek to answer specific research questions but rather explore broader topics · aims to map existing literature on a topic and provides researchers with an overview of available evidence, enabling them to identify potential gaps in research

D. The sentences below come from a Review of the Literature. In each case, decide which sentence (a or b) you prefer.

- (1a) X and Y are known to be characteristic of Z [Bach, 2014].
 (1b) X and Y are characteristic of Z [Bach, 2014].
 (2a) X and Y were once used in the Middle East and the Far East [Bakali, 2012].
 (2b) The use of X and Y has been ascertained in various regions of the Middle East and the Far East [Bakali, 2012].
 (3a) Also X and Y contain a small quantity of Z [Yamashata, 2013].
 (3b) Also X and Y have been reported to contain a small quantity of Z [Yamashata, 2013].
 (4a) In the literature the detection of X has also been reported in ceramic artifacts [Santana, 2014, McLaughlin 2015].
 (4b) X has also been identified in ceramic artifacts [Santana, 2014, McLaughlin 2015].
 (5a) In archaeological findings the occurrence of X may be correlated to Y [Shankar 2011, Hussein 2015].
 (5b) Several authors [Shankar 2011, Hussein 2015] have suggested that in archaeological findings the occurrence of X may be correlated to Y.

F. Delete any unnecessary phrases in this extract from the Review of the Literature.

You only need to delete phrases – do not make any other changes.

In a very interesting paper, MacNamara (1967) stressed the need to consider the degree of bilingualism not as a unitary component, rather as a level of competence in writing, reading, speaking and listening. In this view, bilingual competence is seen as a continuum in which individuals may vary in the degree of proficiency for each of the four linguistic skills. Several descriptors have been described in the literature that are used to define proficient or less proficient bilinguals. One of the most common, as reported in many papers, describes balanced bilinguals as those who have an equal mastering of both languages (Lambert, Havelka & Gardner, 1959; Starsky and Hutch, 1970; Bobzyer Oncle, 2011). Several authors in the more recent literature have argued that balanced bilingualism is very rare (see for example the following two works: Beatens Beardsmore, 1982; Grosjean, 1997). Thus, according to the literature taken as a whole, bilingual individuals may be more dominant in one language (L1) and have their second language (L2) as the subordinate language.

Reading:

G. We want you to approach this task as if you were a junior researcher doing a study of endangered species. You are now beginning to think about the literature on butterflies. Read through these summaries of research on the butterfly Mitchell's Satyr. Read the very short abstracts and then consider the questions and writing task after them.

State of Michigan website 2002

Mitchell's Satyr is one of the world's rarest butterflies, today found only in the northern U.S. states of Michigan and Indiana. Mitchell's Satyr is a dark, chocolate brown butterfly with eyespots and two reddish bands on its underwing. It only flies for three weeks each year, typically in the first three weeks of July. It is a federally endangered species. It needs a special kind of wetland habitat consisting of sedge fens with scattered trees.

Glassberg, J. 1993

Mitchell's Satyr was eliminated in the 1980s from its last remaining fens in the state of New Jersey because of collecting pressure by butterfly collectors.

U.S. Fish and Wildlife Service: Federal and State Endangered and Threatened Species Expenditures 2000

Mitchell Satyr was listed as federally endangered in 1992. No endangered species can be collected without a special permit. In 1999, the federal government spent \$65,000 on protecting Mitchell's Satyr and the states \$22,000.

Shuey, J.A. 1997

Of slightly more than 30 known historical populations, eleven existing populations are known from southern Michigan and one from northern Indiana. While some populations have been lost through habitat loss, no overt case of extinction is obvious.

J. Szymanski, J.A. Shuey, and K. Oberhauser, 2004

Population sizes are small, and they occupy small areas of the fens. Neither males nor females fly very fast. These factors make them vulnerable to disturbance.

Barton, B. 2007

After considerable research, we know that 17 populations survive in Michigan and two in Indiana (Hyde et. Al, 2001). Unfortunately the remaining sites are small and isolated from one another. Another problem is that it is also not fully clear which plants the butterfly larvae feed on. Immediate recovery efforts should focus on improving and enlarging existing habitats; over the longer term, possible ways of connecting some of the existing populations need to be explored.

Task:

1. *Formulate a research question.*
2. *What point could you make by using literature in these summaries? List as many arguments as you can.*
3. *Pick one argument from the list you created. Write a paragraph of a literature review to support the chosen argument.*
4. *Provide a suitable introductory sentence.*
5. *Provide several body sentences, referring to the given literature. Paraphrase the entries; do not use the same words or quotations.*
6. *Which type of a literature review is this?*

Writing: Write a literature review (250-300 words) on a topic of your interest. Use PHRASE BANK at <https://www.ref-n-write.com/blog/literature-review-section-academic-phrases/>

3.2. Английский для инженерии и технологий (English for Engineering and Technology)

Тема 1. Техногенная цивилизация, общество и человек

Аудиторная работа: обсуждение различных концепций развития техногенного общества, сравнение и анализ технического прогресса в различных областях, изучение структуры аргумента, проверка усвоения лексического и грамматического материала.

Самостоятельная работа: подготовка аргументированного высказывания «за или против» в устном и письменном формате.

Домашнее задание: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы, выполнение заданий для подготовки к практическим занятиям.

Аргументированное мнение в письменной и/или устной форме.

Тема 2. Человек в эпоху высоких технологий

Аудиторная работа: обсуждение в группе вопросов по теме инженерной этики и влиянии современных технологий на сознание людей и социокультурную среду человека; устное выступление, выступления с подготовленной презентацией.

Самостоятельная работа: подготовить описание основных принципов инженерной этики; подготовить аргументированное выступление о важности соблюдения этических норм при разработке и внедрении технологий; составить разъяснительный (причинно-следственный) параграф или эссе о влиянии технологий на развитие современного общества.

Домашнее задание: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы, выполнение заданий для подготовки к практическим занятиям.

Тема 3. Креативная составляющая инженерного мышления

Аудиторная работа: обсуждение кейсов и обмен мнениями по влиянию научной фантастики на современный технологический прогресс; используя новую лексику обсудить научно-фантастический прототип для описания изобретений будущего; участие в групповой дискуссии для решения противоречий с помощью ТРИЗ; обсуждение и сравнение предложенных решений, Достижение компромисса в выборе оптимального решения; изучение и проверка усвоения лексического и грамматического материала.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: творческое задание – подготовить и представить для обсуждения техническую информацию с помощью постера/инфографики (расчет размеров, прочности, мощности, подбор необходимых материалов и т.д.)

Тема 4. Инновации и технологический прорыв

Аудиторная работа: обсуждение факторов технологического прорыва стран Запада и Востока и изучение мирового опыта в области развития технологий; описывать основные принципы технической коммуникации для инженеров; объяснять разницу между специализированной и неспециализированной аудиторией; обсуждать применение дополненной и виртуальной реальности в инженерии; проверка усвоения лексического и грамматического материала.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: найти примеры (статьи на английском языке) прорывных технологий в отраслях промышленности в соответствии с вашим профилем, проанализировать ограничения и перспективы их применения, подготовить рассуждение по тематике «Как прорывные технологии меняют мир» в письменной и/или устной форме.

Тема 5. Эргономика и Юзабилити

Аудиторная работа: обсуждение развития эргономики и примеров user-friendly дизайна; обсуждение влияния человеко-ориентированного проектирования на различные сферы жизни и ожиданий от этой области в будущем.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: провести опрос среди сокурсников на тему «Design of the Future», обработать результаты в форме диаграммы. Подготовить и выступить с отчетом о результатах опроса.

Тема 6. Технологии и инновации в инженерных проектах

Аудиторная работа: обсуждение применения и цели развития прорывных технологий в области беспилотного транспорта; подготовка сообщения об инновационных инженерных проектах в данной сфере; изучение и применение лексики в требованиях к технической документации и терминологии технической коммуникации; анализ структуры и содержания технического отчета; дискуссии о роли международного сотрудничества в развитии космических технологий.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: Peer-review инструкций и технических обзоров, подготовленных студентами группы; написание инструкции, технического обзора.

5 семестр (осенний)

Примеры заданий

Задание 1. (Аудирование + Говорение (Listening+Speaking))

Task 1. Listening. Watch an extract from the film "The Internship" with the interview scene. How would you answer the brainteaser question asked by the interviewers?

Task 2. Paired activity. The teacher will give you a card with a tricky technical interview question. Brainstorm in pairs (3-5 minutes) and be ready to come up with your ideas.

Task 3, Speaking. Simulation Game: Mock Technical Interview

Part I: Preparation.

Preparation in class (5 minutes): You are divided into 2 teams: interviewers and jobseekers (the group is divided into halves).

Job seekers: choose a vacancy <https://hh.ru/>, bring it in class and prepare for the elevator pitch

Interviewers: study the vacancy the job seeker provides you with and create a brainteaser question.

Part II. Mock Interview.

Round 1: Describe yourself in 30-60 seconds (elevator pitch). Solve the case provided by the interviewer.

Round 2: The interviewers make notes in the elevator pitch assessment sheet (handed out by the teacher)

Round 3: Job Offer

The teacher collects the spreadsheets, counts the points and announces the best student to get their job offer.

Part III. Exchange roles.

Задание 2. (Чтение + Письмо (Reading+Writing))

Task 1. Read the text and fill in the gaps.

How the Light Bulb Changed the World

Few inventions have changed the world as dramatically as Thomas Alva Edison's light bulb. With the flip of a switch, he turned darkness into light, thus revolutionizing people's lives. While the

_____ - (effects/causes) of the light bulb have been overwhelmingly positive, scientists have also identified some of its harmful effects, proving that even the greatest achievements often bring with them unexpected side effects that offset their advantages.

One of the most positive of the light bulb's accomplishments is that it has allowed people to expand their lives into the dark hours of night. Human productivity increased dramatically after its invention _____ (because/because of) better lighting enabled people to read, study, work, play, and socialize into the late hours. Also the prevalence of affordable lighting allowed companies to continue to manufacture their products during the night hours, when necessary. Electric lighting also enhanced public safety _____ (because /because of) city streets being illuminated without the potential danger of gas. Now that light bulbs are everywhere, it is virtually impossible to imagine a world without them, for they are a core part of the infrastructure of modern society. Nonetheless, it is important to acknowledge the negative _____ (consequences/consequences of) the light bulb as well, including a phenomenon that scientists term light pollution.

Miranda (2003) laments the "changes in the biology of ecosystems, in the life of people _____ (due to/in order to) invasive lighting, and the 'artificialization' of the night" (p. 7). These problems have been _____ (caused by/resulted in) excessive lighting, primarily in urban areas. Animals and humans are biologically prepared for the changing rhythms of night and day, and constant lighting undermines these rhythms. Light pollution also clouds the night skies so that people cannot see the stars, which frustrates astronomers and anyone who loves looking up to the heavens to inspect its wonders.

Another unintended _____ (consequence/cause) of the light bulb is a phenomenon referred to as switch psychology, which theorizes that people become conditioned by light switches and other modern conveniences to expect immediate solutions to their problems. Switch psychology lessens a person's sense of self-efficacy, which Hockenbury and Hockenbury (2006) define as "The degree to which you are subjectively convinced of your own capabilities and effectiveness in meeting the demands of a particular situation" (p. 486). People are so used to light switches immediately bringing light that some find themselves at a loss for words when a light does not go on; they feel that they are incapable of correcting the situation or undertaking any steps to solve the problem.

Edison's achievement with the light bulb rightly deserves celebration for its contributions to human comfort and productivity. At the same time, we must be careful to recognize some of its unintended _____ (consequences/factors), such as light pollution and switch psychology, that threaten to tarnish his shining legacy.

Many lasting innovations that have contributed dramatically to humanity's advancement can also be the _____ (cause/effect) of unintended results, and we must strive to mitigate these consequences to take full advantage of their predominant benefits.

References

Hockenbury, D., & Hockenbury, S. (2006). *Psychology* (4th ed.). New York: Worth.

Miranda, P. (2003). Discurso del representante de CONAMA (Both versions, in English and in Spanish). In H. Schwarz (Ed.), *Light pollution: The global view* (pp. 3–14). Dordrecht, The Netherlands: Kluwer Academic Publishers.

Task 2. Read once again. Outline the structure.

Title:

1. Introduction

- A. Hook
- B. Connecting information
- C. Thesis statement
- II. Body Paragraph 1 (Cause 1 or Effect 1)
- III. Body Paragraph 2 (Cause 2 or Effect 2)
- IV. Body Paragraph 3 (Cause 3 or Effect 3)
- V. Conclusion

Task 3. Assignment. Writing 3. Write and upload an expository cause-effect essay (300-400 words). Topic: How does science-fiction influence innovation?

Задание 3. (Чтение+говoreние (Reading+Speaking))

Jigsaw Reading. Work in groups of 3. Read your card, summarize, and discuss it with your groupmates.

You have 5 minutes to scan the text and memorize the essential facts. After reading, be ready to present your card to your teammates.

Useful phrases for retelling the extracts to the teammates:

- This text deals with
- The extract is about ...
- The article is devoted to ...
- The text touches upon ...
- The article gives much information on ...
- The purpose of the text is to give the reader some information on ...
- The aim of the text is to provide the reader with some material (data) on ...

Discussion points

1. What should be done to protect sensitive information?
2. What must participants be informed about?
3. Are there any benefits in data sharing?
4. Why is it important to ensure fair and equitable access to bioinformatics tools and resources?
5. Why are AI and Machine Learning techniques frequently used in bioinformatics research?
6. To ensure the credibility of their work, what must researchers do?

Задание 4. (Аудирование+письмо (Listening+Writing))

Task 1. Listening. Watch the video 02.20-04.15 and

a) Write down key information about *how Chat GPT works*:

- useful vocabulary: nouns, terms, verbs, transitional phrases
- main stages

b) Compare the notes with your partner.

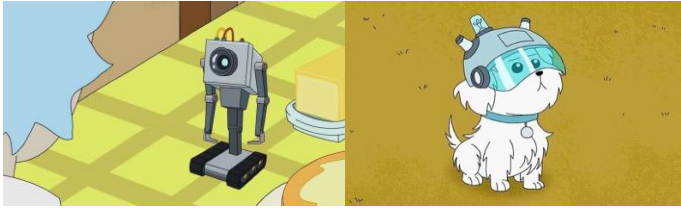
Task 2. Writing. Choose the words to create a paragraph. Mind the structure and make use of transitional words and phrases. (150 words)

d) Peer review (Max 6 points). Exchange with your groupmate. Share your feedback.

Задание 5. (Творческое задание (Письмо))

Step 1. Identify the technology.

Choose one of the pictures. Make a guess: *how might this technology be used?* Identify the character, create a plot and write a micro-SFP story (50-100 words).



Задание 6. Творческое задание (Говорение)

Create a digital story. Follow <https://character.ai/> (or any other appropriate AI tool) to choose a famous inventor/engineer you are going to speak about. They can be modern heroes or outstanding people of the past (Alan Turing, Thomas Edison, Henry Ford, James Watson, Leonardo Da Vinci, Nikola Tesla, Sataya Nadella, Pavel Durov, Elon Musk, etc.) Interview them about the importance of creativity for engineers and creative constraints/challenges they had or have to deal with. Record/voice a video clip (timing: 2-3 minutes) using various digital tools: photos, videos, illustrations, drawings, etc. to present the interview.

Задание 7. (Лексико-грамматический тест)

Task 1. Fill in the gaps, using word from the Target Vocabulary list.

- Engineers must _____ the highest standards of integrity.
- _____ approaches consider the entire system, not just individual components.
- Informed _____ is necessary for any research involving human subjects.
- Merit-based hiring practices can help _____ diversity and innovation in engineering teams.
- Understanding the _____ between different cell types is pertinent to developing effective treatments for diseases.
- Validating the accuracy of _____ models is crucial to ensure that they are reliable for clinical use.
- Researchers are studying the molecular mechanisms that govern _____ regeneration in order to develop new therapies.
- The ethical implications of _____ editing technology must be carefully considered before it is widely implemented in healthcare.
- Advances in _____ have allowed amputees to regain the use of their limb with greater functionality.
- The ability to _____ complex information into easily digestible formats is a valuable skill in scientific communication.

Task 2. Fill in the gaps.

- 9^2 - nine _____
 6^9 - six to the _____ of nine
 $\sqrt{64}$ - the _____ root of sixty four
 12 lb - 12 _____
 $10 : 2 = 5$ - Ten _____ by two is five.
 km^2 - _____ kilometer
 F° - _____

Task 3. Open the brackets.

- If the temperature _____ (reach) a certain level, the computer automatically will shut down to prevent damage.
- If we _____ (not discover) electricity, we would still be living in the dark ages.
- If we don't maintain our technology, it _____ (become) outdated and ineffective.
- If we _____ (not invest) in training and development for our engineers, we will struggle to keep up with advancements in technology.

5. If we had used better quality materials, the machine _____ (not break) down so soon.
6. If we _____ (follow) the safety regulations strictly, the accident wouldn't have occurred at the construction site.
7. If the temperature of water reaches 100 degrees Celsius, it _____(boil) and _____(turn) into steam.
8. If Newton's Third Law of Motion _____ (not exist), objects wouldn't experience equal and opposite reactions.
9. If I had known how to code, I _____ (be) able to automate repetitive tasks at work now.

6 семестр (весенний)

Примеры заданий

Задание 1. (Аудирование + Говорение (Listening+Speaking))

FYI:

no pain no gain - (saying) used to say that you need to suffer if you want to achieve something

a bummer /'bʌmə(r)/ - (inf) a disappointing or unpleasant situation

that's rad! – (sl) fantastic, great

armor - metal covers that protect ships and military vehicles such as tanks

brainchild - an idea or invention of one person or a small group of people

be out of the picture – (idiom) be excluded or no longer involved in a situation or event

maze - a complicated series of paths, which it is difficult to find your way through

bail out – (phr v) to jump out of a plane that is going to crash

Part 1. WATCHING

Watch the extract (first 10 min) of the movie and complete the following tasks.

TASK 1. True or False.

1. The film's "present day" is set in the year 2035.
2. Wade Watts lives in a wealthy, high-rise apartment complex in the real world
3. In the game the more coin you have, the more you level up.
4. Wade's avatar name in the OASIS is Art3mis.
5. James Halliday and his partner, Ogden Morrow released the first OASIS build in 2027.
6. People worshiped Morrow, when he remained the only owner of the game after Halliday had been out of the picture.
7. The "Great Easter Egg Hunt" is a competition for control of the OASIS.

TASK 2. Choose the right option.

1. What is the name of the virtual reality world in which most of the story takes place?
 - a) The Nexus
 - b) The Oasis
 - c) The Matrix
 - d) Second Life
2. What is the name of the corporation that seeks to control the Oasis for their own benefit?
 - a) Innovative Online Games (IOG)
 - b) Soranto
 - c) IOI (Innovative Online Industries)
 - d) Future Tech
3. What is the ultimate prize hidden within the Oasis that James Halliday left behind?
 - a) Immortality

- b) A powerful weapon
 - c) Complete control of the Oasis
 - d) 50 % of great sum of money
4. What does the concept of “gunters” represent?
- a) A group of hackers working for IOI
 - b) People that dedicate their lives to chasing the Easter egg
 - c) A secret society in the OASIS
 - d) a team of professional gamers
5. What are the “Easter eggs” within the Oasis?
- a) Hidden virtual pets
 - b) Rare virtual items that hold secrets to a larger challenge
 - c) Secret levels in the game
 - d) Hidden messages left by other users
6. How does the film initially portray the users of the OASIS?
- a) As highly skilled individuals with great power.
 - b) As escapists seeking refuge from their real lives.
 - c) As criminals and delinquents.
 - d) As intelligent researchers and coders.

Part 2. SPEAKING

Watch the last extract (10-16 min)

A) Answer the following questions.

/Teacher chooses 1-2 questions for each student/

1. How does the film introduce Wade Watts/Parzival? What do we learn about his personality, his goals, and his daily life in the opening scenes?
2. How does the film visually differentiate between Wade’s real-world self and his avatar, Parzival, in the beginning? Describe specific details.
3. What’s the OASIS? When was it created? Why did it immediately grow in popularity among people?
4. What kind of stuff does Wade use when he’s initially playing in the OASIS?
5. What is your first impression of James Halliday, as presented in the initial exposition? What kind of person do you think he is?
6. What did James Halliday say about the challenge? What is the “Great Easter Egg Hunt”?
7. Does the film show any specific details about the users of the OASIS, beyond their virtual avatars, in the opening scenes?
8. What specific technological devices does Wade use to access and navigate the OASIS? Describe the visual appearance of this technology. How does this contrast with the technology used by wealthier characters?
9. How is the character of Sorrento introduced? What clues does the film give about his personality?
10. What is the first impression we get of the character Aech? What details are given about their appearance and persona? What makes Aech a unique character in the beginning of the film?
11. Why is the race such an important set piece in the movie’s beginning? What does it establish about the OASIS and the world around it?
12. How does Wade/Parzival perform during the race? Are there any specific skills, maneuvers, or strategies he uses that set him apart?
13. How is Art3mis introduced during the race? What is her driving style like? What makes her stand out amongst the other racers?
14. We see Wade immediately begin seeking out Halliday’s challenge. What motivates this desire? Is it only the prize, or is there more to his ambition?

15. How does the film describe the “gunters” who are also trying to solve Halliday’s challenge? Does it offer any specific details about them?

16. What were your initial expectations for the film after seeing the beginning? Did the opening scenes successfully grab your attention?

B) Discuss the following questions (choose 1-2) with your partner/or in a small group.

1. Why do you think the OASIS became so universally popular? Is it simply escapism, or does it offer something more to its users?

2. How does the film’s opening effectively use visual storytelling to convey the scale and importance of the OASIS? What specific images or scenes stood out to you?

3. Why do you think the film chooses to initially show us so little about the characters’ real lives? Is the focus on the OASIS intentional?

4. Why do you think Wade (and many others) are so drawn to Halliday and his pop culture obsessions?

5. What does the introduction of IOI at the start of the film hint at regarding the film’s message regarding large corporations, and the control they have over people?

6. If you were living in the world of “Ready Player One,” do you think you would spend more time in the real world or the OASIS? Why?

7. If you had an opportunity to create virtual reality inside MIPT, how would it look like? What kind of avatar would you create? What specific abilities and opportunities would it have? For what purpose?

Part III. Speaking. Create Your Digital Twin

Work in pairs

You are tasked with designing a unique character for a virtual world, similar to the OASIS in “Ready Player One.” This isn’t just about choosing an avatar; it’s about consciously crafting a virtual being with specific physical characteristics and material properties that define their existence within this digital realm. Think about character’s appearance, personality, abilities and background.

Key Focus Areas:

1) Physical Features (Detailed Description):

A) Humanoid, Animalistic, or Other: Will your character be human-like, resemble an animal, be a hybrid, or something entirely alien? Describe the basic structure of their body. Consider proportions, limbs, head shape, etc.

B) Size and Height: How tall is your character? Are they bulky, slender, small, or large? Consider how their size might impact their movement or interactions with the virtual world.

C) Body Parts: Describe their unique parts – does it have wings? An extra pair of arms? Unique eyes? A tail? Scales? Feathers? Horns?

2) Skin/Outer Layer:

A) Color and Texture: Describe the surface of their body – Is it smooth, rough, scaly, metallic, feathery, etc.? What is the specific color and any patterns?

B) Body Heat: Does their body glow or radiate heat, and if so, what is the source of that heat?

3) Limb Structure:

A) Arms/Hands: Describe their arms, hands, fingers. Do they have any special modifications? Claws? Extra fingers?

B) Legs/Feet: Describe their legs, feet, toes. Do they have hooves, paws, or other non-human structures?

4) Material Properties (How Your Character Interacts with the World):

A) Surface Properties:

- Hardness/Softness: How resistant is their skin/outer layer to impact? Can they be dented, pierced, or crushed easily?
- Flexibility/Rigidity: How flexible are they? Can they bend and contort easily, or are they stiff and rigid?
- Texture: Is their surface smooth, rough, bumpy, or something else? How does the texture feel?
- Temperature: Do they radiate heat or feel cold to the touch? Are they affected by the temperature of their environment?
- Weight: Are they heavy, light, or do they have a density that defies expectations (e.g., a floating character)?
- Reflectivity: How much light do they reflect? Do they shine, glow, absorb light?

B) Internal Composition:

- Mechanical vs. Organic: Are they made of organic matter, mechanical parts, or a combination?
- Internal Organs: If organic, how do their internal organs function? Do they have unique organs?
- Power Source: If mechanical, how do they power their movements and abilities?
- Special Materials: Are they made of any unique or fictional materials (e.g., a type of crystal, a rare metal, a living plant)?

C) Interaction with the Virtual World:

- Movement: How do they move? (Walk, fly, swim, teleport, etc.) Are they fast, slow, graceful, or clumsy?
- Physical Interactions: How do they interact with objects in the virtual world? Can they lift heavy objects, manipulate technology, or cast spells? How do their physical characteristics help them with their activities?
- Damage/Durability: How do they react to damage? Can they regenerate, or do they accumulate damage permanently? What weaknesses do they have?
- Senses: How do they perceive the virtual world? Do they have heightened senses, or are they limited in any way? Do they use radar, thermal vision or sonar?

5) When Designing:

A) World Rules: What are the physical laws and rules of the virtual world? How might these rules affect your character's design and material properties?

B) Purpose/Role: What is your character's name and purpose in the virtual world? Are they a fighter, a builder, an explorer, or a leader? How do their features support their role?

C) Uniqueness: What makes your character's design and properties unique and memorable? By focusing on these details, you'll be able to create a truly immersive and well-developed character for your virtual world. Have fun exploring the possibilities!

Video examples (Characters+ their description, from Tekken7 for psp station):

<https://www.youtube.com/watch?v=9ym-u3i6Ke8>

List of characters from the video:

[0:33](#) Akuma [2:08](#) Alisa Bosconovitch [3:47](#) Anna Williams [5:17](#) Armor King [6:56](#) Asuka Kazama [8:38](#) Bob Richards [10:16](#) Bryan Fury [11:54](#) Claudio Serafino [13:33](#) Devil Jin [15:15](#) Sergei Dragunov [16:45](#) Eddy Gordo [18:13](#) Eliza [19:52](#) Fahkumram [21:13](#) Feng-Wei [22:22](#) Ganryu [24:05](#) Geese Howard [25:46](#) Gigas [28:01](#) Heihachi Mishima [29:42](#) Hwoarang [31:36](#) Jack-7 [33:37](#) Jin Kazama [35:37](#) Josie Rizal [37:20](#) Julia Chang [39:22](#) Katarina Alves [40:48](#) Kazumi Mishima [42:40](#) Kazuya Mishima [44:41](#) King [46:51](#) Kuma & Panda [48:32](#) Kunimitsu [50:07](#) Lars Alexandersson [51:42](#) Marshall Law [53:30](#) Lee Chaolan [55:34](#) Lei Wulong [57:32](#) Leo Kliesen [59:01](#) Leroy Smith [1:00:38](#) Lidia Sobieska [1:02:18](#) Emilie De Rochefort [1:04:13](#) Lucky Chloe [1:06:10](#) Craig Marduk [1:08:25](#) Master Raven [1:10:49](#) Miguel Caballero Rojo [1:12:37](#) Negan Smith [1:14:27](#) Nina Williams [1:16:12](#) Noctis Lucis Caelum [1:17:58](#) Paul Phoenix [1:19:56](#) Shaheen [1:21:11](#) Steve Fox [1:23:04](#) Ling Xiaoyu [1:24:35](#) Yoshimitsu [1:26:40](#) Zafina

Resources for creation your Character:

<https://www.blendbox.ai/>

****Additional. The teacher will give you a table for filling in detailed information about other students' avatars. Listen to others very carefully and be ready to choose the best/worst avatar at the end of the lesson. Give your reasons.*

SS's names + Avatar's name	Physical Features	Skin/Outer Layer	Limb Structure	Material Properties	Purpose/Role
1					
2					
3					
4					
5					
6					
7					

Задание 2. (Аудирование + Письмо (Listening+Writing))

Listen carefully to your classmate's oral presentation of their engineering prototype and write a constructive peer-review. Highlight the strengths of their presentation and prototype, suggest areas for improvement, and evaluate the clarity, structure, and use of visual/technical tools. Your feedback should be respectful, specific, and helpful for their growth. Submit your review in 250–300 words.

Задание 3. (Чтение + Говорение (Reading+Speaking))

Task 1. Reading. Read the text and do the online test. Decide if the following statements are True or False.

Electrical engineer Patrizio Manganiello was sitting in a lecture in Italy at the start of this millennium when he was suddenly hit by the undeniable reality of the disturbing headlines. During a course on renewable energy sources, his professor showed the students two graphs; one displayed the trend in global energy consumption, steeply rising like the flank of a mountain, while the other showed a red line, zigzagging but clearly going up. This was the surface temperature on earth. 'The professor factually described the correlation between the two graphs, explaining why it is so important for us to find alternative ways to produce energy,' says Manganiello. It was this eye-opener that drove him to devote his time to the search for smart alternatives for sustainable energy production.

Nearly twenty years later, Manganiello is now plunging into the new research field of Photovoltatronics, where solar cells and electronics merge. In a nutshell, he wants to design solar cells that not only convert light into energy but are also able to send and receive information. This

would not only concern information about the operation of the network of solar cells, but also other types of information, such as an impending disaster. Manganiello sees his work as a necessary search for a sustainable but above all fascinating future, a future in which solar panels exchange information to optimise their operation and self-driving cars use solar cells to communicate information about routes and traffic safety. 'Almost anything you can imagine is possible.'

Manganiello compares the current solar infrastructure with a creature that cannot see or feel. It is his ambition to provide solar cells and modules (groups of electrically connected solar cells) with these senses and enable them to communicate with each other and with the world. The crux of the technology involves deploying the existing infrastructure of a solar cell not only to convert light (photons) into charged particles (electrons), but also to provide them with sensors that can extract information from the light waves and enable them to broadcast their own light messages using LEDs or other light sources.

But Manganiello also has plenty of ideas for more creative applications for integrating energy generation and information transfer, in particular as part of the increasingly wide-scale integration of solar cells in urban environments in the coming years, where solar cells could be built into windows and walls, but also indoors to capture and reuse energy from artificial light. For example, a desktop covered with solar cells could convert the light produced by a desk lamp into energy to wirelessly charge a phone.

The electrical engineer holds his outstretched hands in front of his chest to illustrate two buildings opposite each other in his vision of the city of the future. If their walls can not only generate energy, but also exchange information through multifunctional solar panels, the buildings will be able to communicate with each other. For example, one building could report that too many washing machines are being used in it and that it requires extra power from its neighbour. Or they could share an internet connection using light signals. This could be of real benefit with the increasing scarcity of radio waves used for Wi-Fi. In time, all the buildings in a city will be able to communicate with each other and warn each other in the event of a fire, storm or flood, for example. 'LED lights in an office building could send a signal to a sensor on your phone warning you to leave the building,' says Manganiello.

Patrizio wants to design solar cells that not only convert light into energy but are also able to send and receive information.

Manganiello explains that he has thousands of ideas for experiments to bring these futuristic scenarios closer. 'Unfortunately, at any given moment we can only work on a tiny percentage of these, which is what I find most frustrating about my work.' He estimates that it will take about 10 to 15 years before new buildings will be able to communicate with each other through solar cells built in to their walls, however the first applications should start to appear in the coming decade.

Manganiello is impatient to get moving. 'Energy is playing an increasingly important role in our lives. Our biggest fear today is that our battery will run out,' he says. The graphs that made such an impression on him as a student twenty years ago have shot up even further. 'I want to believe that we can solve this, but when I see how societies, governments and the industry are responding to these issues, I sometimes lose heart.' He sighs deeply when asked to provide an example of such a response. 'The main problem is the resounding lack of a response, and the low priority given to sustainability.'

In time, all the buildings in a city will be able to communicate with each other and warn each other in the event of a fire, storm or flood, for example.

Despite the severity of the problem, optimism and fascination still prevail in the interview with Manganiello. He concludes by sharing his favourite scenario for a sustainable future that the Photovoltaics group hopes to achieve. He describes two cars, covered with solar cells which provide a large part of their energy. A deer suddenly jumps out in front of the foremost car. Even before it has applied the brakes, its rear lights rapidly transmit a signal to the solar cells on the vehicle behind: 'Warning, I'm about to brake!' At the same time, the urban traffic control centre

sends signals via street lamps to solar cells on the roofs of passing cars to control traffic and prevent congestion and air pollution hotspots.

‘I think this is the best example, because safety is the main bottleneck in the development of self-driving cars, while this technology can make life easier and more sustainable. I think the Photovoltaics research group can provide an important boost to the development of self-driving cars, and it is a privilege to be able to contribute to this.’

1. Patrizio Manganiello is an engineer who studied renewable energy sources.
2. The two graphs shown in Manganiello's lecture displayed a declining trend in global energy consumption.
3. Photovoltaics is a new research field where solar cells and electronics come together.
4. The preliminary goal of Manganiello's research is to develop solar cells that can only generate electricity.
5. Manganiello imagines solar panels that can communicate information about traffic safety and routes.
6. Manganiello believes that ideas of integration of solar cells in urban environment have various creative applications.
7. Manganiello believes that buildings in the future will not be able to communicate with each other using solar technology.
8. Manganiello estimates it will take about 10 to 15 years for buildings to start communicating through solar cells.
9. In time, all the buildings in a city will be able to communicate with each other in emergency cases.
10. The main obstacle in the development of self-driving vehicles is that a battery runs out very quickly.

Task 2. Speaking. Give full answers to the following questions.

1. What event triggered Patrizio Manganiello's interest in renewable energy?
2. How did the graphs illustrate the correlation between energy consumption and global temperature?
3. What is the primary focus of Manganiello's research in Photovoltaics?
4. What potential applications does Manganiello suggest for solar cells in urban environments?
5. How could solar cells integrated into buildings enhance communication between them?
6. What example does Manganiello provide to illustrate how buildings could share information about energy needs?
7. What type of solar cells does Manganiello want to design?
8. How long does Manganiello estimate it will take before buildings can communicate through solar cells?
9. What is Manganiello's perspective on society's response to sustainability challenges?
10. How does Manganiello describe the role of energy in people's lives? What is our biggest fear from his point of view?
11. What optimistic scenario does Manganiello share regarding the future of self-driving cars and solar technology?
12. In what way does Manganiello believe his research group can contribute to the development of self-driving cars?
13. What does Manganiello identify as a bottleneck in self-driving car technology?

Task 3. Speaking. In pairs or small groups come up with at least one example of smart alternatives for sustainable energy production. Be ready to present.

Задание 4. (Чтение + Письмо (Reading+Writing))

Task 1. Reading. Read the text. Match its structural parts with the titles.

MECHANISM DESCRIPTION OF A STANDARD FLAT-PLATE SOLAR COLLECTOR

- a. Definition: What is it, and what is its main purpose?
- b. Overview: Describe the mechanism's overall appearance ("big picture").
- c. Components and explanations: Describe the main component parts in labeled sections; consider the order of information carefully here. Create a logical connection between each component described.
- d. Visuals
- e. Conclusion

3) _____

A flat-plate solar collector is an energy gathering device that absorbs sunlight and converts it into heat. Depending on a site's geographical location, a flat-plate collection system can provide between 30 and 80 percent of a home's hot water and space heating.

1) _____

A standard collection unit is rectangular, ten feet long by four feet wide by four inches high. The collector operates on a heat-transfer principle: the sun's rays strike an absorber plate, which transfers its heat to fluid circulating through adjacent tubes.

2) _____

Five main parts make up the flat-plate collector: enclosure, glazing (and frame), absorber plate, flow tubes holding the transfer fluid, and insulation (Figure 1).

ENCLOSURE. The enclosure is a rectangular metal or polymer tray that serves as a container for the remaining (four) main parts of the collector. It is mounted on a home's roof at a precise angle for absorbing solar rays.

GLAZING (AND FRAME). The glazing consists of one or more layers of transparent plastic or glass that allow the sun's rays to shine on the absorber plate. This part also provides a cover for the enclosure and serves as insulation by trapping the heat that has been absorbed. An insulated frame secures the glazing sheet to the enclosure.

ABSORBER PLATE. The metallic absorber plate, coated in black for maximum efficiency, absorbs solar radiation and converts it into heat energy. This plate is the heat source for the transfer fluid in the adjacent tubing.

FLOW TUBES AND TRANSFER FLUID. The captured solar heat is removed from the absorber by means of a transfer medium; generally, treated water. The transfer medium is heated as it passes through flow tubes attached to the absorbing plate and then transported to points of use in the home or to storage, depending on energy demand.

INSULATION. Polyurethane insulation surrounds the bottom, edges, and sides of the collector, to retain absorbed energy and limit heat loss.

In one operating cycle, solar rays penetrate the glazing to heat the absorber plate (Figure 2). Insulation helps retain the heat. The absorber plate, in turn, heats a liquid circulating through attached flow tubes, which is then pumped to a heat exchanger. The heat exchanger transfers the heat to the water in a storage tank, pumped to various uses in the home. The cooled liquid is then pumped back to the collector to be re-heated.

2)

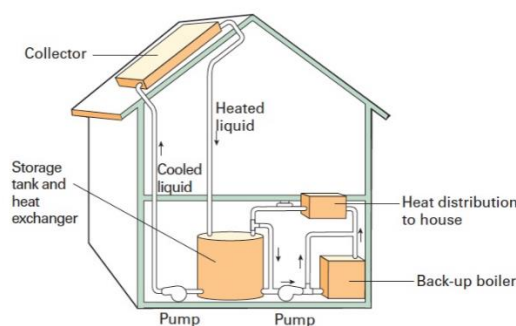
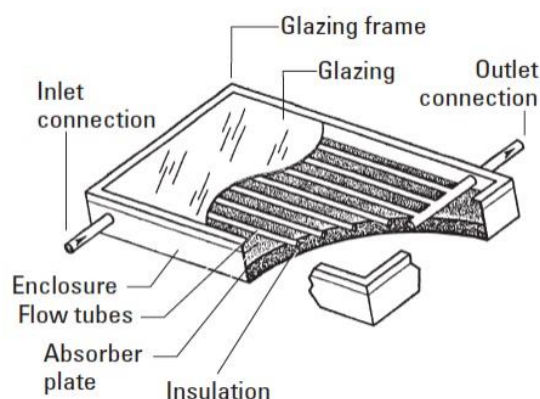


FIGURE 2 How Solar Energy Is Captured and Distributed Throughout a Home
Source: Heat Your Water with the Sun. U.S. Department of Energy, 2003.



3) The solar energy annually striking the roof of a typical house is ten times greater than its annual heat demand. Properly designed and installed, a flat-plate solar system can provide a large percentage of a house's space heating and domestic hot water.

Task 2. Writing. Select the type of 3D printing technology below. Write 250-300 words mechanism description. Draw a label diagram on a separate piece of paper.

- Extrusion-based 3D bioprinting
- Fused deposition modelling (FDM)
- Resin-based 3D Printing

Задание 5. (Творческое задание Говорение/Письмо)

Speaking. Divide into groups of 2. Study the card provided by the teacher. Brainstorm analogies, then present them to the class.

Writing. Use a digital tool like Miro or any other platform to create a visual poster that enhances your explanation with diagrams, illustrations, or examples.

Example Scenarios:

1. Technical Concept: *Cloud Computing*

Audience: A farmer

Example Analogy:

"Cloud computing is like renting a tractor. Instead of buying one (owning servers), you pay to use it when needed, saving money and space."

Activity Prompt:

"Explain cloud storage to a farmer using farming tools or weather as references."

2. Technical Concept: *Machine Learning*

Audience: A music teacher

Example Analogy:

"Machine learning is like teaching a student to play piano. The more songs they practice (data), the better they play (predict outcomes)."

Activity Prompt: "Compare machine learning to learning a musical instrument."

Задание 6. (Лексико-грамматический тест)

Task 1 Fill in the gaps, using word from the Target Vocabulary list.

1. All products can be customized to suit your specific _____.
2. I was hitting a _____ in my personal work.
3. I've added some new _____ to my website.
4. The new leisure centre will be an _____ for local residents.
5. What was the exact _____ of the message?
6. People have always tried to create a _____ through stories and painting.
7. The company has a good reputation for _____ training.
8. She worked on the computer-generated (_____ for the movie.

Task 2. Open the brackets.

1. If the North Sea _____ (freeze) in winter, you _____ (can walk) from London to Oslo.
2. If you _____ (press) that button on the keyboard, you _____ (delete) all the data! Now it's lost!
3. If the factory _____ (shut) last year, over 100 people _____ (be) jobless now.
4. If you _____ (cool) metal, it _____ (contract).
5. Unless you _____ - (submit) your summary before the deadline, I _____ (mark) it.
6. If the Earth _____ (stop) spinning, one side _____ (be) in darkness always.
7. Unless you _____ (look) up this word in a dictionary, you can _____ (mispronounce) it.
8. If we _____ (be) serious about pollution, we _____ (spend) more money on research last year.

Task 3. Choose the correct conjunction.

1. **If/Unless** you don't work harder, you won't pass the exam.
2. **If/When** you wake up tomorrow, you will see snow.
3. **As soon/If** she likes that book, she will love this one!
4. **If/Unless** we find a taxi right now, we will miss the plane.
5. **When/In case** you get home, we'll watch a DVD.

3.3. Английский для предпринимательства и бизнеса (English for Business and Entrepreneurship)

Тема 1. Бизнес и предпринимательство

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста; дискуссия, беседа, обсуждение по заданной тематике.

Самостоятельная работа: чтение аутентичных журналов и газет; составление тематического словаря по пройденному материалу.

Домашнее задание: подготовить выступление с pitch-презентацией своей бизнес-идеи для потенциального инвестора.

Тема 2. Искусство управления изменениями

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста.

Обсуждение субъектов деловых отношений (предприниматели, потребители, работники по найму, государственные структуры)

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы, составление тематического словаря по пройденному материалу.

Домашнее задание: сообщение о конкуренции в бизнесе.

Тема 3. Корпоративная культура

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста, видео материала; дискуссия о роли корпоративной культуры в формировании целевого образа

компании как бренда; обсуждение типологии Г. Хофстеда; современных концепций формирования и функций корпоративной культуры.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: эссе-рассуждение о корпоративная культура как фактор эффективности инновационной деятельности компании.

Тема 4. Управление рисками. Риск-менеджмент

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста, видео материала; обсуждение основных принципов и практики выявления, оценки и снижения рисков в деловом контексте; дискуссия о роли управления рисками в принятии решений и бизнес-планировании; чтение и перевод аутентичных информационных материалов по темам.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы; составление тематического словаря по пройденному материалу.

Домашнее задание: творческое задание по заданной теме.

Тема 5. Финансы

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста, видео материала; обсуждение вопросов по тематике: денежные отношения между предпринимателями и другими участниками бизнеса; возможные способы финансирования новой бизнес идеи, современные методы инвестирования денежных средств и т.д.

Самостоятельная работа: чтение аутентичных журналов и газет по теме: The Economist (англоязычный еженедельный журнал о текущих финансовых, экономических, деловых новостях); Harvard Business Review (ежемесячный научно-популярный журнал, посвященный различным вопросам управления бизнесом); Financial Times (международная деловая газета, публикации, анализ из мира финансов и бизнеса); составление тематического словаря по пройденному материалу.

Домашнее задание: подготовить сообщение и схематично описать финансовую модель компании.

Тема 6. Маркетинговая стратегия

Аудиторная работа: беседа по содержанию прочитанного или прослушанного текста, обсуждение сущности стратегии и ее роль в достижении успеха, характеристики стратегических решений. Прослушивание аудио материалов и дискуссия на тему маркетинговая стратегия. Работа с текстом о роли и значения стратегического анализа, подготовка кратких сообщений.

Самостоятельная работа: работа с информационными ресурсами, изучение материалов практических занятий, чтение основной и рекомендованной литературы.

Домашнее задание: сформулировать различные функции стратегического менеджмента в фирме; составить письменный анализ конкретных стратегий на примерах российских и иностранных компаний.

5 семестр (осенний)

1. Чтение аутентичного текста объемом не менее 2 500 знаков; выполнение заданий на понимание содержания текста, а также на отработку тематического словаря;
2. Монологическое высказывание по одной из предложенных тем, сформулированных на основе содержания прочитанного текста.

Примеры заданий

Read the article about the internet company Groupon and do the exercises below.

Groupon culture in the UK

American online voucher giant Groupon is making moves to attract British bargain hunters.

1. It was a few days after Christmas 2010. At an obscure dry cleaners' in London, a large group of trendy young people turned up with their laundry, overwhelming the staff of the Drycentre on Southgate Road.

2. What was it that had caused this sudden demand for dry cleaning services? It was a special offer selling £30 worth of Drycentre services for just £10, an offer advertised to local residents via an email from an internet company called Groupon.

3. In the US, Groupon was already a sensation and it was taking the UK by storm, too. More and more people were signing on to receive its daily diet of special offers from local businesses. In February 2011, it covered 500 cities in 35 countries, boasting 50 million users who had signed up to get emails. Since the company was founded in 2009, they had saved over \$1.2bn (740m) in total. Despite its low profile, Groupon already boasts five million users in the United Kingdom. According to Forbes magazine, it was the fastest-growing company in the history of the world, in terms of the revenues it is generating. In 2010, Google offered to buy the company for \$6bn, but its founders were unimpressed and turned the offer down.

4. Groupon offers a "win-win-win": customers get more than half off on special deals at their local restaurants, shops or other businesses; the local merchants get many more new customers than newspaper advertising could ever generate; and Groupon takes a cut of typically half of whatever money changes hands. Essentially, Groupon has made it trendy to seek out a bargain.

5. Even before the emergence of Groupon in the United Kingdom, younger bargain hunters in Britain were already using websites such as vouchercodes.co.uk to seek out bargains on the high street or on the internet. These sites acted as shop windows for goods or services on offer from providers, who pay the voucher website a fee for each person who downloads their money-saving code.

6. Although supermarket loyalty cards remained the saving scheme of choice for 20 million bargain hunters in the UK, Groupon radically changed the discount marketplace. But before the US giant entered Britain, one pizza firm, Pizza Express, had already boosted its revenues with the inventive use of vouchers.

7. By sending out some forwardable two-for-one vouchers that were downloadable from the firm's website, they attracted 4.5 million customers keen to take them up on the offer. Other restaurants were quick to follow suit.

8. Groupon's model is different. Instead, it aggregates offers on its site and chooses a single one to be the coupon of the day. This coupon must then be downloaded by a certain number of users on a particular day to trigger the discount. If not enough people download the voucher, the offer remains inactive.

9. The result of this is that markdowns have become ever larger, as companies can precisely calculate what revenues certain reductions will bring in.

Source: The Independent

[Groupon: coupon culture in the UK | The Independent | The Independent](#)

Task 1. Complete the definitions below with the base forms of words or phrases from the text.

1. (v, para. 1): be too excessive for somebody

2. (idiom, para. 3): rapidly become popular somewhere
3. (n, para. 4): a portion of the profits
4. (n, para. 5): somebody who looks for things that can be bought for special low prices
5. (v, para. 6): increase
6. (phr. v, para. 7): accept (an offer or invitation) from somebody
7. (idiom, para. 7): do what somebody else is doing
8. (v, para. 8): collect together
9. (v, para. 8): cause something to happen
10. (n, para. 9): a reduction in price

Task 2. Read the article about the internet company Groupon and find the following information.

1. The number of countries and cities covered by Groupon in February 2011:
2. The number of Groupon users in February 2011:
3. The number of Groupon users in the UK in February 2011:
4. The amount of money that Google offered to buy Groupon:
5. The typical commission that Groupon takes on a sale:
6. The most popular type of saving scheme used in the UK before Groupon:
7. The number of customers reached by Pizza Express' online voucher scheme:

Task 3. Answer the questions below.

1. Why did Groupon's founders turn down Google's offer to buy the company?
2. How does Groupon offer a "win-win-win"?
3. How did bargain hunters in the UK seek out bargains on the internet before Groupon?
4. How did Pizza Express' voucher system work?
5. How is Groupon's model different?
6. How does Groupon's model make it possible to offer very large discounts?

Task 4. Choose one of the situations and prepare a 2- to 3- minute report.

Situation 1: A Local Restaurant's Experience with Groupon

Scenario: A newly opened Italian restaurant decides to partner with Groupon to attract customers. They offer a "buy one, get one free" deal on their signature pasta dishes. Initially, the promotion brings in a flood of new customers, leading to long wait times and overwhelmed staff. However, after the promotion ends, the restaurant struggles to retain these customers, as many were only interested in the discount.

Discussion Points:

- Did the Groupon deal help or hurt the restaurant's long-term viability?
- How can the restaurant convert one-time discount seekers into loyal customers?

Situation 2: Consumer Behavior Analysis

Scenario: A group of friends regularly uses Groupon for dining out. They find that they often choose restaurants based solely on available discounts rather than personal preferences or recommendations. Over time, they realize that they have not visited their favorite local spots because they weren't offering deals.

Discussion Points:

- What does this say about consumer behavior in relation to discounts?
- Are consumers losing sight of quality and experience in favor of savings?

Situation 3: A Small Business Owner's Dilemma

Scenario: A small spa owner is approached by Groupon to run a promotional campaign. While excited about the potential influx of customers, she is concerned about the financial implications

of giving away services at such a steep discount. She worries that it might set a precedent for future pricing.

Discussion Points:

- Should she proceed with the Groupon deal despite her concerns?
- What strategies can she implement to ensure profitability while attracting new clients?

Situation 4: The Ethical Debate

Scenario: A consumer advocacy group raises concerns about Groupon's business model, arguing that it encourages businesses to offer unsustainable discounts that could lead to financial instability. They propose stricter regulations on discount platforms to protect small businesses.

Discussion Points:

- What ethical considerations should be taken into account regarding discount platforms?
- Should there be regulations on how much businesses can discount their services through platforms like Groupon?

Situation 5: The Impact of Digital Marketing

Scenario: An established retail store has relied on traditional advertising methods for years but is now facing declining sales. After observing the success of Groupon and similar platforms, they decide to launch their own digital coupon campaign.

Discussion Points:

- What challenges might the store face in transitioning from traditional marketing to digital?
- How can they effectively engage with a new audience while maintaining their brand identity?

6 семестр (весенний)

1. чтение аутентичного текста объемом не менее 2 500 знаков; выполнение заданий на понимание содержания текста, а также на отработку тематического словаря;
2. обсуждение в группе в формате дебатов этических аспектов поднимаемых в тексте проблем;
3. написание Opinion Essay по теме, смежной с темой прочитанного текста. Объем эссе – 250-300 слов.

Пример 1:

Reading for Speaking

Freud, finance and folly

Human intuition is a bad guide to handling risk

<https://www.economist.com/special-report/2004/01/24/freud-finance-and-folly>

PEOPLE make barmy decisions about the future. The evidence is all around, from their investments in the stockmarkets to the way they run their businesses. In fact, people are consistently bad at dealing with uncertainty, underestimating some kinds of risk and overestimating others. Surely there must be a better way than using intuition?

A Daniel Kahneman, now a professor at Princeton, noticed as a young research psychologist in the 1960s that the logic of decision science was hard for people to accept. That launched him on a career to show just how irrationally people behave in practice. When Mr Kahneman and his colleagues first started work, the idea of applying psychological insights to economics and business decisions was considered quirky. But in the past decade the fields of behavioural finance and behavioural economics have blossomed, and

in 2002 Mr Kahneman shared a Nobel prize in economics for his work. Today he is in demand by organisations such as McKinsey and PartnerRe, and by Wall Street traders. But, he says, there are plenty of others that still show little interest in understanding the roots of their poor decisions.

B Surveys have shown that people's forecasts of future stockmarket movements are far more optimistic than past long-term returns would justify. The same goes for their hopes of ever-rising prices for their homes or doing well in games of chance. Such optimism can be useful for managers or football players, and sometimes turns into a self-fulfilling prophecy. But most of the time it results in wasted effort and dashed hopes. Mr Kahneman's work points to three types of over-confidence. First, people tend to exaggerate their own skill and prowess; in polls, far fewer than half the respondents admit to having below-average skills in, say, love-making or driving. Second, they overestimate the amount of control they have over the future, forgetting about luck and chalking up success solely to skill. And third, in competitive pursuits such as betting on shares, they forget that they have to judge their skills against those of the competition.

C. First encounters tend to be decisive not only in judging the character of a new acquaintance but also in negotiations over money. Once a figure has been mentioned, it takes a strange hold over the human mind. The asking price quoted in a house sale, for example, tends to become accepted by all parties as the “anchor” around which negotiations take place, according to one study of property brokers. Much the same goes for salary negotiations or mergers and acquisitions. If nobody has much information to go on, a figure can provide comfort—even though it may lead to a terrible mistake.

D No one likes to abandon a cherished belief, and the earlier a decision has been taken, the harder it is to give up. In one classic experiment, two groups of students were shown slides of an object, say a fire hydrant or a pair of spectacles. The slides started out of focus and were gradually made clearer until the students could identify the object. Those who started with a very blurry image tried to decide early and then found it difficult to identify it correctly until quite late in the process, whereas those who started less out of focus kept a more open mind and cottoned on more quickly.

The same sort of thing happens in boardrooms or in politics. Drug companies must decide early to cancel a failing research project to avoid wasting money, but find it difficult to admit they have made a mistake. Bosses who have hired unproductive employees are reluctant to fire them. Mr Kahneman cites the example of Israel's failure to spot growing threats in the lead-up to its 1973 war with its Arab neighbours. Part of the explanation was that the same people who had been watching the change in political climate had to decide on Israel's response. Similar problems have arisen in recent counter-terrorism work in America. In both cases, analysts may have become wedded early to a single explanation that coloured their perception. A fresh eye always helps.

E People put a lot of emphasis on things they have seen and experienced themselves, which may not be the best guide to decision-making. For example, many companies took action to guard against the risk of terrorist attack only after September 11th, even though it was present long before then. Or somebody may buy an overvalued share because a relative has made thousands on it, only to get his fingers burned.

In finance, too much emphasis on information close at hand helps to explain the so-called “home bias”, a tendency by most investors to invest only within the country they live in. Even though they know that diversification is good for their portfolio, a large majority of both Americans and Europeans invest far too heavily in the shares of their home countries. They would be much better off spreading their risks more widely.

F Fear of failure is a strong human characteristic, which may be why people are much more concerned about losses than about gains. Consider the following bet: with the flip of a coin, you could win \$1,500 if the coin turns up heads, or lose \$1,000 on the tails. Now describe it in another way: with heads, you keep all the money you had before the bet, plus \$1,500; with tails, you also keep everything, except \$1,000. The two bets are identical, and each one, on average, will make you richer by \$250 (although that average will be little consolation to the punter who has just lost \$1,000). Even so, people will usually prefer the second bet.

G More information is helpful in making any decision but, says Mr Kahneman, people spend proportionally too much time on small decisions and not enough on big ones. They need to adjust the balance. During the boom years, some companies put as much effort into planning their Christmas party as into considering strategic mergers.

H Mr Kahneman reckons that some types of businesses are much better than others at dealing with risk. Pharmaceutical companies, which are accustomed to many failures and a few big successes in their drug-discovery programmes, are fairly rational about their risk-taking. But banks, he says, have a long way to go. They may take big risks on a few huge loans, but are extremely cautious about their much more numerous loans to small businesses, many of which may be less risky than the big ones. But at least when businesses try to assess their risks, they have to worry only about making money. Governments, on the other hand, face a whole range of sometimes conflicting political pressures. This makes them even more likely to take irrational decisions.

Task 1 Match paragraphs A-H with headings 1- 8

A	1.Counterproductive regret.
B	2.Getting too close.
C	3.Misplaced priorities.
D	4.Over-optimism.
E	5.Stubbornness.
F	6.The anchor effect
G	7.Think like a machine
H	8.Winning and losing.

Task 2 Decide if the statements are TRUE or FALSE

- 1.Companies tend to abandon projects on which they are losing money.
- 2.It is irrational to invest only in your own country.
- 3.People are more concerned about losses than gains.
- 4.“Home bias” is a tendency by most investors to invest only within the country they live in.
- 5.Pharmaceutical companies are not rational about their risk-taking.

Task 3 Match the words from the article with their meaning.

1>Returns	a)A range of investments
2.Traders	b)To estimate
3.Diversification	c)People who buy and sell stocks and shares
4.Portfolio	d)Varying investments
5.Losses	e)Money earned on investments
6.To assess	f)Money lost on investments

Task 4 Look at the following extracts from the article:

- ... somebody may buy an **overvalued** share...
- ... they **overestimate** the amount of control...
- ... work points to three types of **overconfidence**.

Prefix – *over* – means too much or more than enough

Work with some other words formed with this prefix. Think of the word that would better suit each sentence. You may change the form of the word if necessary.

Overburdened Overconfident Overdo Overflow Overindulge Overpay Overproduction Override Overstate Overturn Overwork	1. History has shown that investors _____ for growth. 2. Many people _____ in unhealthy foods and fail to get regular exercise. 3. We sometimes say that a single drop of water can make a glass _____. 4. _____ people often make mistakes, even as they're certain they know what they are doing. 5. _____ occurs when manufacturing schedules are misaligned with demand. 6. Moreover, hospital structures are _____ with the care and treatment of patients. 7. You can _____ the ordering method by using the following procedure. 8. You shouldn't _____ the weakness in the present path of international growth. 9. The States parties should also have a residual power, in exceptional circumstances, to make or _____ management decisions. 10. The main thing is not to _____ with the public demonstration of our support. 11. Experts recommend not to _____ and not to engage in work associated with increased concentration of attention during the application of these tablets.
--	--

Debate – Is Ethical Investing Worth It?

One group argues in favor of ethical investing (e.g., supporting green energy, avoiding tobacco companies), and the other argues that profit should be the only priority.

You have 10 minutes to get prepared with your arguments and 15 minutes to debate.

Follow-up Discussion:

1. Would you personally prioritize ethics over profit when investing? Why or why not?
2. How can individuals balance financial success with social responsibility?

Group Discussion – Why Do We Spend Money?

1. Emotional Comfort

Spending to cope with negative emotions like stress, sadness, or loneliness (e.g., "retail therapy").

Buying things to feel a temporary sense of happiness or satisfaction.

2. Social Status and Peer Pressure

Purchasing luxury items or brands to signal wealth or success.

Spending to fit in with a social group or to avoid feeling left out.

3. Fear of Missing Out (FOMO)

Buying something because others are doing it or because it seems like a limited-time opportunity.

Feeling anxious about missing out on trends, sales, or experiences.

4. Instant Gratification

Preferring immediate pleasure over long-term financial goals (e.g., buying a new gadget instead of saving for retirement).

Difficulty delaying gratification, leading to impulsive purchases.

5. Childhood Influences

Replicating spending habits observed in parents or caregivers during childhood.

Spending to fulfill unmet childhood desires or to compensate for past deprivation.

6. Self-Identity and Expression

Buying items that reflect one's personality, values, or aspirations (e.g., eco-friendly products, designer clothes).

Using purchases to create or reinforce a desired self-image.

7. Cognitive Biases

Anchoring: Relying too heavily on the first piece of information (e.g., a discount price) when making decisions.

Confirmation Bias: Seeking out information that justifies a desired purchase while ignoring reasons not to buy.

Sunk Cost Fallacy: Continuing to spend money on something because of the amount already invested, even if it's no longer beneficial.

8. Escapism

Spending to distract oneself from problems or responsibilities.

Using shopping as a way to avoid dealing with difficult emotions or situations.

9. Habit and Routine

Spending out of habit, even when it's unnecessary (e.g., daily coffee runs, subscription services).

Associating certain activities or emotions with spending (e.g., celebrating with a shopping spree).

10. Marketing and Advertising Influence

Falling for persuasive advertising tactics that create a sense of need or urgency.

Being influenced by social media influencers or targeted ads.

11. Reward and Reinforcement

Spending as a way to reward oneself for achievements or hard work.

Feeling a sense of accomplishment or pleasure after making a purchase.

12. Nostalgia

Buying items that evoke positive memories or a sense of nostalgia (e.g., vintage clothing, collectibles).

Spending on experiences or products that remind one of happier times.

13. Perceived Scarcity

Purchasing items because they are marketed as rare, limited edition, or going out of stock.

Feeling a sense of urgency to buy before it's too late.

14. Social Comparison

Spending to keep up with others or to avoid feeling inferior.

Comparing oneself to peers or celebrities and feeling pressured to match their lifestyle.

15. Emotional Attachment

Buying items because of an emotional connection (e.g., supporting a small business, buying gifts for loved ones).

Spending on things that feel meaningful or sentimental.

16. Overconfidence and Optimism Bias

Believing that future financial situations will be better, leading to overspending now.

Underestimating the risks of debt or financial instability.

17. Boredom

Spending to fill time or alleviate boredom.

Engaging in "window shopping" that turns into actual purchases.

18. Cultural and Societal Norms

Spending in ways that align with cultural expectations (e.g., lavish weddings, expensive holidays).

Feeling pressured to conform to societal standards of success or happiness.

19. Guilt and Obligation

Spending out of guilt (e.g., donating to charity after overspending).

Buying gifts or items out of a sense of obligation to others.

20. Fantasy and Aspiration

Purchasing items that represent an idealized version of oneself or one's life (e.g., gym memberships, luxury cars).

Spending on things that symbolize future goals or dreams.

1. Which of these reasons do they relate to the most?
2. How might Freud explain our spending habits?
3. What strategies can people use to avoid impulsive spending?

Пример 2:

Reading for Writing

Read the text and write an opinion essay using guiding questions.

Sam Altman-backed Retro Biosciences to raise \$1bn for project to extend human life

Retro Biosciences is raising a \$1bn round to fund the artificial intelligence-powered biotech's mission to increase human lifespan by a decade, starting by getting its first drug into trials this year.

OpenAI chief executive Sam Altman, who provided the initial \$180mn to seed the start-up, will put in more money in the series A. The company is in talks with family offices, venture capitalists and sovereign wealth funds, as well as a US "hyperscaler" data centre to provide computing power to run the AI models it uses to create and test its treatments.

In partnership with OpenAI, the start-up has built a bespoke AI model that designs proteins to temporarily turn regular cells into stem cells, which it says can reverse their ageing process.

The San Francisco-based biotech will use the money to fund clinical trials for three drugs, including a potential treatment for Alzheimer's disease, which will be tested in an early stage study in Australia this year. It is also working on drugs for rejuvenating blood and brain cells.

Joe Betts-LaCroix, Retro Biosciences' chief executive and a close confidant of Altman who has previously sold companies to Google and biotech Recursion, said his goal is to "reduce human misery".

"Right now if someone gets Alzheimer's, it doesn't matter what your resources are. You know, if you're like Joe Biden, or Elon [Musk], or whoever, you can write as big a cheque as you want to anybody and nobody knows how to cure it," he told the Financial Times.

Silicon Valley leaders including the Google co-founders and Amazon chief executive Jeff Bezos have invested in companies aiming to extend human life, or healthspan: the number of years people can live healthy lives.

Isomorphic Labs, the drug discovery start-up owned by Google, will have an AI-designed drug in trials by the end of this year, its founder Sir Demis Hassabis said this week.

Bezos-backed Altos had the largest ever biotech fundraising, raising \$3bn in 2022. Betts-LaCroix said Altos has "brilliant minds" and "admirable, longer range research goals" but he said he and Altman both come from the tech accelerator Y Combinator and so they have a "very fast-paced, action-oriented, target-centric mindset".

Sandro Salsano, an Italian financier who runs a family office based in Panama, is leading the fundraising and has joined Retro Biosciences's board.

The company plans to move fast, hoping to dramatically cut the average of 10 to 15 years that it takes to discover and develop a drug. "The line we're drawing in the sand is, damn it, we're going to have our first drug out in the 2020s," he said.

Retro Biosciences believes its partnership with OpenAI will accelerate the process. It is working with the AI company on its language model based on biological data, which can, for example, suggest ways to improve the reprogramming of cells, as a way of reducing the impact of ageing. Working with the \$157bn AI start-up also has an "ulterior motive, bringing biotech into

OpenAI . . . you know that you're making progress towards AGI [artificial general intelligence] when your models are able to make discoveries that humans couldn't on their own", said Betts-LaCroix.

The biotech's first drug candidate to be tested in a trial is a pill that restores a cell's internal recycling process, the failure of which has been linked to diseases such as Alzheimer's — the most common form of dementia with more than 55mn sufferers worldwide. But drug developers have struggled to turn back the clock on the disease, with existing treatments only slowing patients' decline.

The next two drugs will be cell therapies, one of which will also target Alzheimer's by replacing the brain cells known as microglia, in a plan that Betts-LaCroix said is a "bit more sci-fi but extremely powerful". The third is a treatment to replace stem cells in the blood with younger ones.

"If you're 85 years old and you undergo this therapy, you can replace your blood stem cells with ones that are zero age, and then those ripple out and produce all your blood," he said. "So basically, it's like having 80 per cent of all your cells become zero age."

Task 1: The Role of Seed Money in Biotech Startups

Prompt:

"Sam Altman provided \$180 million in seed funding to launch Retro Biosciences. In your opinion, how critical is seed money for the success of biotech startups? Discuss the advantages and challenges of relying on initial investments from high-profile individuals like Altman, using examples from the text to support your argument»

Guiding questions:

1. What is seed money, and why is it important for startups like Retro Biosciences?
2. How did Sam Altman's \$180 million seed funding impact Retro Biosciences' early development?
3. What are the advantages of having high-profile individuals provide seed funding?
4. Are there any potential downsides to relying on seed money from wealthy investors?
5. How does seed funding compare to other forms of financing, such as venture capital or government grants?

Task 2: The Ethics of Billion-Dollar Fundraising in Biotech

Prompt:

"Retro Biosciences is raising \$1 billion to fund its life-extension projects. Do you believe such large sums of money should be invested in ambitious biotech ventures, or should these funds be directed toward more immediate global issues like poverty or climate change? Justify your opinion with examples from the text and your own perspective»

Guiding questions:

1. Why is Retro Biosciences raising \$1 billion, and what will the funds be used for?
2. What are the potential benefits of investing such large sums in life-extension projects?
3. Are there ethical concerns about prioritizing life-extension research over other global issues?
4. How might this funding impact society, healthcare systems, and economies?
5. Do you believe the potential rewards justify the risks and costs of such investments?

4. Перечень типовых контрольных заданий, используемых для оценки знаний, умений, навыков при промежуточной аттестации

Промежуточная аттестация по дисциплине «Английский язык для профессиональных целей» проводится в письменной и устной форме, в конце каждого семестра: в 1, 3, 5 – в форме зачета, 2, 4, 6 – в форме дифференцированного зачета.

Модуль 1. Английский язык для общих целей (General English)

1 семестр (осенний) – зачет

Примеры заданий

Уровень L1

Устная часть – развернутый ответ на три вопроса по одной из тем семестра

Письменная часть – лексико- грамматический тест и контрольное задание на чтение.

- 1.Задание на аудирование по теме “Ролевая модель”
- 2.Задание на говорение: рассказ на тему “Историческое наследие”
- 3.Письменная работа: написание электронного письма на тему “Вызовы университетской жизни”
- 4.Лексико- грамматический тест и контрольное задание по чтению

I.Listen to Amy about her teacher at school and say why she is a role model for Amy?

Script:

Amy: The teacher I admire is Mrs. Donovan. She is young - about 30 years old. She teaches German at my university and she's very kind and patient with her students. She always explains things clearly and helps us when we don't understand something.

Mrs. Donovan is also very organized. She always has a plan for our lessons and makes sure that we have everything we need to learn. She gives us homework, but it's never too much or too difficult.

What I like most about Mrs. Donovan is that she makes learning fun. She uses three or four games and activities each class to help us remember new words and grammar rules. She also helps us to speak in German even if we make mistakes.

I think Mrs. Donovan is a great teacher because she cares about her students. She's always there to listen and give advice.

1. Say if the statements about Mrs. Donovan are true or false.

1. The teacher's name is Mrs. Donovan.
2. Mrs. Donovan is around 50 years old.
3. Mrs. Donovan teaches Math at the university. -
4. The students find Mrs. Donovan kind and patient.
5. Mrs. Donovan doesn't explain things clearly.
6. Mrs. Donovan is disorganized.
7. The homework is usually difficult.
8. Mrs. Donovan makes learning not interesting.
9. She doesn't use any games or activities in class.
10. Mrs. Donovan doesn't care about her students.

2. Listen to the first part of the audio again and complete the gaps with correct words.

Script:

Amy: The teacher I admire is Mrs. Donovan. She is young about 30 years old. She teaches German at my university and she's very kind and patient with her students. She always explains things clearly and helps us when we don't understand something.

Amy admires Mrs. Donovan. She is a _____. She is _____ about _____ years old. She is _____ and patient with her students. She always explains things _____ and _____ us.

3. Match the words from the audio to their meanings.

empathetic, piercings and tattoos, interested, appearance, stereotype, character, generous

- a. to think positively of someone or something
- b. look after somebody (присматривать)
- c. not easy
- d. an error or incorrect action
- e. to make something clear or easy to understand.

4. Describe Mrs Donovan, her character traits. Do you know other people with character like this?

II. Storytelling

You have a list of questions about historical heritage, you should answer the questions and prepare a small story about one historical tradition/ site/ place/landmark. Use the plan of the talk. Do the task orally, you can make notes.

- 1. Why is historical heritage important?
- 2. What famous historical building or landmark in your country do you know?
- 3. Did you visit it?
- 4. Do you enjoy learning about history? Why or why not? Was it interesting for you at school?
- 5. Are there any historical figures that you admire? Who are they?
- 6. What is the oldest historical object you know?
- 7. Are there any historical traditions or customs that are in your country today?
- 8. Are there any historical sites or landmarks that you want to visit in the future?
- 9. Talk about one historical tradition or site/landmark in detail.

III. Writing an e-mail.

Write an e-mail to your friend about challenges of university life.

IV. Unit test

1. Complete the sentences with the correct form of the words: *broaden, urban, skills, attract, wildlife, event, border*

- 1. The _____ between the two countries was beautiful.
- 2. Traveling can _____ your horizons and give you new opportunities.
- 3. This sport _____ was a success, it attracted thousands of people.
- 4. The _____ atmosphere in the middle of the city has a unique view.
- 5. Learning new _____ is essential for personal and professional growth.
- 6. The beautiful scenery _____ tourists from around the world.
- 7. Protecting natural habitats is important for the life of _____ species.

2. Match the words with their definitions:

- 1. Limitless**
- 2. Waterfall**
- 3. Discovery**
- 4. Advice**

- a. A large amount of water falling over a cliff or rock formation
- b. The act of finding or uncovering something new or unknown
- c. Endless or without boundaries
- d. Recommendations or suggestions given to someone about what they should do in a particular situation

3. Complete the sentences with the appropriate form of "there is", "there are", "there was", or "there were"

1. At the top of the mountain, _____ breathtaking views of the surrounding countryside.
2. In this city, _____ a famous attraction that tourists flock to see.
3. Last week, _____ many interesting inventions at the technology fair (ярмарка).
4. When I went camping, _____ only a few wild animals in the area.
5. While exploring the ruins, _____ a hidden treasure (сокровище) under the ground.

4. Categorize the following nouns as countable or uncountable:

1. Water
2. Apple
3. Milk
4. Table
5. Paper
6. Knowledge
7. Book
8. Happiness
9. Money
10. Time

Write "C" if the noun is countable and "U" if the noun is uncountable.

5. Choose the correct verb form Present simple or Present continuous

- a. A lot of people speak/ are speaking Spanish in the USA.
- b. He is doing/ does the experiment now.
- c. It often is raining / rains in autumn.
- d. I am sorry, I am not understanding / don' t understand what you are saying.
- e. She walks / is walking around the park at weekends.
- f. Kate likes / is liking popmusic but she is listening / listens to folk songs now.
- g. Are you knowing / do you know the people in this room?
- h. Students are taking / take part in sport activities regularly.

6. Use comparative or superlative form of the adjectives.

- a. My brother is (tall) than me.
- b. What is (large) continent?
- c. Mr Davidson is (friendly) person in our office.
- d. Who is (good) footballer in your team?
- e. It is much (cold) today than it was yesterday.

- f. In our country Hockey is as (popular) as football.
- g. Do you think that St Petersburg is (beautiful) city in our country?
- h. Which city is (old) Moscow or Kazan?

7. Put the verbs in the correct form of Past Simple.

- a. I (go) to the dentist four times last year.
- b. How old (be) you when you (can) swim?
- c. After he (leave) school he (work) in a café and a year later he (enter) the university.
- d. Who (be) the first president of the USA?
- e. ...you (go) to the party last Friday?
- f. We (not have) much time so we (take) a taxi to the airport.
- g. My father (enjoy) his years at University.
- h. At what age you (start) playing video games?

8. Read the text and say if the statements are true or false.

The Channel Tunnel.

Tunnel - тоннель

Navy – военный флот

To construct = to build

The idea to build the tunnel between Britain and the European continent is very old. At the beginning of the 19th century France was ruled by Napoleon. He occupied most European countries and was in war with Britain. Britain had a very good navy and it was impossible to attack it from the sea. So, in 1802 Napoleon decided to build a tunnel under the sea between France and England. French engineers designed a project of such a tunnel but the construction never started. The project was too difficult. In the middle of the 19th century France and Britain had good relations. At this time new projects of the tunnel appeared. Engineers explored the bottom of the sea. They wanted to understand where and how to build the tunnel. In 1930-ies France and Britain nearly started to construct it. But the British decided not to do it. They understood that Nazi Germany could attack Britain from the tunnel. Only in 1979 the two countries decided to start building the tunnel under the sea. The works began in 1987. The builders of the tunnel were moving in two directions – from France to England and from England to the continent. It was a very difficult and dangerous process. Several workers lost their lives during the construction. The British and French builders met in the middle of the tunnel in 1990. But it took four more years to finish the works. Now passengers can get from London to Paris by train. It takes only 2 hours and 15 minutes. The Channel Tunnel is in the list of seven modern wonders of the world.

- 1. It was difficult for Napoleon to attack Britain from the sea.
- 2. In 1802 the French began to build a tunnel between France and England.
- 3. The construction of the tunnel began in 1930-ies.
- 4. Nazi Germany could use the tunnel in a war with Britain.
- 5. The building of the tunnel began in 1979.
- 6. Nobody was killed during the construction.
- 7. Both British and French workers were building the tunnel.
- 8. The travel from London to Paris by train is about 2 hours long.

9. Read the text and complete the gaps with appropriate words.

Ancestors – предки

Colony - колония

Do you know (1) _____ British Columbia is? (2) Many people believe that it is in South America. But (3) are wrong. It is a province in Canada in the far West (4) the country, on the coast of the Pacific Ocean. Most Europeans (5) not understand how huge Canada is. The distance between the province of Nova Scotia in the East of the country and London is (6) than the way to Vancouver in British Columbia. Nova Scotia and Prince Edward Island are at the Atlantic coast of Canada. The **ancestors** of people who (7) in this part of Canada came from Britain. So, these provinces often look (8) England or Scotland. (9) interesting part of Canada is Quebec. Many years (10) it was a French colony. That is why people here speak French. In fact, all people in Canada must (11) two languages – English and French. Different people (12) in Canada: English, Scottish, French, Polish, Russian and so on. It is interesting that speakers of French from Quebec call all other Canadians ‘the English’.

1. A) who b) where c) why
2. A) many b) lot c) big
3. A) it b) it's c) they
4. A) at b) in c) of
5. A) does b) do c) didn't
6. A) short b) shortest c) shorter
7. A) living b) live c) lived
8. A) like b) as c) so
9. A) other b) such c) another
10. A) from b) away c) ago
11. A) to speak b) speak c) speaking
12. A) are living b) lived c) live

Уровень L2

Устная часть – монологическое высказывание по одной из тем, изученных в семестре, на основе предложенных вопросов.

- 1 What are the main qualities of introverts and extraverts?
- 2 What are the strengths and weaknesses of introverts and extraverts?
- 3 In your opinion, what personality traits are important for people to achieve better academic results?

Письменная часть – контрольная работа (лексико-грамматический тест и задания на чтение и аудирование).

TEST

- 1 Listen and underline the two key words in each sentence.
 - 1 I really like shopping for clothes on the internet.
 - 2 Fabio buys all his music online.
 - 3 The first thing to do is create an account.
 - 4 I only check my emails once a day.
 - 5 Sarah designs websites and she loves her job.

2. Listen to two friends talking about smartphones. Are the underlined words key words? Choose ‘yes’ or ‘no’.

- Lucia Is that your new 1 smartphone?
 Jorge Yes, it is. Do you like it?
 Lucia Yes, I do. It 2 looks great. Are you pleased with it?
 Jorge Yes, I am. I absolutely love it!
 Lucia Why do 3 you like it so much?

Jorge Mainly because I can listen to 4 music on it on my way to work.
Lucia I think I 5 might get one soon. I still have an old-fashioned mobile.

- 1 Yes / No
- 2 Yes / No
- 3 Yes / No
- 4 Yes / No
- 5 Yes / No

3. Complete the dialogue between Boubacar (B) and Rosie (R) with words from the box.

about According concerned convinced far If people views
What (x 2)

B Hi, Rosie. What are you reading?

R Oh, it's an article about e-books. 1 _____ to recent research, sales are falling and traditional books are becoming more popular again. 2 _____ are your 3 _____ on e-books?

B 4 _____ you ask me, e-books are much more convenient. Who wants to carry lots of heavy books on holiday, for example? With an e-reader, you can have as many books as you like – that's the main reason why they're so popular. 5 _____ do you think 6 _____ that?

R Good point, but some 7 _____ like the feel of a book in their hands, and others say they can read more easily from a page than from a screen.

B As 8 _____ as I'm 9 _____ people like that are just old-fashioned! Everyone needs to be able to read from a screen nowadays.

R Well I'm 10 _____ that both traditional books and e-books will continue to be part of everyone's lives, so maybe we can have the best of both worlds.

4. Complete the sentences with the correct form of the words in bold.

EXAMPLE:

I want to join a gym but the membership price is £40 per month! That's a lot of money!

able achieve communicate connect employ fit friend happy
inform member secure

- 1 It can be difficult to keep a _____ going if you live a long way from each other.
- 2 Some people believe that money can buy _____, but for me it's about good health and the people you love.
- 3 Karl hasn't had a job for three months, so he's learning a new language to help him find _____.
- 4 Nearly all airports carry out a number of _____ checks nowadays – apart from a passport check, your luggage will be examined and X-rayed.
- 5 A slow internet _____ is really annoying as it can take ages to do anything.
- 6 You'll find your _____ levels improve if you do regular exercise like walking or cycling.
- 7 Margot's _____ to type has improved a lot since she did an online course.
- 8 Some older forms of _____, like writing letters, have largely been replaced by more modern technology.
- 9 Hiro's greatest _____ at school was coming top of his year in maths.
- 10 You should find all the _____ you need in this document, but let me know if you need more help.

5. Complete the sentences with a word/phrase from the box and the correct form of the verb in bold.

a lot in common in touch on well out up

1 Nina is very popular so she _____ with everybody in her language class.
(get)

2 We try to _____ with our best friends every weekend to have dinner together.
(meet)

3 I _____ with my brother; he loves sport and music but I prefer reading and the cinema. (have)

4 Pat is feeling sad because he _____ with his friend Raul. (fall)

5 Since my girlfriend has been away, I _____ with her every day by email.
(keep)

6. Complete the sentences with the present simple, present continuous or present perfect form of the verb in brackets.

1 I _____ (know) Ahmet for three years. We met when we were at school together.

2 Tariq isn't at home because he _____ (spend) all day at the beach and won't be back until later.

3 Ana's quite shy and so she _____ (not/like) loud people.

4 Our friend Yun travels a lot for his new job and _____ (go) to eight different countries since he started.

5 Some people _____ (talk) with their friends every day, even if it's only through social media sites.

6 Sorry, but you've missed Daniel – he _____ (just/go) for lunch with his brother.

7 Ellen _____ (call) last night to say that unfortunately she can't come to the cinema tomorrow.

8 Piotr and Yulia had an argument yesterday and they _____ (not/speak) to each other since.

9 I _____ (not/meet) my colleague Johanne because we only communicate through email so I don't know what he looks like.

10 Fernando is at his French class. He _____ (learn) the language for his trip to France next month.

7. Choose the correct option a–c to complete the sentences.

1 Last week this shirt cost £12, but today it was _____, so I only paid £6.

- a bargain
- b half-price
- c deal

2 Why don't you get this tablet? There's a 20% _____ on it at the moment.

- a discount
- b consumer
- c purchase

3 Would you like me to help you carry your _____? It looks heavy!

- a special offer
- b item
- c shopping

4 They didn't spend long in the shop as they only needed four _____.

- a deals
- b purchasers
- c items

5 Sadiq bought three books for the price of one – what a _____!

- a bargain

- b customer
- c consumer

8. Read the article about meeting people on the internet. Decide if the sentences are true (T) or false (F).

Meeting again... on the internet!

For most people, the internet is part of our daily lives. There are so many things it can be used for; from shopping online to studying for a degree, or researching your family history. But for some people, sites like Facebook or YouTube have had a much more dramatic effect. Here are the stories of two people whose lives have been dramatically changed through the power of the internet.

Tomoko's story

Tomoko was one of two twin girls born in Tokyo in 1987, but separated at birth and adopted by two different families. When she was four years old, Tomoko moved with her new parents to Scotland. Years later, while she was studying there at university, she received a strange phone call from one of her friends. It turned out that he'd had seen a girl that he'd thought was Tomoko on a YouTube video. The similarities were astonishing, apart from the fact that the other girl spoke with an Australian accent. When Tomoko watched the video for herself, she was amazed, and decided to find out more about this intriguing 'double'. She eventually discovered that Jade, the girl in the film, is a singer, and had recently moved to the United States. Like Tomoko, she had been born in Tokyo, on exactly the same day. The girls finally met up in London a few months later, and medical tests proved that they are actually sisters.

Annie's story

Imagine meeting your daughter again after a gap of sixty-eight years. Hard to believe, but that's exactly what happened to Annie Walberg from Connecticut, USA. Annie was only sixteen when she gave birth to her precious daughter and was unable to keep her, so one-day-old Fiona was given to another family in 1945. For the next twenty-five years, Annie wrote hundreds of letters to the daughter she missed so badly, but Fiona's new family thought it was best not to pass them on to her. Naturally, as she grew up, Fiona

assumed that her real mother didn't want to know her or have any contact with her, but nearly seventy years later she received a friend request on Facebook ... from an eighty-four-year-old! After many years, Annie had finally managed to find her daughter by searching the internet, and using the few details she knew about the family who had given her a new home. They have now met several times and are in regular contact. The lost letters cannot be replaced, but they can now talk about all the lost years.

- 1 The internet has helped thousands of people find lost friends and relatives.
T / F / NG
- 2 Tomoko has made a video to try to find her sister.
T / F / NG
- 3 It isn't certain yet if Jade is Tomoko's twin.
T / F / NG
- 4 Annie had been looking for her daughter for a long time.
T / F / NG
- 5 Fiona found her real mother through reading a letter.
T / F / NG

9. Read the article again and complete the sentences. Use one, two or three words from the text for each answer.

- 1 Tomoko has spent most of her life living in _____.
- 2 The girl in the video looked like Tomoko but her _____ was different.
- 3 Jade travelled from _____ to meet Tomoko.

- 4 Fiona's _____ didn't let her read Annie's letters.
5 It wasn't true that Annie wanted no _____ with her daughter.

10. Choose the correct answer from the words in italics.

- 1 Excuse me, but that bag belongs / is belonging to me!
2 We asked several people but none of them was knowing / knew where the post office was.
3 Unfortunately, most local shops are / are being more expensive than supermarkets.
4 A How was your trip to Venice last month?
B It was fabulous! We really loved / were really loving it!
5 If you think / are thinking about getting a new car, you should take advice from someone first.
6 She bought the red shirt because the blue one didn't feel / wasn't feeling as comfortable to wear.
7 I might be at the shops for most of tomorrow because I'll be looking / look for some new shoes for work.
8 A Why didn't you answer when I called you earlier?
B Sorry, I must have been studying and I didn't hear / wasn't hearing the phone ring.
9 Doesn't it seem / Isn't it seeming unusual that no one else has turned up for the meeting?
10 If we owned / were owning a bigger house, I'd fill it with beautiful furniture!

Уровень L3

Устная часть – ответить на вопросы в билете по пройденным в течение семестра темам
Письменная часть – лексико-грамматическая контрольная работа

Задания на аудирование

Task 1. Fill in the gaps with up to 5 missing words.

1. Actress Dame Maggie Smith died aged 89, she won _____ of awards.
2. The UK Prime Minister Keir Starmer twitted Maggie was _____ and was considered a 'true national treasure'.
3. BAFTA recognised her as a legend and stated Maggie had a _____ career.
4. Gyles Brandreth thinks that Maggie was a global figure as she's known for _____.
5. The extraordinary roles she performed in films ranged from Shakespeare's _____ to British historical drama Downton Abbey or known to _____ Harry Potter.
6. Maggie was one of the greatest actress, there was something unique about her: her _____, _____, _____.
7. Maggie _____ during her long career as an actress.

Task 2. Explain the words in bold.

1. Maggie Smith was **one of a kind**.
2. She was **witty** as she performed in comedies.
3. Gyles Brandreth **paid tribute to** Dame Maggie Smith.

Задания на чтение / лексику и грамматику

Task 1. Read the text and decide which sentence A-F best fits the gap 1-6.

Jean-Paul Belmondo before *Breathless*

For Jean-Paul Belmondo, August 25, 1958 seemed like any other day. As his sweat-soaked shirt clung to his chest, the actor thought to himself that destinies weren't dictated by summer

humidity. The 25-year-old didn't have any plans. He was simply living in the moment and doing what he knew best: walking. (1) His shoes had covered every square inch of the capital.

Belmondo's walks followed a method. According to him, the streets had as much to offer as acting classes. He learned from "the old actors": Michel Simon, Jules Berry and Pierre Brasseur. These stars of pre-war cinema served as idols for Belmondo. (2) When preparing for a role in the theater, Belmondo wandered at night and played out his role in the street.

In 1952, he chose the Luxembourg Gardens for his last rehearsal before the entrance exam for the National Drama Conservatoire. (3) While walking Belmondo also thought about his past. For example, on the final year jury at the Conservatoire, where he failed miserably, and was signaled that he had nothing to do in this profession. (4) During the three years of this painful apprenticeship, each time Belmondo played a scene, Pierre Dux, his teacher, drew the same conclusion: "What do you want me to say? Go and sit down." He also predicted that he would never be able to get a girl in his arms.

It was the day when Belmondo got acquainted with the young film director Jean-Luc Godard. The occasional encounter led to the young actor being cast in a short film being shot a few steps away in a hotel. (5)

- a) Jean-Paul's dreams and ambitions from his childhood were to have a star-role in a film. (distractor).
- b) From the neighborhood of Denfert-Rochereau where he lived, to the bars of Saint-Germain-des-Prés, which had become his favorite haunts, and beyond that, the banks of the Seine and the boulevards. (1)
- c) This was a year before his iconic on-screen death in *Breathless*.
- d) *Le Monde* theater critic Robert Kemp, who attended the audition, wrote on July 5, 1956: "Molière would have been angry." (4)
- e) He knew that to be like them, you first had to learn to observe life around you, or simply walk. (2)
- f) In the early hours of the morning, gatekeepers were appalled to discover a young man, who looked like he had escaped from a psychiatric hospital, perfecting his monologue. (3)

Task 2. Choose the best option.

THE WAVE THAT CHANGED CINEMA

The French New Wave is one of the most (1) _____ film movements in the history of the cinema. During the late 1950s and early 1960s, the New Wave rejuvenated (2) _____ France's already prestigious cinema and energized the international art cinema as well as film criticism and theory, reminding many contemporary observers of Italian neorealism's impact (3) _____ after World War II. The New Wave dramatically changed filmmaking inside and outside France by (4) _____ new styles, themes and modes of production (5) _____ the world. Suddenly, there were scores of new, young twenty- and thirty-something directors, (6) _____ Louis Malle, François Truffaut, Jean-Luc Godard, and Claude Chabrol, delivering film after film (7) _____ launching a new generation of stars, including Jeanne Moreau, Jean-Claude Brialy, and Jean-Paul Belmondo. As a result of new production norms and a cluster of young producers anxious to participate in this burst of filmmaking, (8) _____ 120 first-time French directors were able to shoot feature-length motion pictures between the years 1958 and 1964. (9) _____ many of those young directors made several films during those years—Jean-Luc Godard (10) _____ released eight feature films in four years - so the total number of New Wave films is truly amazing. A whole new range of options (11) _____ film aesthetics was born, often combined with tactics from the past that were dusted off and reintroduced (12) _____ them.

- 1. a) signifying b) **significant** c) of significance
- 2. a) the b) a c) ---

- | | | |
|-------------------------|--------------------|-----------------------|
| 3. a) still | b) right | c) yet |
| 4. a) encouragement | b) courageously | c) encouraging |
| 5. a) throughout | b) everywhere | c) inside and out |
| 6. a) such like | b) so like | c) such as |
| 7. a) while | b) whereas | c) as well |
| 8. a) rough number | b) roughly | c) as much as |
| 9. a) Also | b) Moreover | c) Thus |
| 10. a) alone | b) by himself | c) as one |
| 11. a) on | b) at | c) for |
| 12. a) together | b) instead of | c) alongside |

Task 3. Put the word in the brackets in the correct form.

At its core, the French New Wave was a radical **1.** _____ (DEPART) (departure) from the existing norms and techniques of filmmaking. The movement emerged out of a rising **2.** _____ (NOT SATISFY) (dissatisfaction) with the traditional French cinema, which many of the Nouvelle Vague directors considered to be overly artificial and bound by rigid **3.** _____ (FORMAL) (formalities).

Truffaut, Godard, and their peers embarked on a journey to create films with strong **4.** _____ (RESEMBLE) (resemblance) to the reality they observed and experienced.

They were heavily influenced by the works of then-underappreciated directors like Alfred Hitchcock and Howard Hawks. These earlier filmmakers' emphasis on personal vision and **5.** _____ (INNOVATE) (innovative) styles resonated with the young French directors, enhancing their eagerness to experiment.

The films produced during this time were marked by a desire to provoke **6.** _____ (VIEW) (viewers) into a new understanding of what cinema could be. French New Wave films often broke from linear storytelling, choosing ambiguity and **7.** _____ (COMPLEX) (complexity). Instead a **8.** _____ (DIVERSE) (diversity) of themes was wider than ever before in cinema, ranging from social commentary to attempts to explore the **9.** _____ (DEEP) (depth(s)) of love and life.

Task 4. Complete the second sentence so that it means the same as the first. Use between three and eight words and the word given. Do not change the given word.

- The team has won the game and has become a champion.
If Manchester United hadn't won that game, _____ the championship. **WON**
/ 2 points
- The police didn't find any fingerprints and failed to identify the suspect.
If the police had found a fingerprint, _____ to identify a possible suspect. **ABLE**
/ 2 points
- Ethnographers collect and catalogue ancient ornaments not to lose the meaning and image of these elements to time. If the ethnographers did not collect and catalogue ancient ornaments, the meaning and image of these elements _ to time. **LOST** / 2 points
- I'm sure that his family's long tradition of involvement with crime resulted in his verdict being "guilty".
I'm sure that if his family _____ a long tradition of involvement with crime, his verdict wouldn't have been 'guilty'. **HAD** / 1 point
- The Spanish Armada lost the battle, after that Britain managed to become an empire.
If the battle against the Spanish Armada _____ Britain would have never become an empire. **WON** / 2 points
- They can find him guilty of the crime if there is more evidence against him.

He _____ guilty unless some more evidence against him is produced. **FOUND**
/ 2 points

7. He cannot arrive on time. He can manage it only if he breaks the speed limit. He cannot arrive on time _____ the speed limit. **UNLESS**

Задание на говорение

Card 1

1. How far do you agree with the statement: "Attractiveness guarantees success and happiness"?

- give your definition of the notions success, happiness and beauty;
- comment on the headline of the article *'The idea of beauty is always shifting. Today, it's more inclusive than ever.'*;
- voice your point of view about a big-tent beauty.

2. What challenges does gentrification pose for the future?

Card 2

1. There is no recipe for being an ideal parent, but there are many ways in which people try to reach this ideal, how far do you agree with this statement? Talk about:

- parenting styles (name and characterise at least 3 that were discussed during the lesson);
- your understanding of what is more important: being an ideal parent or being a good parent?
- at what life stage should the discussion about parenting approaches begin? (when you are planning a family, when you are a parent already or when you shape your personality through the attempts to understand the world around you)

2. What do you know about digital detox and why can it be useful? Give some examples.

Card 3

1. Having a role-model means that you lose your unique identity while trying to become someone else, do you agree?

- give the definition of a role model (how you understand it);
- name some people who were discussed as part of this course, can they be your role model?
- your understanding of the statement given in the question.

2. Which Historical Heritage sites do you know? Why are they famous? Give your examples and explanations.

Card 4

1. Our achievements define us as professionals, is it always important to be the best in order to be a true professional?

- name what you consider to be an achievement of high value;
- give an example talking about the career of a chef in a high-class restaurant;
- talk about your personal achievements (you don't have to tell the truth) and their role in your future career.

2. How can parents become a role model for their children?

Card 5

1. The great exodus /'eksədəs/ from megalopolises is likely to happen sooner than we expect, do you agree that life in big cities is no longer attractive?

- talk about the hardships of life in a big city;
- give an example of the situation in Margate;
- are you ready to live closer to nature or do you prefer the rush of big cities? (give your reasons)

2. What parenting styles can you name? What are their features, advantages and disadvantages?
<p>Card 6</p> <p>1. Our life style is the way we express our inner world and the reflection of our system of values, is it so?</p> <ul style="list-style-type: none"> • give examples of life styles that were discussed in the lessons; • talk about the life style that you like and the one that you currently have (if the reality differs from expectations, what is the cause of the difference?) • how necessary is it to follow a popular life style? <p>2. How have technology and social media impacted the way young people interact with their peers compared to the older generations?</p>
<p>Card 7</p> <p>1. The interest in ancient traditions can be revived, but we have already forgotten how interesting the culture of peoples that populate our country is, how far do you agree with this vision?</p> <ul style="list-style-type: none"> • talk about your understanding of culture (what lies behind this term); • give an example from the article that was covered as part of the course (<i>Memories are crafted in wool</i>); • do you agree that the interest to the cultures that existed for centuries and now are disappearing can be revived in the era of zoomers? <p>2. What are the ways to accept a new culture of big-tent beauty?</p>
<p>Card 8</p> <p>1. Smartphones: a threat or a blessing for communication, which side do you take?</p> <ul style="list-style-type: none"> • give examples of situations in which devices facilitated or, on the contrary, impeded communication and had an impact on relationships between people; • make a reference to some practices of banning the use of smartphones at family dinners in restaurants (covered in the lessons); • do you agree that the digital detox is a type of treatment that many need, but few can accept (go through) and recognise its necessity? <p>2. What are the fields where appearance matters and why?</p>
<p>Card 9</p> <p>1. The internet is the most common and least trustworthy source of information nowadays, how far do you agree with this statement?</p> <ul style="list-style-type: none"> • talk about the way you are taught to choose information (that is recommended by the teachers of your major subjects); • how do such sources of information appear and can we rely on them? (additional situations to analyze: searching for some information for your speaking assignment in English; searching for information that is needed for your research; confirming some facts about a film/ book/ a famous person) • give your thoughts on the question about the role of the internet as a source of information (as stated in the question above). <p>2. Illustrate the value of community in a person's life with the help of the <i>Bank of Dave</i> movie.</p>

2 семестр (весенний) – дифференцированный зачет

Примеры заданий

Уровень L1

Устная часть – развернутый ответ на три вопроса по одной из предложенных тем за два семестра.

Письменная часть – письменный лексико-грамматический контрольный тест, контрольное задание по чтению и сочинение – рассуждение на одну из предложенных тем из семестра.

1. Задание на аудирование по теме «Книги»
2. Задание на говорение: доклад на тему «Путешествия во времени»
3. Письменная работа: написание сочинения- рассуждения на тему: «Преимущества космического туризма»
4. Лексико- грамматической тест и контрольное задание по чтению

I. Listen to the part of the chapter of the book and guess what book it is. What do you know about this book ? Who is the author? Who is the main character? What is the genre and the plot?

Script:

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversation?' So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her. There was nothing so very remarkable in that; nor did Alice think it so very much out of the way to hear the Rabbit say to itself, 'Oh dear! Oh dear! I shall be late!' (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and fortunately was just in time to see it pop down a large rabbit-hole under the hedge.

2. Say if the statements are true or false.

1. Alice enjoyed sitting by her sister on the bank of the river.
2. The book Alice's sister read had pictures and conversations in it.
3. The hot day made Alice feel energetic and cheerful.
4. The White Rabbit had purple eyes.
5. Alice didn't see rabbits with waistcoat-pockets and watches before.

3. Listen to the part of the chapter again and complete the sentences from it with correct words.

- 1) Alice was beginning to get very tired of sitting by her sister on the _____, and of having nothing to do.
- 2) So she was considering in her own mind (as well as she could, for the hot day made her feel very _____ and _____).
- 3) When suddenly a White Rabbit with _____ eyes ran close by her. There was nothing so very _____ in that.
- 4) But when the Rabbit actually took a _____ out of its waistcoat-pocket, and looked at it...
- 5) And burning with _____, she ran across the field after it.

4. Answer the questions: (writing form)

1. Why was Alice getting tired?
2. What did Alice find lacking in the book her sister was reading?
3. What caught Alice's attention and made her start running?
4. What did Alice find unusual about the White Rabbit?
5. Where did the White Rabbit disappear?

5. Listen to the next small part of the chapter and say what happened next. (Writing form)

***Script:** In another moment down went Alice after it, never once considering how in the world she was to get out again. The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well. Either the well was very deep, or she fell very slowly, for she had plenty of time as she went down to look about her and to wonder what was going to happen next.*

6. Complete the sentences with correct words:

The rabbit-hole went straight on like a _____ for some way, and then dipped _____ down, so suddenly that Alice had not a moment to think about _____ herself.

7. Read quotations from this book and say what you think about them. Share your ideas.

“And what is the use of a book,” thought Alice, “without pictures or conversations?”

“The best way to explain it is to do it.”

“If everybody minded their own business, the world would go round a deal faster than it does.”

“Would you tell me, please, which way I ought to go from here?”

“That depends a good deal on where you want to get to,” said the Cat.

“I don’t much care where—” said Alice.

“Then it doesn’t matter which way you go,” said the Cat.

II. Time travel report

Imagine that you have a chance to travel to the past and to the future. Choose two time periods, first in the past and second in the future. Think about the details of your travel and prepare a time travel report. Introduce your report to the students of your group. You need to use the following structure.

Structure of the report

1. Introduction:
 - greeting and self-introduction
 - description of the report topic (interesting times worth visiting)
2. Information about the travel to the past
 - time period in the past
 - reasons for travel to the period
 - interesting facts about the period
3. Information about the travel to the future
 - time period in the past
 - reasons for travel to the period
 - interesting facts about the period
4. Conclusion
 - summarizing why these time periods worth travelling to
 - urging listeners to embark on a time travel and explore past of future

5. Thank listeners for their attention

III. Writing task

Write an essay on the topic “Benefits of space tourism in the future”. Use the structure:

Introduction:

- State the topic and provide some background information
- Present your thesis statement or opinion on the topic

Body Paragraphs:

- Present your main arguments or points supporting your opinion
- Provide evidence, examples, and reasoning to support each argument
- Address possible counterarguments and explain why they are not valid or why your opinion is stronger

- Use linking words to connect your ideas and make your essay flow smoothly

Conclusion:

- Restate your thesis statement and summarize your main points
- End with a strong concluding statement or call to action

IV. Unit test

1. Complete the sentences using the correct words: look for, face, without, overcome, risk, controversial, float, take on, avoid, give up:

1. The government is ready to _____ the challenge to achieve economic growth.
2. In autumn leaves and twigs _____ on the surface of the pond.
3. Many women _____ the problem of how to combine a career and children.
4. Several aircraft and ships disappeared _____ any trace in Bermuda Triangle.
5. Experts were brought in to help _____ a clue to the correct solution.
6. Do you think I should _____ sending them a letter?
7. He wants to _____ speaking to them until he's got more details.
8. They tried to stay away from _____ topics at the dinner party.
9. Nobody knows what made him _____ and be arrested.
10. What can I do to _____ my fear of darkness?

2. Make up sentences using the words from the left and right columns

- | | |
|------------------|-------------------------|
| 1. put in | a. of the debate |
| 2. handle | b. rights |
| 3. equal | c. effort |
| 4. unlock | d. your own judgment |
| 5. digital | e. a secret |
| 6. distract from | f. feedback |
| 7. rely on | g. to college life |
| 8. subject | h. work/purpose |
| 9. dedicate | i. technology |
| 10. adapt | j. more time to hobbies |

3. Complete the sentences using the correct form of one of the verbs: like, be like, look like, would like

1. What _____ the performance _____?
2. I think you _____ your mother, you've got her nose.
3. _____ you _____ to be rich?
4. _____ you _____ playing video games when you were a child?
5. What _____ your brother _____? – Horror films.
6. We _____ to buy a new car but we can't afford it.
7. What _____ the people in this country _____? – They are friendly.

8. What kind of music ____ you ____?
9. What ____ he ____? – He's tall and thin.
10. ____ you ____ studying English?

4. Match the synonyms:

- | | |
|---------------|---|
| 1. reveal | a. mystery |
| 2. crucial | b. to make something happen |
| 3. incredible | c. a feeling that you want to thank for something |
| 4. failure | d. treating equally and in a reasonable way |
| 5. cause | e. tell a secret |
| 6. gratitude | f. a lack of success |
| 7. disease | g. a feeling that something is true or real |
| 8. riddle | h. unbelievable |
| 9. fair | i. illness |
| 10. belief | j. important |

5. Fill in the gaps with one of the vocabulary items:

depending on, granted, outside, because of, within, with regard to, for the sake of, concerning, alongside, including

1. Last week he finished the article _____ the problems of overcrowded cities.
2. The good news inspired everyone _____ her.
3. _____ who you ask, you can get various answers.
4. We can explain the problem to her _____ she is ready to listen.
5. A police car drove up _____ them.
6. It was the Queen's first journey _____ the country.
7. Pupils must remain _____ the school grounds during the breaks.
8. The building isn't suitable for old people _____ all those stairs.
9. I believe he is not doing this just _____ the money.
10. _____ the matter of immigration I'd like to add a few remarks.

6. Put questions to the underlined words

1. The government is losing credibility by its financial policy.
2. Her children were in the beginners' class last year.
3. John received an award for his courage and determination.
4. Developments in microelectronics are affecting industrial processes.
5. They have some new financial whiz who's already made them millions of dollars.
6. This year they are studying the history of the theatre.
7. The manager is going to give her a pay increase.
8. He always takes public transport to work.
9. Hundreds of families lost their homes because of the flood.
10. They will get a certificate when they pass the exam.

7. Use compounds with *some* *no* *every* to complete the sentences:

1. Jack goes to all the auctions looking for _____ in Art Deco style.
2. She didn't know _____ in the room..
3. They searched _____ but couldn't find him.
4. They are hoping to find _____ to live that isn't far from work.
5. _____ phoned him but I didn't get the name.
6. There is _____ in the jar. It's empty.
7. We are bored because there is _____ to go here.
8. They need to talk. There is _____ he wants to tell her.
9. _____ knows that London is the capital of Great Britain.

10. Make sure that ____ is in the room before you lock it.

8. Fill in the gaps with the appropriate form of the verbs using Future Simple, Present Continuous or 'be going to' Verbs: carry, have, see, start, collapse, do, fail, be, go, get

1. Do you think the car _____ if I turn on the ignition.
2. Look out! The chair _____.
3. I have to go now but I _____ you in a few days.
4. Do you know about Lisa? She _____ married next week .
5. He _____ the exam if he doesn't study harder.
6. I _____ this suitcase for you, it must be very heavy.
7. What ____ you ____ on Friday at 1pm? I'd like to meet you for lunch.
8. She looks into her future and says, 'I _____ three children'
9. We've decided, we _____ to France for holiday.
10. There _____ elections in three months.

9. Choose the correct option

- a) had better b) ought to c) would rather
1. She thinks we _____ call the police
 2. Kate doesn't want to learn, she _____ stay at home and play computer games.
 3. That new café is great! You _____ try it.
 4. He _____ go to the doctor with that cough.
 5. The concert starts at 6.30. You _____ go now.
 6. You don't look very well, you _____ not go to work.
 7. If you want to be an expert you _____ get training and experience.
 8. Would you like to stay for dinner? – I _____ go home if you don't mind.
 9. It might be cold, you _____ put on your coats.
 10. You _____ put the money in the bank before you spend it.

10. Use *can, could, may, will, would* or appropriate form of 'have to' in the context of request and obligations

1. _____ you tell me how to get to the post-office?
2. Why ____ he ____ go to hospital yesterday?
3. You _____ borrow some money from me, if you need.
4. It's stuffy in the room. _____ you open the window?
5. _____ you mind waiting a few minutes?
6. My brother _____ work on Sunday. It's his day-off.
7. (in a shop) _____ I have that note-book?
8. His eyesight is poor. He _____ wear glasses for reading.
9. _____ I ask you a question, sir?
10. Tom left before the end of the party. He _____ go home early.

11. Read the text and fill gaps in the statements 1-5 with one word from the text. Do not change it.

HOW DREAMS HELP PEOPLE

Dreams – сновидения

To take a nap – подремать, поспать (обычно днем).

Scientists have studied dreams for a long time. There are many books and articles on this topic. It is clear that they are a big part of each person's life. They are important for our physical and emotional health. But scientists still do not understand everything about them. What do we know now?

Dreams help our brain to deal with our emotions and memories. Scientists think that during sleep our brain 'processes' the real things that happened to us. First of all, something unpleasant that we remember. That is why we sometimes see bad dreams. It is not pleasant, but in fact such dreams help to reduce stress. They also help to 'organize' and 'classify' our memories and information that we got during the day.

Dreams are also important for our physical health. Scientists found out that when we see dreams, our body is becoming healthier. It is because more blood flows to the brain. This is good for our nerves and for our intellect. Also, when we dream, useful hormones are produced by our body.

Dreams are very useful for people's creativity. Many famous artists, writers, and inventors got their best ideas from dreams. For example, such famous authors as Robert Luis Stevenson and Stephen King said that they had found ideas for their books in their dreams.

The great inventor Thomas Alva Edison hated sleeping. He thought that it was a waste of time. So, he slept no longer than four hours each night. However, he often took a nap during the day. Sometimes during these naps he dreamed and saw one of his future inventions.

1. Scientists proved that dreaming plays an important role in each _____ life.
2. Bad dreams are also useful. They help us to _____ stress.
3. When we are dreaming, our body produces _____ hormones.
4. Such writers as R.L. Stevenson and S. King got new _____ for their stories from their dreams.
5. Edison hated sleeping, but sometimes sleep helped him to make new _____.

12. Read the text and choose the right variant below.

WHY FAIRYTALES ARE IMPORTANT FOR CHILDREN

Why (1) _____ children enjoy fairytales? (2) _____ should parents read them (3) _____ children? First (4) _____ all, fairytales show children that (5) _____ can deal with difficult problems. Heroes of fairytales can teach children (6) _____ lot. Of course, you cannot save a beautiful princess (7) _____ to fight (8) _____ a dragon. But you (9) _____ learn to be brave and to win (10) _____ difficult situations. Fairytales show us real problems in fantastic world. (11) _____, children will understand that bad things often happen, but they can (12) _____ find a solution.

1. a) do, b) does, c) have
2. a) what, b) why, c) when
3. a) for, b) about, c) to
4. a) in, b) of, c) at
5. a) they, b) we, c) it
6. a) no article, b) the, c) a
7. a) but, b) or, c) so
8. a) at, b) with, c) from
9. a) can, b) need, c) have
10. a) from, b) at, c) in
11. a) But, b) And, c) So
12. a) then, b) so, c) always

13. Write the correct forms of the words in brackets.

FANTASTIC WORLD OF TOLKIEN

Ugliness - уродство

Priest – священник

Forbade - запретил

John Ronald Reuel Tolkien (1892–1973) was a professor of Oxford university. He was a (SPECIAL) in the history of English Language. But we know him first of all as the (WRITE), author of famous fantasy books. He grew up in the city of Birmingham in West Midlands. At that time this part of England had green countryside and ugly (INDUSTRY) cities. Maybe he remembered this (DIFFER) when he was writing the *Lord of the Rings*. The world of people, hobbits and elves is green and (BEAUTY), but Mordor is dark and scary. Tolkien with his mother and brother lived close to the railway. He saw trains going to South Wales, to places with unusual names like ‘Nantyglo’ or ‘Penrhiwceiber’. Such names made Tolkien’s (IMAGINE) work. Later he (INVENTION) names of the places for his Middle-earth and even several languages. Tolkien’s family was (POVERTY). But the lives of Tolkien and his brother became (REAL) difficult after the death of their mother. The boys did not have any close (RELATE). Only Father Francis, priest and friend of the family, visited the boys (REGULAR). When Ronald was 16, he met the love of his life, Edith. Father Francis did not like it and forbade not only (MEET) but even letters. However, young people did not forget each other and married in 1916. It was a very happy (MARRY) in which four children were born.

Уровень L2

Устная часть – монологическое высказывание по одной из тем, изученных в семестре, на основе предложенных вопросов.

1. What is happiness, in your opinion? What makes you happy?
2. Can you explain why Finland is the first in the table with the results of the recent World Happiness Report? Which factors help it rank so high on the list?
3. Which tips would you give to a person to improve his/her life and feel happy?

Письменная часть – контрольная работа (лексико-грамматический тест и задания на чтение и аудирование).

TEST

Ex.1 Listen to the dialogue and decide if the following statements are True or False.

1. Anna doesn’t think that she is creative.
2. Nick says that when you are painting you can enjoy the process even if you aren’t good at it.
3. Anna usually reads various books including different fiction genres and poetry.
4. Anna has never learned to play the guitar.
5. When you’re brainstorming, you should write down the best ideas that come to your mind.

Ex. 2 Listen and complete the text with the words from the dialogue. Use only one word in each gap.

In the dialogue, Anna and Nick talk about different ways of improving creativity. Nick suggests

- 1) _____ out such activities as painting or drawing. Anna likes the idea but says that she isn’t very
 - 2) _____ at painting.
- Nick also recommends reading various books as a way to
- 3) _____ new ideas. Then they discuss the role of music in enhancing creativity. Besides, Nick mentions that
 - 4) _____ a diary to write down thoughts and impressions can help with creative thinking. Anna finds this suggestion interesting. Nick concludes by talking about the importance of brainstorming, which can
 - 5) _____ to interesting ideas.

Reading

The History of Sambo

One of the most interesting exports from the former Soviet Union is a martial art called sambo. Sambo was created by combining elements of judo, jiu-jitsu, and other wrestling styles. The goal was to improve hand-to-hand combat skills for Soviet military personnel.

Vasili Oshchepkov and Viktor Spiridonov are known as the founders of sambo. They worked with a team of experts to enhance the hand-to-hand combat training. Both Oshchepkov and Spiridonov had a lot of experience in martial arts, which helped them succeed in their mission.

The new martial art included throwing techniques from judo, striking techniques from karate, and various wrestling styles from Uzbek and Tatar folk wrestling. The creators needed a name for their new sport, so they chose "sambo," which comes from the Russian phrase '*samozashchita bez oruzhiya*', meaning '*self-defence without weapons*'.

In 1938, sambo was officially recognised in the Soviet Union. The military and secret police practised a version called combat sambo. The mixed martial art soon became popular in the Soviet Union, it was done by both military people and ordinary citizens.

For many years, sambo stayed mostly unknown outside the Soviet Union. However, in the mid-1960s, Soviet practitioners began to do well in international judo competitions. This success sparked interest in sambo in Europe and Japan. Fighters were attracted to this exciting new martial art because it had many similarities to judo but included a wider variety of techniques, such as leg locks and ground grappling. In the 1970s, sambo made its way to the United States, where it was taught alongside judo and wrestling.

In recent years, the number of people practising sambo in the USA and Europe has grown significantly. It has a bright future ahead as more and more people discover this unique martial art.

Ex.3 Read the text and choose the correct answer to complete the sentence.

1 Sambo incorporated some...

- A ancient Russian wrestling styles.
- B Tatar wrestling styles.
- C boxing styles.
- D arm-wrestling styles.

2 Sambo was developed for...

- A Soviet sportsmen.
- B Soviet ordinary people
- C the Soviet army.
- D Soviet experts in martial arts.

3 Oshchepkov and Spiridonov borrowed ... from judo.

- A striking techniques
- B leg lock techniques
- C hand-to-hand techniques
- D throwing techniques

4 The USA ...

- A was the first country to get interested in sambo.
- B got interested in sambo later than Europe.
- C got interested in sambo, judo and wrestling at the same time.
- D has got interested in sambo recently.

5 The author of the text ...

- A hopes that sambo will become popular.
- B thinks that sambo is underestimated.
- C believes that sambo will enhance the training of the military people.
- D says that the popularity of sambo is increasing.

Ex.4 Read the text again and complete the sentences. Use one word in the correct form for each answer.

- 1 Sambo includes some _____ from karate.
- 2 Sambo was originally created for training the _____ people.
- 3 Oshchepkov and Spiridonov's _____ in wrestling helped them create sambo.
- 4 Soviet sambo wrestlers succeeded in _____ judo competitions, which contributed to the popularisation of sambo.
- 5 People from other countries were _____ to sambo because it had some advantages over judo.

Ex.5 Choose the correct phrase to complete the mini-dialogues.

1

Emily: Excuse me, can you help me? I'm trying to find the library.

David: Sure! You need to walk straight down this road, then _____. The library will be on your right.

- a) turn around
- b) take the second turning on your left
- c) keep turning right

2

Tom: Hi there! Do you know how to get to the nearest bus stop?

Lisa: Yes, it's down this path. Go straight ahead, and you'll see it on your right.

Tom: Thanks a lot! How far is it from here?

Lisa: It's _____. You'll get there in no time!

- a) about a 5-minute walk
- b) taken 5 minutes
- c) so soon as 5 minutes

3

Eve: I've just finished reading that bestseller everyone is talking about.

Frank: Really? What do you think?

Eve: In my opinion, it's well-written, but _____.

Frank: I felt the same way! It leaves too many questions unanswered.

- a) I was disappointing at the end
- b) the ending is disappointing
- c) the last chapter was disappointed

4

Grace: Have you watched the latest thriller that's just come out?

Mark: Yes, I have! _____, I think the plot is really intriguing. _____, I felt that some of the character development was lacking.

Mark: That's a good point. I wanted to know more about the main character's backstory. It would have made the film better.

- a) On the one hand... On the other hand
- b) While... Then
- c) In my opinion... Besides

5

Alex: Rachel, have you ever been to China?

Rachel: No, I haven't, but I would love to visit someday. The culture and history there seem so fascinating!

Alex: I went last year and let me tell you, it was an amazing experience. I _____ the entire trip.

Rachel: That's great to hear! I'll definitely have to make it a priority to visit China soon.

- a) was on the moon
- b) was in a candy store
- c) was on cloud nine

Ex. 6 Complete the text with the correct word. The first letter of the missing word is given.

Fixed and growth mindset

When you have a fixed mindset, you believe that your abilities are static and cannot change. On the other hand, having a growth mindset means believing that you can **1) i**_____ your abilities through effort and determination. When you face an **2) o**_____, you don't give up easily and see a challenge as an **3) o**_____ to learn and grow. Developing a growth mindset may **4) r**_____ changing your perspective and being open to new experiences. Remember, your mindset can greatly **5) a**_____ your success and happiness. So, aim to cultivate a growth mindset and watch how it can positively influence your life.

Ex. 7 Read the dialogue and choose the correct answer.

A: Have you heard from Sarah? They say she's travelling alone in **1) _____** UK.

B: Yeah, I talked to her yesterday. She said she's having a great time exploring different towns.

A: That's awesome. I can't believe she's doing it all on her own.

B: Sarah is so adventurous! She **2) _____** a lot of planning before she set **3) _____**.

A: Definitely. One **4) _____** prepare well for such a trip. It helps avoid problems afterwards.

B: She's always been independent and not afraid to take risks.

A: I just hope she doesn't run **5) _____** money while she's there. Travelling can be quite expensive.

B: True. But knowing Sarah, she probably budgeted wisely and can afford **6) _____** such trips. Plus, she's always been good at saving money.

A: Yeah, that's true. I can't help **7) _____** her.

B: Agreed. **8) _____** she stays safe and follows her instincts, I'm sure she'll have a fantastic trip.

A: Definitely. I suggest **9) _____** her next time. I am so tired of the office job! This boring routine influences **10) _____** my mood and health.

- 1) A. the B. _ C. an
- 2) A. must do B. must be doing C. must have done
- 3) A. off B. away C. up
- 4) A. should have prepared B. should prepare C. should be preparing
- 5) A. away from B. off C. out of
- 6) A. taking B. to take C. take
- 7) A. admire B. to admire C. admiring
- 8) A. Provided that B. Unless C. As soon as
- 9) A. to join B. join C. joining
- 10) A. on B. at C. _

Ex. 8 Read the text, put the verbs in brackets into the correct forms. Don't use contractions (wouldn't, hadn't, didn't).

Up to now, the development of our society **1) _____** (**influence**) by inventions and technological innovations significantly. If the wheel had not been invented, trade **2) _____** (**take**) a lot longer to develop. Without discovering electricity, we **3) _____** (**not have**) modern

gadgets and means of communication. If the internet 4) _____ (**not exist**), working together globally would be almost impossible.

As far as the future technological development is concerned, several predictions can 5) _____ (**make**). If governments 6) _____ (**invest**) more in artificial intelligence, we will see breakthroughs that will revolutionise industries. However, special attention should 7) _____ (**give**) to ethical concerns – otherwise, we might face challenges related to privacy and security.

According to predictions, by the middle of this century, we will 8) _____ (**automate**) many routine tasks, allowing people to focus on more creative work. Besides, augmented reality 9) _____ (**use**) in our daily lives. Imagine walking down the street and seeing helpful information overlaying the buildings.

In conclusion, technological advancement has great potential to transform the society. However, before introducing an innovation, we should ask ourselves how 10) _____ (**it, influence**) our lives.

Уровень L3

Устная часть – ответить на вопросы в билете по пройденным в течение семестра темам
Письменная часть – лексико-грамматическая контрольная работа

Задания на лексику и грамматику

Task 1. Guess the word and write it in the boxes below (1 box per letter). If you have guessed the word correctly, the last letter of the preceding word will be the first letter of the following word. The boxes in bold are for the first/last letter of the words, you do not need to write it twice (see the example below).

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

- (1) (about flight, speech) – – marking a beginning: first in a projected series
- (2) a feeling of wanting smth or smb very much
- (3) complain about smb /smth
- (4) the process of making it possible for smb to do smth, or making smth possible
- (5) ... the lecturer's arm (syn.: turn)
- (6) [from U5]: syn. for *pay homage* [add a preposition] is pay ... *prep.*; showing respect and admiration for smb
- (7) syn. for banned or illegal
- (8) making a person feel worried about achieving smth, making smb feel less confident

-----■-----■-----■-----■-----X-----■-----■-----

Task 2. Word formation

- a) The _____ survival rule says: when lost in a forest do not panic. VARY
- b) Intrepid travellers are likely to have _____ curiosity and infinite enthusiasm to discover new wonders of the world. QUENCH To many of us our local areas seem grey and _____, which does not mean that there is nothing to discover in them.
REMARK
- c) A _____ nature of his actions was not obvious to everybody who was dealing with him. MALEVOLENCE
- d) The _____ MMA fighter Connor McGregor claimed that he would outpace his rival Colby in the upcoming fight. FAME

- e) Casting a _____ glance in her offender's direction she pressed her lips tight and said nothing. RESENT
- f) Should spreading of AI generated videos with today's Hollywood stars be _____? LAW

Task 3. Paraphrase the underlined parts of the sentences below using the lexical items from your target vocabulary list.

1. According to the official version, provided by the US government, the Electra's supply of fuel was exhausted and the plane crashed into the Pacific Ocean.
2. For Alastair Humphreys it seemed "insane" that he had travelled to the most distant corners of our planet and at the same time knew little about the area he lived in.
3. The untidy appearance of the staff can scare the customers of any shop so that they decide to go away.
4. To mitigate the damage caused by the production process the company has taken a number of measures.
5. Sudden and quick decrease on the graph illustrates the fast change of the key interest rate.
6. When planning a trip, you should keep in mind the possibility of the plane being delayed.
7. The company's slogan — "Don't just book it, Thomas Cook it!" — propelled the brand to 'being known of by most people' status for budget leisure travel.

Task 4.

(a) Fill in the gaps with the appropriate (definite / indefinite / zero) article.

___ Grand Canyon	___ Pinot Noir	___ North Pole	___ Yellowstone National Park
___ Eiffel Tower	___ Tasman National Park	___ aurora borealis and ___ aurora australis	___ Irish Republic
___ Rocky Mountains	___ Arctic wilderness	___ Marshall Islands	___ Taj Mahal
___ Lake Geneva	___ Norwegian archipelago	___ Lighthouse of Alexandria	___ Napa Valley
___ Antarctic	___ Gobi desert	___ National Geographic	___ Far East

(b) Use the appropriate article:

- 1) _____ Napa Valley in California is _____ most famous in California for _____ Cabernet Sauvignon and Chardonnay wines.
- 2) _____ Aurora Australis is the southern counterpart of _____ Aurora Borealis, visible in the skies above _____ Antarctica.
- 3) In order to protect _____ fragile Arctic environment and its wildlife _____ Svalbard authorities work 24/7 all the year round.
- 4) _____ Grand Canyon's vast and colorful layers of rock tell _____ captivating story of _____ Earth's history.
- 5) The young girl beamed with _____ delight as she held _____ miniature Eiffel Tower in her hand, a cherished memento of her visit to _____ iconic Parisian landmark.
- 6) Archeologists have found _____ evidence of human activity in _____ Yellowstone National park that dates back at least 11,000 years.
- 7) The locals claimed to have seen Amelia Earhart and Fred Noonan after their plane crashed in _____ Marshall Islands.

- 8) There's certainly something wonderfully poetic in a piece of land outside ____ city of Agra 206 kilometers south of Delhi that was chosen for _____ Taj Mahal.
- 9) _____ Norwegian archipelago of Spitsbergen, also known as _____ Svalbard, has expanded its tourist offerings with new activities and attractions.
- 10) _____ National Geographic's stunning photography showcased ____ majestic peaks of _____ Rocky Mountains and the vibrant streets of _____ Cape Town.

Задания на говорение

Card 1 Books

1. How far do you agree with Ray Bradbury saying: "You don't have to burn books to destroy a culture. Just get people to stop reading them."?
 - a) share your view on the current trends in youth reading, including popular genres and factors influencing reading habits;
 - b) discuss the possible ways of fostering a love for reading among young people;
 - c) summarise the consequences humanity will face if reading is ever banned;
 - d) make references to Ray Bradbury's story "The Exiles"
2. What are the essential qualities or characteristics that distinguish works of art from other creations?

Card 2 Books

1. How far do you agree with the following: "Reading is to the mind what exercise is to the body." (Richard Steele)? Discuss the following and support your ideas with examples:
 - a) the benefits reading provides;
 - b) excessive TV and the Internet leading to intellectual decline;
 - c) light reading compared to thought-provoking reading
2. Suggest ways to overcome the contradiction in the modern world where advancing technologies are created to protect the environment but at the same time contribute to its degradation.

Card 3 Global challenges

1. Talk about Jimmy Carter's contribution to the fight with global challenges:
 - a) Jimmy Carter's career from a farmer to president;
 - b) his achievements such as averting nuclear disaster, eradicating diseases, exploring green energy technologies, fighting racial and social inequality;
 - c) what makes a person's life meaningful.
2. What real-life events inspired Bram Stoker to write "Dracula" and what unites it with other vampire stories and legends?

Card 4 Legacy (The Dig)

1. Speak about the ethical dilemmas the characters of the movie "The Dig" faced during the excavation:
 - a) archaeological discovery and preservation of the artifacts;
 - b) the role of individuals and the power of collaboration in shaping history;
 - c) the importance of preserving and understanding the past that can provide us with valuable insights in the present and future.
2. Do you believe in multiple parallel universes where our decisions and choices in one universe can impact our counterparts in other universes?

Card 5 Local and Global

1. What unexpected treasures or insights have you discovered right on your doorstep? Make references to the text *"I've made secret discoveries on my doorstep: a year-long journey across my local OS map"* by Alastair Humphreys

- a) share your understanding of a doorstep discovery and provide examples;
 - b) talk about the benefits of slowing down and paying attention to the minor details in our surroundings;
 - c) give advice how to cultivate a habit of appreciating simple things and pleasures instead of constant grumbling about life.
2. In what way can reading offer an immersive travel experience that is comparable or superior to real-world travel?

Модуль 2. Английский язык для академических целей (English for Academic Purposes)

3 семестр (осеней) – зачет

Примеры заданий

Уровень L 2

Устная часть – диалог по одной из тем семестра

Study the notes on some of advantages and disadvantages of online learning

Advantages	Disadvantages
Efficiency	Problems with focus
Accessibility of time and space	Technology issues
Affordability	Sense of isolation
Suits a variety of learning styles	Less in-person interaction

Discuss the advantages and disadvantages of online learning with a partner for two minutes. Use the phrases of expressing opinion, agreeing, disagreeing, etc.

Письменная часть – контрольная работа.

Пример заданий в письменной зачетной работе.

I. Listen to the lecture and take notes.

Topic _____
 Innovation in the past _____
 Innovation in the present _____
 The examples are: 1) _____ 2) _____
 Things innovations have in common: 1) _____ 2) _____
 A successful innovation is _____

II. A. Read the text and match the paragraphs with the main argument.

- | | |
|-------------|--|
| Paragraph 2 | a. How to react to failure |
| Paragraph 3 | b. Changing your feelings about failure |
| Paragraph 4 | c. The importance in believing in what you are doing |
| Paragraph 5 | d. The importance of trying to continue |

Failing to succeed

- 1 Many people fear failure and try to avoid it even when they have the opportunity to succeed. One way we protect how we value ourselves is by believing in our own ability and by

convincing others of it as well. As a result, many people won't attempt something if they think they might fail. Altering our view so that failure is fine and nothing to worry about could be the key to opening opportunities to be successful in life.

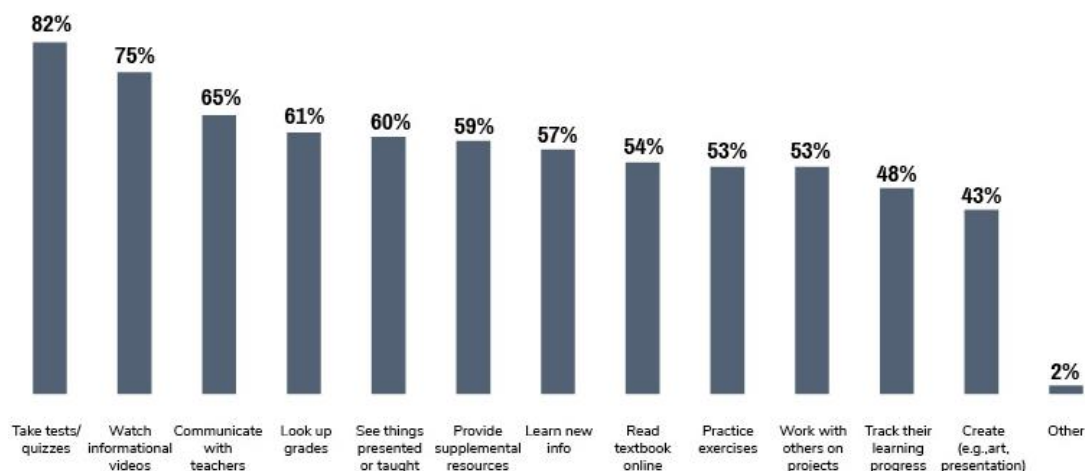
- 2 Failure is an aspect of everyone's life. However, when we think of experiencing failure we shouldn't think of ourselves as a failure. People often feel ashamed or embarrassed when things go wrong, but failure actually gives us the chance to learn, adapt, and improve. When companies find that a product is unpopular and not doing well, they often take the opportunity to improve the product, and doing so can make them more successful as a business. People can also look at their own bad experiences as an opportunity to learn and improve. For example, if someone does badly in a job interview, they can learn what went wrong and do better in the next one. In fact, nearly winning can make people much more determined to succeed in the future. It gives us a feeling of nearly being successful and makes us much more determined to succeed next time we try.
- 3 Passion is also a vital part of being successful. When people constantly say no to your ideas, enjoying what you do can push you forward to continue. You are motivated to keep trying because you are doing it for yourself or something you believe in, like a charity. Some people connect success to ideas such as fame and making money. While these are ways to measure your success, there are also many other ways such as how happy your achievements make you. Feeling good because you are doing something you love or are supporting others, can be one way of viewing your own success, even when others don't recognize your achievements.
- 4 Not only do people need passion to succeed they also need keep trying – the ability to not give up is essential. People can be intelligent, talented, or have a lot in common sense but because success takes time, sometimes people give up before they reach their goals. In some professions, such as working in movies, you need to quickly get used to people saying no. Steven Spielberg famously failed to get into college to study movies and was rejected more than once. He then went on to become one of the most successful movie directors of all times. Every failed attempt is difficult, but each one can make us stronger if we react in the right way. The ability to not give up and keep going is part of nearly all successful people's personalities.
- 5 Whether you want to be a writer, a business person, or a musician, being successful will mean you have to deal with a lot of failure. Lots of people see this as a lack of ability, but arguably it should just be seen as a step towards success.

II. B Find in the text the details used to support these points

1. People who love what they do are motivated to succeed.
2. People give up before they reach their goals.

III. Write a paragraph describing the bar-chart.

What Are the Primary Reasons Why Students Use Digital Learning Tools?



Уровень L 3

Устная часть – диалог по одной из тем семестра

Talk to your partner and agree on top 3 inventions of the 21st century. Support your point of view with reasons and examples. Use the phrases of expressing opinion, agreeing, disagreeing and clarifying information.

- social media;
- multi-use rockets;
- the capsule endoscopy;
- bitcoin and cryptocurrencies;
- mobile operating systems;
- 3D printing;
- the IoT.

Письменная часть – контрольная работа

Пример заданий в письменной зачетной работе.

I. Listen to a piece of news about generative ai and mark the statements below true (T) or false (F).

1. Generative artificial intelligence (AI) was first introduced in 2021 and immediately benefited all the consumers.
2. The companies of technological sector are expected to be big beneficiaries in the upcoming year.
3. Firms have plans for large-scale use of generative AI after the experimental phase ends.
4. This year the sum of money poured in AI by startup investors has almost doubled.
5. AI specialists are facing increasing difficulty in finding job opportunities specifically related to AI, according to a survey by McKinsey.

II. Read the text and mark the statements below true (T), false (F) or not given (NG).

1. Jonah Lehrer argues in his book "Imagine" that creativity is a special gift enjoyed by a select few.

2. All creative ideas are generated by 3M workers while they are involved in outdoors activities?
3. Short-term disruptions during work can help spark moments of insight.
4. Employees at 3M spend a quarter of their time dealing with some risky ideas.
5. Most creative solutions are offered by people who are non-professionals
6. Young people can be more creative because quite often they are more inquisitive and can think out of the box.
7. In big cities people can think more innovatively because they can get access to a wider range of information easier.
8. William Shakespeare was largely a man of his time and lived in a culture that valued ideas.
9. Jonah Lehrer suggests that better policies can increase collective creativity.
10. By saying “creativity is the residue of time wasted” Albert Einstein basically condemns any unproductive idleness.

The roots of creativity

Where do good ideas come from? For centuries, all credit for these mysterious gifts went to faith, fortune and some muses. But to assume creativity is some special gift enjoyed by the few is both foolish and unproductive, argues Jonah Lehrer in “Imagine”, a new book about “how creativity works”. Drawing from a wide array of scientific and sociological research—and everything from the poetry of W.H. Auden to the films of Pixar—he makes a convincing case that innovation cannot only be studied and measured, but also nurtured and encouraged.

Just outside St Paul, Minnesota, sits the corporate headquarters of 3M. The company sells more than 55,000 products, from streetlights to computer touch-screens, and is ranked as the third-most innovative in the world. But when Mr Lehrer visits, he finds employees engaged in all sorts of frivolous activities, such as playing pinball and wandering about the campus. These workers are actually pushed to take regular breaks, as time away from a problem can help spark a moment of insight. This is because interrupting work with a relaxing activity lets the mind turn inward, where it can subconsciously puzzle over subtle meanings and connections (the brain is incredibly busy when daydreaming).

But this is just one reason for 3M's creative output. The company also encourages its employees to take risks, not only by spending masses on research (nearly 8% of gross revenue), but also by expecting workers to spend around 15% of their time pursuing speculative ideas. Most of these efforts will fail, but some, such as masking tape, an early 3M concept, will generate real profit for the company. The reason why this approach works—and why it has been imitated by other innovative companies such as Google—is because many breakthroughs come when people go beyond their area of expertise. Often it takes an outsider to ask the kind of dumb questions that may bring an unconventional solution.

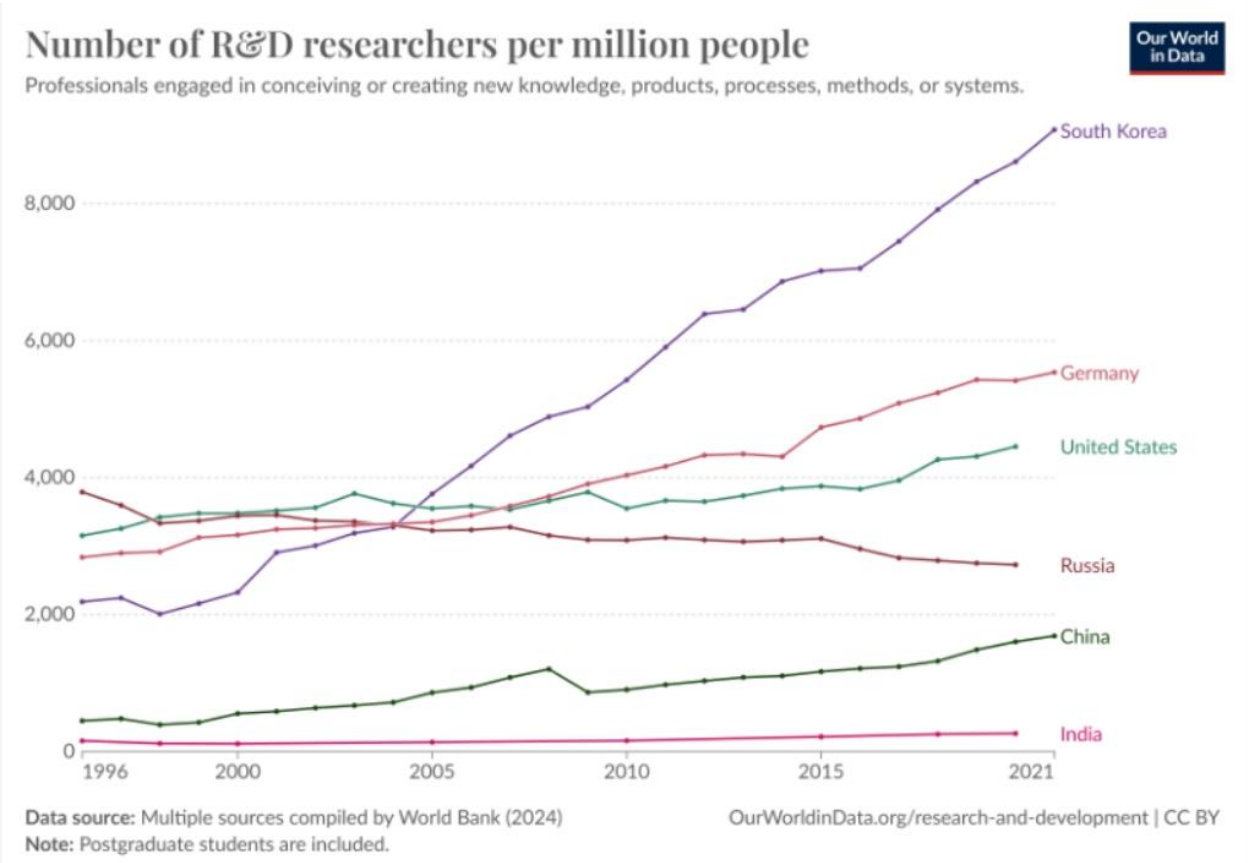
This is why young people tend to be the most innovative thinkers in nearly any field, from physics to music. The ignorance of youth “comes with creative advantages,” writes Mr Lehrer, as the young are less jaded by custom and experience. Still, he reassures readers that anyone can stay creative as long as he works “to maintain the perspective of the outsider”. This can be done by considering new problems at work (3M regularly rotates its engineers from division to division), travelling to new countries or simply spending more time staring “at things we don't fully understand”. This is why cities are such potent sites of productivity, as they expose people to unexpected experiences and force the exchange of ideas.

In his book Mr Lehrer shows that creativity is as less a sign of rare genius than a natural human potential. Mr Lehrer points to William Shakespeare, for example, as someone who was largely a man of his time; the culture of Elizabethan London nurtured quite a few poets—much like ancient Athens gave rise to a number of thinkers and Renaissance Florence inspired many fine artists. Shakespeare knew his way with a pen, but he also lived in a culture that put a premium on ideas,

spread education, introduced new patents for inventions and did not always rigorously enforce censorship laws.

Mr Lehrer concludes with a call for better policy to “increase our collective creativity”. He suggests allowing more immigration, inviting more risk and enabling more cultural borrowing and adaptation. He also warns that the work demands a lot of time, sweat and grit. Or as Albert Einstein put it: “creativity is the residue of time wasted.”

III. Write a paragraph describing the line graph.



4 семестр (весенний) – дифференцированный зачет

Уровень L2

Письменная часть – контрольная работа.

Устная часть – описание инфографики.

Пример заданий в письменной зачетной работе

I. Listen to the extracts of the lecture and complete the table.

	Group	Position	Supporting argument
1	Engineers		
2			
3			
4			

II. A. Read the text and decide which sentence best summarises the main idea.

1. National governments are good at prioritizing, so they should also decide the order in which global problems are dealt with.
2. We cannot deal with all global problems at the same time, therefore we have to find ways of deciding the order in which they are dealt with.
3. The world's major problems are all of equal importance, that's why we should try to deal with them all at the same time.

Why should we prioritize?

Tremendous progress has been made in our lifetimes. People in many countries live longer, healthier lives; air and water quality in the developed world is generally getting better; and a much larger population is being adequately fed.

But there are still many problems to tackle. The minority of us lucky enough to have been born in the developed world take for granted university education, an assured food supply and clean, piped water. Hundreds of millions of people are not so lucky. And although the world's problems fall disproportionately heavily on the developing world, rich countries also have their own problems, including drugs, conflicts and corruption.

When it comes to the globe's toughest issues, policy-makers have a huge list of spending possibilities like a gigantic menu at a restaurant. But this menu comes without prices or serving sizes. If an international agency spends \$10m on one project instead of another, how much more good will it do? Global leaders can rarely answer that question. They need better information and so do ordinary citizens. Economics gives us the tools to look at the costs of taking effective action and measure the expected benefits. When we know the costs and benefits, it will be a lot easier to choose the best projects – the projects which do the most good with the money available.

National governments prioritize all the time. Government revenues are finite and there are many competing demands for expenditure. Responsible economic management means balancing priorities between defense, education, healthcare and welfare. This prioritization is straightforward enough in a democratic state: although the debate may be vigorous and high-pitched, the result is an explicitly acknowledged trade-off between different segments of society and different problem areas for a share of a finite pot of money. There is widespread recognition that governments do not have infinite resources and that they must satisfy important social needs without running unsustainable deficits.

But when we come to global welfare projects, the situation gets murky. We seem to believe that we can achieve anything, that the pool of money is infinite, and that everything should be tackled at once.

In effect, the majority of the big decisions are made by international agencies that receive money from rich nations and use it for the benefit of the world, especially developing countries. Each such organisation has its own sphere of responsibility, scope of work and funding base. But most operate as independent silos. There is a little stimulus for cross-agency comparison. After all, there's little to be gained and to lose of one organization's work turns out to be costlier or less effective than that of other. As a result, there are few attempts to contrast the work of, say, the United Nations Environment Program (UNEP) with that of the United Nations Educational, Scientific and Cultural Organisation (UNESCO), and almost no overt efforts at comparing the outcomes achieved by development charities such as Oxfam and Médecins Sans Frontières.

Of course, in principle we ought to deal with all the world's hardships. We should reduce hunger, end conflicts, stop communicable diseases, provide clean drinking water, step up education and halt climate change. But we don't. We live in a world with limited resources and even more limited attention for our biggest problems.

This means we have to start asking the crucial questions: if we do it all, what should we do first?

II. B. For each of the following extracts decide which of the labels (a-d) best describes the relationship between the first and the second sentence in each extract.

- a. contrast b. example c. expansion d. reason

1. Tremendous progress has been made in our lifetimes. People in many countries live longer, healthier lives; air and water quality in the developed world is generally getting better; and a much larger population is being adequately fed.

2. The minority of us lucky enough to have been born in the developed world take for granted university education, an assured food supply and clean, piped water. Hundreds of millions of people are not so lucky.

3. Global leaders can rarely answer that question. They need better information...

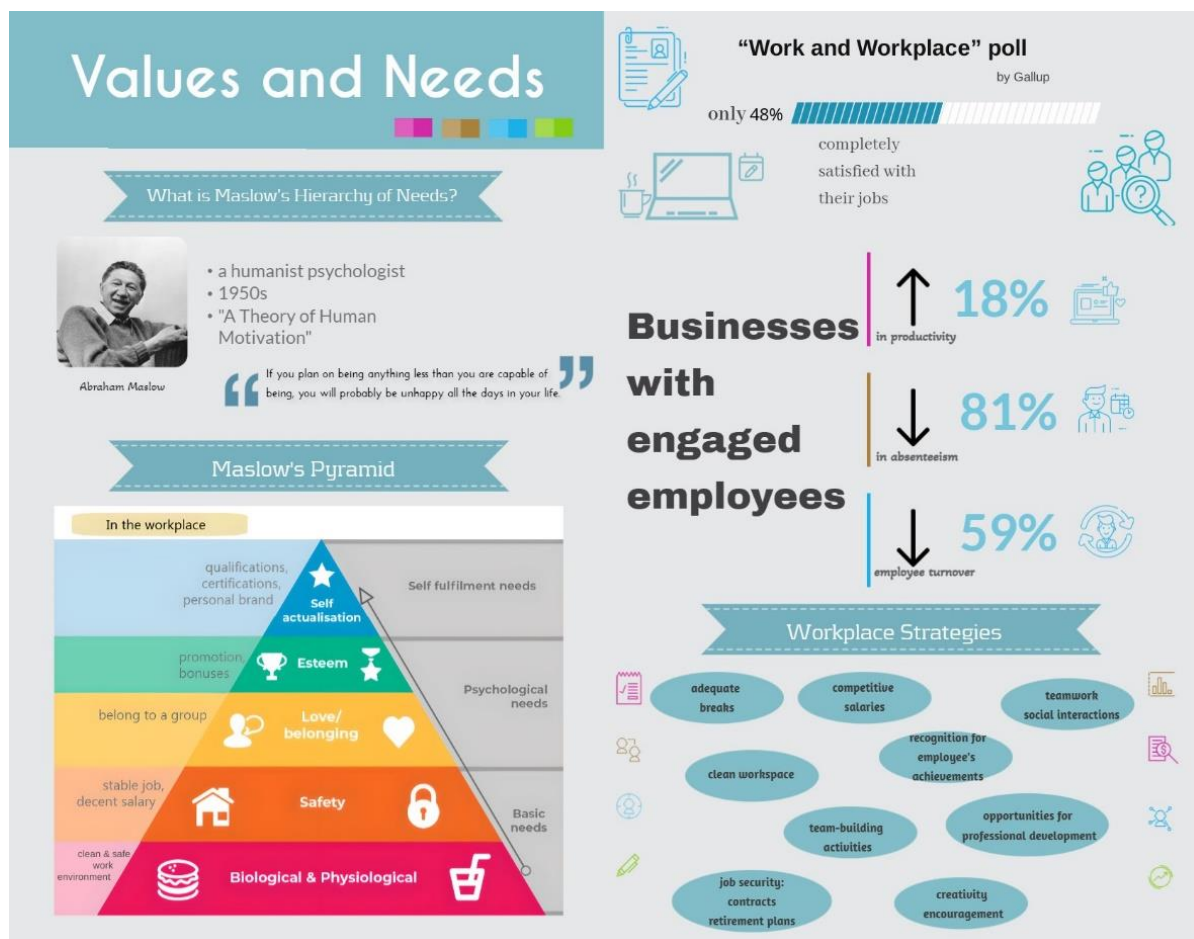
4. Of course, in principle we ought to deal with all the world's hardships. We should reduce hunger, end conflicts, stop communicable diseases...

III. Write a for and against essay on the following topic: The fact that a person is knowledgeable in only one academic field means that this person is not intelligent.

Word limit is 200 words.

Пример заданий в устной зачетной работе.

Study the infographics. Give a short talk (not more than 3-5 minutes) presenting the ideas with sufficient details. Make sure your answer is well structured.



Уровень L 3

Письменная часть – контрольная работа.

Устная часть – описание инфографики.

Пример заданий в письменной зачетной работе.

I. Listen to the talk on multitasking and choose the correct option.

1. What is the main claim about multitasking?
 - A) Multitasking is an essential skill for productivity.
 - B) Multitasking is not real and is actually context switching.
 - C) Multitasking improves cognitive function.
2. How long do most people spend on a task before switching to something else?
 - A) 30 seconds
 - B) 3 minutes
 - C) 10 minutes
3. What does multitasking create in the brain?
 - A) Increased focus
 - B) Enhanced memory retention
 - C) A dopamine addiction feedback loop
4. What term is used to describe the act of switching between tasks?
 - A) Context switching
 - B) Task juggling
 - C) Multi-tasking
5. How much productive time can multitasking destroy?
 - A) 30%
 - B) 50%
 - C) 80%
6. Which of the following tasks is an example of shallow work?
 - A) Organizing emails
 - B) Writing a complex proposal
 - C) Creating social media posts
7. What is a key benefit of distinguishing between deep work and shallow work?
 - A) It allows you to multitask more effectively.
 - B) It helps you strategically schedule when to tackle each type of work.
 - C) It encourages you to focus on shallow tasks to feel productive.

II. Read the text and decide if the statements below are true (T), false (F) or not given (NG).

- 1 Passing on knowledge is at the core of the educational process.
- 2 The deep learning approach is characterised by a focus on understanding the subject matter.
- 3 Students who value hedonism are more likely to adopt a deep learning approach.
- 4 Achievement becomes a more significant element in students' learning approaches as they progress in their studies.
- 5 Value education is currently being introduced into the educational process.

The Role of Personal Values in Learning Approaches and Student Achievements

The impact of personal values on learning approaches and academic achievement is profound. In this context, personal values are the guiding principles that shape an individual's behavior and decision-making processes. In educational contexts, these values significantly influence how students approach learning, which in turn affects their academic achievements.

Education is not merely about imparting knowledge; it is also about fostering personal growth and development. Thus, personal values are central to this process, as they guide students' attitudes towards learning and their academic goals. Understanding how personal values impact learning approaches is crucial for educators seeking to optimize educational outcomes.

Students typically adopt one of three primary learning approaches: achieving, deep, or surface learning. Specifically, the achieving learning approach focuses on achieving high grades and meeting academic expectations. In contrast, the deep learning approach involves a genuine interest in understanding and exploring the subject matter. Students who adopt deep learning seek to integrate new information with existing knowledge and often find intrinsic value in learning. The surface learning approach focuses on memorization and meeting minimum requirements.

Personal values such as achievement, self-direction, and hedonism significantly impact these learning approaches. For example, students who value achievement are more likely to adopt an achieving approach, motivated by the desire for success. Conversely, those who prioritize hedonism may be less inclined towards this approach, as they may view academic rigor as less enjoyable. Values like self-direction and achievement positively influence deep learning, as students who value autonomy and success are more likely to engage deeply with academic material.

Gender and academic discipline can also influence these relationships. For instance, female students may be more inclined towards deep learning due to a stronger emphasis on self-direction and achievement. Similarly, the nature of the academic discipline (e.g., Social Sciences vs. Natural Sciences) can impact these relationships. Students in disciplines requiring more critical thinking and analysis may be more likely to adopt deep learning approaches if they value self-direction.

The relationships between personal values and learning approaches evolve during students' academic journeys. In earlier years, values like stimulation and security may be more influential, while in later years, achievement becomes a dominant factor. This dynamic nature highlights the importance of ongoing support and guidance throughout students' academic careers.

Understanding these dynamics has significant implications for educational practice. Incorporating value education into academic curricula can help students develop personal values that support effective learning strategies. By emphasizing values like self-direction and achievement, educators can foster a deeper engagement with academic material. Recognizing individual differences in personal values allows educators to tailor learning environments and approaches to better suit students' needs, enhancing academic outcomes by aligning learning strategies with students' intrinsic motivations.

III. Write a for and against essay on the following topic: We are born with a definite set of types of intelligence and cannot change our nature.

Word limit is 250 words.

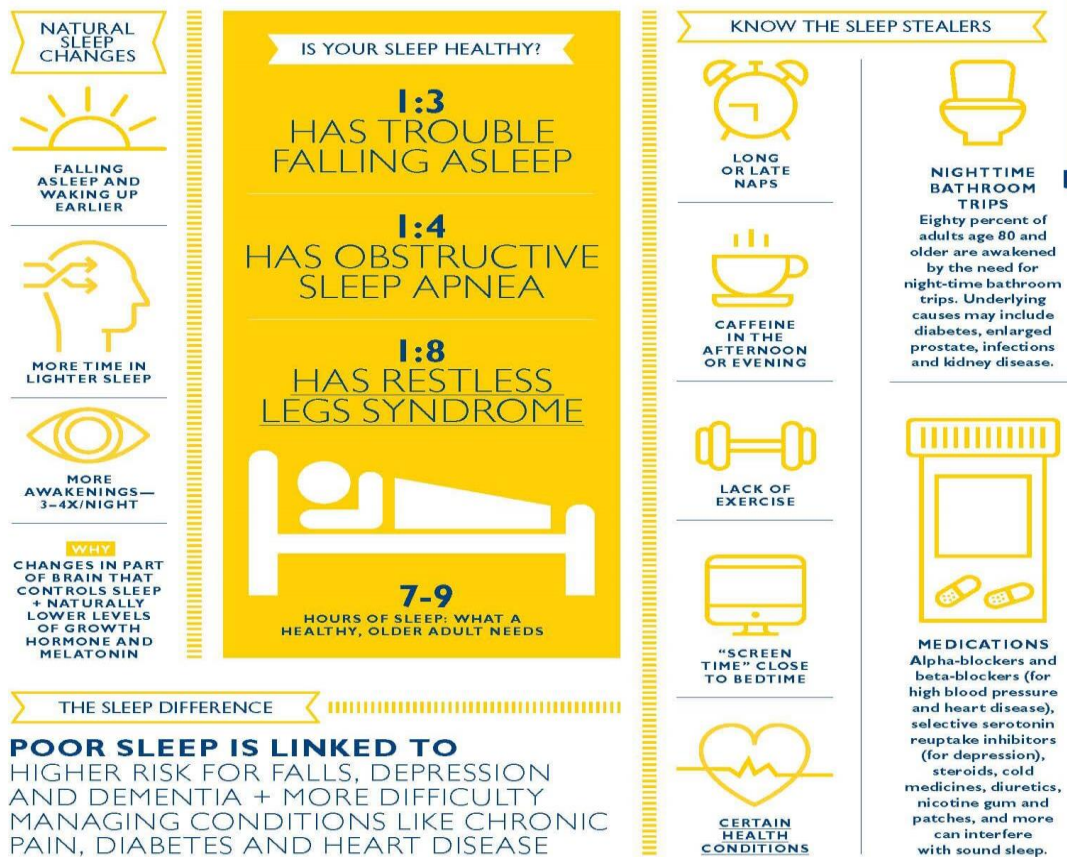
Пример заданий в устной зачетной работе.

Study the infographics. Give a short talk (not more than 5 minutes) presenting the ideas with sufficient details. Make sure your answer is well structured.

SLEEP & AGING

WHAT'S NORMAL?

Aging itself doesn't seem to account for sleep complaints in older adults. If you're not happy with your sleep, talk with your doctor about possible causes and healthy ways to improve it, says Johns Hopkins sleep researcher Adam Spira, Ph.D.



© The Johns Hopkins University, The Johns Hopkins Hospital, and Johns Hopkins Health System. All rights reserved.

Модуль 3. Английский язык для специальных целей (English for Specific Purposes)

3.1. Английский для исследовательских целей (English for Research Purposes)

5 семестр (осенний) – зачет

Примеры заданий

Устная часть:

Подготовить устное монологическое высказывание на две темы, изученные в 5 семестре

Перечень тем:

1. Criteria for being scientific.
2. Peer review types.
3. Typical paper structure.
4. Scientific databases (Scopus, Web of Science, PubMed, РИНЦ)
5. Predatory and well-reputed journals.
6. Science indexes (h-index, impact factor).
7. Research team.
8. Types of visuals in a scientific paper.
9. The most important discovery / invention.
10. A great scientist.
11. Nobel and IgNobel award.
12. Actual trends in academic writing.
13. Steps in academic career: types of degrees; postdoc; tenure.
14. Academia vs industry: pros and cons.
15. Elevator pitch as a genre.
16. Research methods and data collection.

Письменная часть:

Напишите аннотацию простыми словами (Lay Abstract) к научной статье, посвященной актуальной проблеме в Вашей области знаний объемом 150-200 слов. Используйте научный стиль изложения, однако избегайте излишне сложных терминов и профессионального жаргона. Аннотация должна быть понятной и доступной для широкой аудитории.

Пример статьи

npj | microgravity

Perspective

Published in cooperation with the Biodesign Institute at Arizona State University, with

the support of NASA

<https://doi.org/10.1038/s41526-024-00431-2>

Perspectives on the physics of late-type
stars from beyond low earth orbit, the moon and mars



Check

Savita

& Ângela R. G.

Recently stellar physics has gone through a revolution. Interestingly, a large number of exciting discoveries have been made by missions whose main goal was not to study stars themselves, but rather to detect exoplanets around them. In particular, a lot of progress has been reached thanks to the high-quality data collected by space telescopes accurately measuring stellar brightness to detect planetary transits in front of the host star, such as ESA (European Space Agency) CoRoT (Convection, Rotation, and Transits)¹, the NASA (National Aeronautics and Space Administration) Kepler/K2 mission^{2,3}, and now the NASA TESS mission (Transiting Exoplanets Survey Satellite)⁴. For example, they provided new insights into the nature of stellar magnetic activity revealing the connection between stellar photometric variability, rotational period and temperature, see, e.g., refs. 5–8, led to the discoveries of super flares in solar-like

¹ Instituto de Astrofísica de Canarias (IAC), La Laguna, Tenerife, E-38205, Spain. ²Departamento de Astrofísica, Universidad de La Laguna (ULL), La Laguna, Tenerife, E-38206, Spain. ³Instituto de Astrofísica e Ciências do Espaço, Universidade do Porto, Universidade do Porto, CAUP, Rua das Estrelas, Porto, PT4150762, Portugal. e-mail: smathur@iac.es

stars^{9,10} and even allowed probing deep layers of stars thanks to asteroseismology^{11–13}. They also opened a debate on how stars spin down as they age and on how to connect stellar ages

with rotation and magnetic activity^{14–18}. Studies of stellar magnetic activity go in hand with solar physics since they allow us to put the Sun in the context of other stars^{19,20}, and to understand its magnetic past and future²¹, and the resulting environment in the solar system. Indeed, the development of life and habitability can be affected by the magnetism of the host stars, which can contribute to the loss of their atmospheres and change the architecture of the systems, e.g. refs. 22–24. In addition, magnetic activity and rotation can hamper planet detection, e.g., refs. 25.

Another highlight concerns evolved solar-like stars (subgiants and red giants), where thanks to the study of mixed modes, that behave as acoustic modes in stellar envelopes and as gravity modes in the radiative interiors, we can probe the core of those stars, e.g., refs. 26. By studying the pattern of these mixed modes in red giants, we are now able to distinguish between a red giant burning the core, e.g. refs. 27. We can also retrieve information on the stellar rotation in the core of red giants and subgiants, e.g., refs. 28–30. While these are extremely important progresses that were made in the last decade, they open even more questions about the evolution of those stars, in particular on the transport of angular momentum. The current models do not reproduce the observed rates in the cores of subgiants and red giants, highlighting the need to improve the theoretical models though some progress is being made e.g., refs. 31,32.

Stars are the building blocks of the universe. Their precise understanding and characterization is key for the study of the evolution of planetary systems and of our Galaxy (also known as galacto-archeology). Asteroseismology being able to provide stellar fundamental parameters with a high precision is invaluable for these other fields. But to reach such precision on mass, radius, and age, we need to be able to detect individual modes, which requires observations as long as possible with as few gaps as possible in the data.

Future missions led by ESA, PLATO (PLAnetary Transits and Oscillations of stars; scheduled for the end of 2026)³³, and NASA, Roman Space Telescope³⁴, will provide data crucial to advance the field in many of these aspects. Nevertheless, the ESA Human and Robotic Exploration (HRE) would be a great opportunity to go beyond with EUV (extreme ultraviolet) or develop stellar imager instruments for Beyond Low-Earth Orbit (BLEO), the Moon and/or Mars experiments that are not part of any future selected mission so far.

Below, we will first go through the current key knowledge gaps in stellar physics, then discuss the priority for future space programs, and finish with a summary.

Key knowledge gaps

Previous space missions such as CoRoT, Kepler/K2, and now TESS showed and are still showing the power of asteroseismic analyses. While providing new insights into stellar evolution, internal structure, and dynamics of stars from the main sequence (MS) to the red giants (RG), these observations opened new questions. We focus here on key knowledge gaps in late type stars.

Core-envelope coupling in solar-like stars

One of the unexpected findings prompted by Kepler was the bimodality of the rotation-period distribution for stars in the unsaturated regime^{5,35}. This bimodality results in a gap at intermediate rotation and is now known to be related to stellar evolution. Using clusters, for which ages can be accurately determined, the rotation evolution of K stars was found to stall between ages of 0.6 and 1 Gyr¹⁶. While the rotation sequence of young clusters is monotonic with stellar mass, this behavior is not found for old clusters: their rotation sequence exhibits a kink, e.g., refs. 36, 37. The older the cluster the lower the mass where the kink locates. These three observational features are thought to be related.

The most accepted explanation for these observations is a mass dependent core-envelope coupling³⁸. The angular momentum transport between the fast core and the slow envelope during the coupling would result in a temporary stall in the surface spin-down. The observations of the intermediate-rotation gap are consistent with this hypothesis, particularly because it is not observed in fully convective stars³⁹, where a core-envelope coupling would not occur. Nevertheless, to better

map this transition and understand the physical processes behind it, more observations are needed namely for stars or clusters with reliable stellar ages.

Sun in transition

The Kepler observations allowed us to measure the surface rotation of a large sample of MS low- and intermediate-mass stars, e.g., refs. 5,8. These observations also provided the most precise ages for a subsample of stars thanks to asteroseismic studies⁴⁰. By comparing these ages with those computed from gyrochronology relations—empirical relations between stellar rotation and age based on young stars and clusters as well as the Sun—it appeared that the stars of the Kepler field and older than the Sun were rotating faster than expected, e.g., refs. 14,41. One explanation for that observation is that the magnetic braking weakens at some point and thus the star is not slowing down as much as those empirical gyrochronology relations were predicting. One theory put forward is that there is a change in the surface differential rotation, the topology of the surface magnetic field, and the magnetic activity cycle⁴². However, the origin of such weakened magnetic braking is under debate as the current dynamo models do not reproduce the observations. There is also some discussion about an observational bias against old weakly active stars⁴³. However, the fact that rotation obtained from asteroseismology, with the opposite bias, also encounters such behavior⁴⁴ seems to confirm the observed trend. This discovery opens the window to more questions such as: Is the Sun in a transition phase in terms of its magnetic activity? What are the detailed mechanisms in the solar/stellar dynamo? To answer those questions, more observations of the magnetic activity of a large sample of stars, including stars older than the Sun, with precisely known fundamental parameters, as well as long-term observations (many years) of their magnetic activity are required. Given that the Sun might be at the edge of going through this transition, it conveys the importance of the solar-stellar connection to better understand the future of the Sun.

Angular momentum transport

The photometric observations of the CoRoT and Kepler missions provided constraints on the internal rotation of evolved solar-like stars (subgiants and RG) thanks to asteroseismic studies. However, stellar evolution models that include treatment of angular momentum transport do not reproduce the observations: those evolved stars' core rotation is an order of magnitude lower than what is predicted by the models^{31,45}. This suggests that current stellar models lack some physics. Several candidates are proposed (among which internal gravity waves, magnetic field, the existence of a coupling or not between the core and the envelope of stars), and more high-quality observations of solar-like stars at different evolutionary stages are needed. In parallel, some work on the stellar models are investigating this problem e.g., refs. 32, 46,47. Some of the burning questions regarding this topic are the following: how can we reproduce the observed internal rotation profiles? Is there a fossil magnetic field in solar-like stars? What is the interplay between angular momentum transport and magnetic field? Understanding and implementing the detailed processes of angular momentum transport is crucial as this impacts the chemical mixing⁴⁸ and the estimation of stellar ages that are then used in galacto-archeology or exoplanet fields^{49,50}.

Regarding the search for the signature of an internal magnetic field in MS solar-like stars to RG, very exciting discoveries have been made recently. An internal magnetic field can indeed affect the modes, which was studied theoretically, e.g., refs. 51–54. The analysis of the aforementioned mixed modes in Kepler RG showed the signature of that internal magnetic field^{55,56} providing new constraints for stellar models.

Red giant mass loss

It is known that during their evolution RG undergo mass loss. This has been measured by comparing masses of red giants at different evolutionary stages (red-giant branch, RGB, to red clump), e.g. refs. 57,58. However, measurements as a function of different stellar parameters (such as metallicity or luminosity) have not been done, meaning that the detailed mechanisms taking place in the mass-loss process are not well known. Having precise masses determined with asteroseismology is crucial to better understand the mass-loss and how to better implement it in stellar evolution models. The mass-loss in red giants is also important to know the initial masses

of stars, which will impact the age determination. Finally, knowing the mass loss on the red-giant branch can affect the initial conditions that are used for AGB (asymptotic giant branch) and post-AGB stars models, which are populations used for extra-galactic studies.

Evolution of binary stars

Binary stars represent a large fraction of the systems in our Galaxy. Their evolution can have different paths depending on the nature of their interactions. Indeed, these binary stars can have tidal interactions or common envelope evolution that can lead to mergers (also called blue stragglers) e.g., ref. ⁵⁹. A particular class of interacting binaries, known as Heartbeat stars, comprises eccentric binaries, whose tides lead to distortion and excite pulsations, e.g., refs. ^{60,61}. Tidal interactions can also cause enhanced activity in the components of close-in binaries, e.g. ref. ⁶². The investigation of binary systems is thus important to understand the evolution of cluster stars. The study of some clusters through asteroseismology that provides precise mass measurements gave evidence of stars with masses different than expected, e.g., ref. ⁶³ that probably resulted from the mass-transfer between stars in a binary system. Asteroseismic analyses of a large number of binary stars in clusters of different ages and metallicities will bring insights into the modeling of interacting binaries. Combined with radial velocity observations and/or Gaia, this will also contribute to improving our understanding of the evolution of stars in multiple-systems in comparison to single-star evolution. This includes the systems' evolution and associated timescales (e.g. circularization). This will help us to better estimate event rates of binary interaction, initial-mass-ratio/period distributions, and binary population. We still need to measure the efficiency of the transfer of orbital energy of the in spiraling cores to the envelope during the common-envelope phase of evolution. This is key for many binary systems involving black holes, neutron stars, white dwarfs, type Ia-supernovae, X-ray binaries etc.

Combining precise asteroseismic measurements with Gaia recent observations⁶⁴ can also provide interesting constraints on binary systems formation and evolution. Known binary systems with both astrometric data and asteroseismic properties are increasingly providing more statistics to extract information on binary evolution^{65,66}.

Priority for the space programs

Previous missions such as the ESA CoRoT, NASA Kepler then K2, and now TESS provided a large number of observations allowing a big revolution in stellar physics thanks to asteroseismic studies. However, all those missions were mostly designed for planet search and the sample selection function was biased. For instance, the observations of the Kepler telescope had a bias towards low-metallicity^{67,68}, and not many clusters were observed because of the crowding and difficulties in doing the follow-up for exoplanet confirmation. To better answer the key knowledge gaps listed above, we would need to study simpler populations, with a broad range of stellar parameters in order to understand the impact of each of them on the evolution of stars.

Having a full comprehension of how the magnetic activity of stars changes over time will greatly influence exoplanet research. This understanding is crucial for enhancing the detection of exoplanets (in particular Earth-like planets around Sun-like stars) through methods like radial velocity measurements or transit photometry and spectroscopy. The presence of spots on stars and their magnetic behavior can sometimes mimic the signals we expect from exoplanets, making it essential to differentiate between the two accurately. Given the current and future programs to search and characterize exoplanets with extreme precision radial velocity instruments as well as space-based transit photometry, studying the magnetic activity of a large sample of stars is of paramount importance for both stellar and exoplanet fields. This will also contribute to our knowledge of how planetary systems and their potential habitability evolve.

Photometric observations for asteroseismology

Obtaining precise stellar parameters and information on the surface and internal structure and dynamics of solar-like stars from the MS up to the RGB will allow us to tackle all the key knowledge gaps mentioned above. To take out the most of the seismic information from photometric observations we require a high photometric precision in the brightness measurement. More precise radius, mass, and age can be obtained when individual modes are detected. This

requires long and continuous observations of several months, which cannot be done from the ground. The 4 years of the Kepler observations showed the importance of asteroseismology in providing precise stellar parameters. Kepler, with a projected pixel size of 4 in. and a point spread function (PSF) of 21 in., collected the best data set for seismic characterization so far. Furthermore, for the detection of modes in MS solar-like stars, a high cadence (at least 1 min as the modes are above a frequency of 1 mHz) is required for at least 1 year. This would yield a proper characterization of the modes in MS stars and the detection of the effect of rotation on them. For more evolved subgiants and RG, a cadence of 10 and 30 min, respectively, for at least 3 months would be enough to detect and characterize the modes. While continuous observations ease the process, gaped data are still useful⁶⁹. However, Kepler observed only one fixed field. TESS overcame this by performing an almost full-sky survey. Given the 27-day sector length and the lower precision of TESS, detection of solar-like oscillations in MS stars has been challenging^{70,71}. Moreover, the TESS projected pixel size is 20 in. (PSF of 84 in.), making its observations prone to contamination by nearby targets. With the incoming PLATO mission, we expect a step forward with several thousands of solar-like stars with high signal-to-noise seismic detection⁷², where the noise level is around 50 ppm $\text{h}^{1/2}$, slightly higher than for Kepler. This would be our reference upper limit for the proposed missions. Nevertheless, one restriction of PLATO is the pixel size of 15 in. (PSF of 37 in.), which prevents resolving stars, particularly in clusters (globular or open). A white paper proposing the mission HAYDN was submitted for the ESA Voyage 2050 long-term plan⁷³. HAYDN would not only be a dedicated mission to investigate stellar clusters but also the Milky Way's bulge and neighboring dwarf galaxies. Comparatively, with previous missions, HAYDN's projected pixel size would be 1 in. with a PSF of 1.3 in., which was estimated to be the minimum requirement for avoiding contamination by nearby sources in crowded fields. While selected for phase 0 of the ESA M7 call, it was not selected for phase A. HAYDN will be proposed in the next ESA M8 call. Nevertheless, having observations in the meantime would prevent long periods without data.

EUV and X-rays observations

The study of stellar magnetic activity requires long-term observations. In particular, they would allow the detection of full cycles that could be longer than a decade for a star like the Sun (and even longer for more evolved and hotter stars), improve our knowledge of the processes governing solar and stellar dynamo. A few hundred stars have been monitored from the ground but having both magnetic activity and precise stellar parameters from asteroseismology will provide key information to understand the detailed mechanisms involved in the magnetic activity of the Sun and stars. Studying magnetic activity can be done in different wavelengths. One very useful wavelength is the EUV as it allows us to study flares and coronal mass ejections in other stars. So far, the Extreme Ultraviolet Explorer (EUVE) was the only observatory that has extensively done spectroscopic observations in that wavelength. No other observations will be done in the future and this will bring a gap in our study of stellar magnetism. So, it is very critical to have such a telescope planned in the future. Observations in X-rays can also provide another way of studying the magnetic activity of many stars. Such observations would help us address the key knowledge gaps on the intermediate-rotation gap ("Core-envelope coupling in solar-like stars"), the Sun in transition ("Sun in transition") and angular momentum transport ("Angular momentum transport").

Stellar imager

Another phenomenon related to stellar magnetic activity is the presence of spots that are not well studied in stars other than the Sun. From their evolution, lifetime, differential rotation, active latitudes, very little is known on star spots, except for the information from spectropolarimetry. Being able to resolve stellar surfaces can allow us to answer many questions on stellar magnetism. For instance, obtaining information on active latitudes and differential rotation can provide hints to investigate the key knowledge gaps on the intermediate-rotation gap ("Core-envelope coupling in solar-like stars"), the Sun in transition ("Sun in transition") and the angular momentum transport ("Angular momentum transport") by better constraining dynamo

models. Observations over at least a decade would be useful to study the evolution of spots over a magnetic cycle, such as the 11-yr cycle of the Sun. An idea, the StellarImager⁷⁴, was suggested and proposed to NASA that involved a UV-optical Fizeau interferometer with 20 or 30 1-m mirrors in a flying formation. The length of the interferometer could be up to 10 km. Being able to build such an interferometer on the Moon (and maybe Mars) would be an amazing opportunity.

Multi-wavelength simultaneous observations for stellar magnetic activity

The magnetically-driven variability of Sun-like stars is caused by dark spots and bright facular regions transiting stellar disks as stars rotate. White-light observations (e.g. performed by Kepler and TESS and planned for PLATO) do not allow distinguishing between variations brought by facular regions and by spots^{75,76}. This significantly hinders the determination of rotation periods of slow rotators like the Sun since the interplay between spot and facular contributions to brightness variations of such stars causes irregularities in their light curves. The difficulties in detecting periods of slowly rotating stars might be an important contributor to the explanation of the lower-than-expected number of observed G-type stars with near-solar rotation periods and also hampers the solar-stellar comparison studies^{8,43}. Monitoring of stellar brightness in several spectral passbands, i.e. multicolor photometry will circumvent this limitation of white-light observations. Indeed, the monochromatic facular contrast decreases strongly with the wavelength, while the spot contrast does not show such a pronounced dependence⁷⁶. As a result, stellar brightness variability is expected to be faculae-dominated in the UV and spot-dominated in the visible spectral domain (e.g. solar rotational variability is faculae-dominated short ward of 400 nm and spot-dominated longword of 400 nm). Consequently, simultaneous monitoring of stellar brightness in the UV and visible spectral domains will allow separating spot and facular contributions to stellar brightness variations. Not only will this lead to a more reliable determination of stellar rotation periods but also to a better understanding of stellar magnetic activity in general, providing answers for the key knowledge gaps onthecore-envelopecoupling(“Core-envelopecouplinginsolar-likestars”), the Sun in transition (“Sun in transition”), and angular momentum transport evolution (“Angular momentum transport”). Furthermore, stellar intrinsic variability depends on wavelengths in a different way than photometric signatures of the planetary transits. Consequently, multi-color photometry can facilitate the distinction between intrinsic variability and planetary transits, which would lead to a more reliable detection and characterization of exoplanets.

The proposed missions to study stellar magnetic activity would require several years of observations spanning at least a decade to study cycles and a cadence of at least 4 h.

All the proposed experiments are summarized in Table 1.

Table 1 / Recommendations for addressing key questions in stellar physics with the ESA HRE program in the short, middle, and long term

Open fundamental scientific question	Focus of the ESA experiment	Related recent and future space experiments	Short, Middle or long term
Is the the Sun in a transition phase in terms of its magnetic activity?	Moon, Mars, BLEO	CoRoT, Kepler, TESS, PLATO	Middle: photometer (UV+vis.) >1 yr obs., ~1 min cad. EUV and X-rays Simultaneous to photometric Long: an instrument similar to the proposed Stellar imager that requires more technical and engineering developments. >10yr obs.

How does mass loss operate in red giants?	Moon, Mars, BLEO	Kepler, K2, TESS, PLATO Roman	Middle: photometer (UV+vis.) >1yr obs. ~30 min cad.
How does the angular momentum transport evolve in low-mass stars from MS to RG?	Moon, Mars, BLEO	CoRoT, Kepler, PLATO	Middle: photometer (UV+vis.) EUV and X-rays >2yr obs. ~ min cad.
How do binary systems evolve?	Moon, Mars, BLEO	Kepler, K2, TESS, PLATO	Middle: photometer (visible). >1 yr obs. ~30 min cad.

Future outlook and summary

We described the different recommendations of future possible experiments within the ESA's Human Robotic Exploration program in order to fill key knowledge gaps and answer key questions in stellar physics. These experiments can be set up in low Earth orbit and on the Moon or Mars and mostly within 10 years from now. Combined with already planned missions, the HRE program will tremendously contribute to a leap forward in our understanding of how stars' dynamics and structure evolve, impacting other fields such as exoplanet characterization and galacto-archeology.

Received: 8 February 2024; Accepted: 19 September 2024

References

1. Baglin, A., Michel, E., Auvergne, M. & The COROT Team. The seismology programme of the CoRoT space mission, Vol. 624 of ESA Special Publication (2006).
2. Borucki, W. J. et al. Kepler planet-detection mission: introduction and first results. *Science* 327, 977– (2010).
3. Howell, S. B. et al. The K2 mission: characterization and early results. *Publ. Astron. Soc. Pac.* 126, 398–408 (2014).
4. Ricker, G. R. et al. Transiting Exoplanet Survey Satellite (TESS). *J. Astron. Telesc. Instrum. Syst.* 1, 014003 (2015).
5. McQuillan, A., Mazeh, T. & Aigrain, S. Rotation periods of 34,030 Kepler main-sequence stars: the full autocorrelation sample. *Astrophys. J. Suppl. Ser.* 211, 24 (2014).
6. Reinhold, T., Bell, K. J., Kuszlewicz, J., Hekker, S. & Shapiro, A. I. Transition from spot to faculae domination. An alternate explanation for the dearth of intermediate Kepler rotation periods. *Astron. Astrophys.* 621, A21 (2019).
7. Santos, A. R. G. et al. Surface rotation and photometric activity for Kepler targets. I. M and K Main-sequence Stars. *Astrophys. J. Suppl. Ser.* 244, 21 (2019).
8. Santos, A. R. G., Breton, S. N., Mathur, S. & García, R. A. Surface rotation and photometric activity for Kepler targets. II. G and F mainsequence stars and cool subgiant stars. *Astrophys. J. Suppl. Ser.* 255, 17 (2021).
9. Maehara, H. et al. Superflares on solar-type stars. *Nature* 485, 478–481 (2012).
10. Okamoto, S. et al. Statistical properties of superflares on solar-type stars: results using all of the Kepler primary mission data. *Astrophys. J.* 906, 72 (2021).
11. García, R. A. & Ballot, J. Asteroseismology of solar-type stars. *Living Rev. Sol. Phys.* 16, 4 (2019).
12. Aerts, C. Probing the interior physics of stars through asteroseismology. *Rev. Mod. Phys.* 93, 015001 (2021).

13. Kurtz, D. W. Asteroseismology across the Hertzsprung-Russell diagram. *Annu. Rev. Astron. Astrophys.* 60, 31–71 (2022).
14. van Saders, J. L. et al. Weakened magnetic braking as the origin of anomalously rapid rotation in old field stars. *Nature* 529, 181–184 (2016).
15. Barnes, S. A., Weingrill, J., Fritzewski, D., Strassmeier, K. G. & Platais, I. Rotation periods for cool stars in the 4 Gyr old open cluster M67, the solar-stellar connection, and the applicability of gyrochronology to at least solar age. *Astrophys. J.* 823, 16 (2016).
16. Curtis, J. L., Agüeros, M. A., Douglas, S. T. & Meibom, S. A temporary epoch of stalled spin-down for low-mass stars: insights from NGC 6811 with Gaia and Kepler. *Astrophys. J.* 879, 49 (2019).
17. Gruner, D., Barnes, S. A. & Weingrill, J. New insights into the rotational evolution of near-solar age stars from the open cluster M 67. *Astron. Astrophys.* 672, A159 (2023).
18. Mathur, S. et al. Magnetic activity evolution of solar-like stars. I. S_{phage} relation derived from Kepler observations. *Astrophys. J.* 952, 131 (2023).
19. Reinhold, T. et al. The Sun is less active than other solar-like stars. *Science* 368, 518–521 (2020).
20. Santos, A. R. G. et al. Temporal variation of the photometric magnetic activity for the Sun and Kepler solar-like stars. *Astron. Astrophys.* 672, A56 (2023).
21. Lorenzo-Oliveira, D. et al. The Solar Twin Planet Search. The age-chromospheric activity relation. *Astron. Astrophys.* 619, A73 (2018).
22. Kaltenegger, L. How to characterize habitable worlds and signs of life. *Annu. Rev. Astron. Astrophys.* 55, 433–485 (2017).
23. Rodríguez-Mozos, J. M. & Moya, A. Erosion of an exoplanetary atmosphere caused by stellar winds. *Astron. Astrophys.* 630, A52 (2019).
24. Elsaesser, A. et al. Future space experiment platforms for astrobiology and astrochemistry research. *npj Microgravity* 9, 43 (2023).
25. Oshagh, M. et al. Effect of stellar spots on high-precision transit lightcurve. *Astron. Astrophys.* 556, A19 (2013).
26. Beck, P. G. et al. Kepler detected gravity-mode period spacings in a red giant star. *Science* 332, 205– (2011).
27. Bedding, T. R. et al. Gravity modes as a way to distinguish between hydrogen- and helium-burning red giant stars. *Nature* 471, 608–611 (2011).
28. Beck, P. G. et al. Fast core rotation in red-giant stars as revealed by gravity-dominated mixed modes. *Nature* 481, 55–57 (2012).
29. Deheuvels, S. et al. Seismic constraints on the radial dependence of the internal rotation profiles of six Kepler subgiants and young red giants. *Astron. Astrophys.* 564, A27 (2014).
30. Gehan, C., Mosser, B., Michel, E., Samadi, R. & Kallinger, T. Core rotation braking on the red giant branch for various mass ranges. *Astron. Astrophys.* 616, A24 (2018).
31. Ceillier, T., Eggenberger, P., García, R. A. & Mathis, S. Understanding angular momentum transport in red giants: the case of KIC 7341231. *Astron. Astrophys.* 555, A54 (2013).
32. Eggenberger, P., Moyano, F. D. & den Hartogh, J. W. Rotation in stellar interiors: general formulation and an asteroseismic-calibrated transport by the Tayler instability. *Astron. Astrophys.* 664, L16 (2022).
33. Rauer, H. et al. The PLATO 2.0 mission. *Exp. Astron.* 38, 249–330 (2014).
34. Wilson, R. F. et al. Transiting exoplanet yields for the roman galactic bulge time domain survey predicted from pixel-level simulations. *Astrophys. J. Suppl. Ser.* 269, 5 (2023).
35. McQuillan, A., Aigrain, S. & Mazeh, T. Measuring the rotation period distribution of field M-dwarfs with Kepler. *MNRAS* 432, 1203–1216 (2013).
36. Dungee, R. et al. A 4 Gyr M-dwarf gyrochrone from CFHT/MegaPrime monitoring of the open cluster M67. *Astrophys. J.* 938, 118 (2022).
37. Bouma, L. G., Palumbo, E. K. & Hillenbrand, L. A. The empirical limits of gyrochronology. *Astrophys. J.* 947, L3 (2023).

38. Spada, F. & Lanzafame, A. C. Competing effect of wind braking and interior coupling in the rotational evolution of solar-like stars. *Astron. Astrophys.* 636, A76 (2020).
39. Lu, Y. L., Curtis, J. L., Angus, R., David, T. J. & Hattori, S. Bridging the gap-the disappearance of the intermediate period gap for fully convective stars, uncovered by new ZTF rotation Periods. *Astron. J.* 164, 251 (2022).
40. Silva Aguirre, V. et al. Standing on the shoulders of dwarfs: the Kepler asteroseismic LEGACY Sample. II. Radii, masses, and ages. *Astrophys. J.* 835, 173 (2017).
41. Angus, R., Aigrain, S., Foreman-Mackey, D. & McQuillan, A.
Calibrating gyrochronology using Kepler asteroseismic targets. *MNRAS* 450, 1787–1798 (2015).
42. Metcalfe, T. S., Egeland, R. & van Saders, J. Stellar evidence that the solar dynamo may be in transition. *Astrophys. J. Lett.* 826, L2 (2016).
43. Reinhold, T. et al. Where have all the solar-like stars gone? Rotation period detectability at various inclinations and metallicities. *Astrophys. J. Lett.* 908, L21 (2021).
44. Hall, O. J. et al. Weakened magnetic braking supported by asteroseismic rotation rates of Kepler dwarfs. *Nat. Astron.* 5, 707–714 (2021).
45. Eggenberger, P., Montalbán, J. & Miglio, A. Angular momentum transport in stellar interiors constrained by rotational splittings of mixed modes in red giants. *Astron. Astrophys.* 544, L4 (2012).
46. Eggenberger, P. et al. Asteroseismology of evolved stars to constrain the internal transport of angular momentum. I. Efficiency of transport during the subgiant phase. *Astron. Astrophys.* 621, A66 (2019).
47. Eggenberger, P. et al. Asteroseismology of evolved stars to constrain the internal transport of angular momentum. II. Test of a revised prescription for transport by the Tayler instability. *Astron. Astrophys.* 631, L6 (2019).
48. Pinsonneault, M. H., Kawaler, S. D., Sofia, S. & Demarque, P.
Evolutionary models of the rotating sun. *Astrophys. J.* 338, 424 (1989).
49. Silva Aguirre, V. et al. Ages and fundamental properties of Kepler exoplanet host stars from asteroseismology. *MNRAS* 452, 2127–2148 (2015).
50. Pinsonneault, M. H. et al. The second APOKASC catalog: the empirical approach. *Astrophys. J. Suppl. Ser.* 239, 32 (2018).
51. Goode, P. R. & Thompson, M. J. The effect of an inclined magnetic field on solar oscillation frequencies. *Astrophys. J.* 395, 307–315 (1992).
52. Bugnet, L. et al. Magnetic signatures on mixed-mode frequencies. I.
An axisymmetric fossil field inside the core of red giants. *Astron. Astrophys.* 650, A53 (2021).
53. Loi, S. T. Topology and obliquity of core magnetic fields in shaping seismic properties of slowly rotating evolved stars. *MNRAS* 504, 3711–3729 (2021).
54. Mathis, S. et al. Probing the internal magnetism of stars using asymptotic magneto-asteroseismology. *Astron. Astrophys.* 647, A122 (2021).
55. Li, G., Deheuvels, S., Ballot, J. & Lignières, F. Magnetic fields of 30 to 100 kG in the cores of red giant stars. *Nature* 610, 43–46 (2022).
56. Deheuvels, S., Li, G., Ballot, J. & Lignières, F. Strong magnetic fields detected in the cores of 11 red giant stars using gravity-mode period spacings. *Astron. Astrophys.* 670, L16 (2023).
57. Miglio, A. et al. Asteroseismology of old open clusters with Kepler: direct estimate of the integrated red giant branch mass-loss in NGC 6791 and 6819. *MNRAS* 419, 2077–2088 (2012).
58. Salaris, M., Cassisi, S. & Pietrinferni, A. On the red giant branch mass loss in 47 Tucanae: constraints from the horizontal branch morphology. *Astron. Astrophys.* 590, A64 (2016).
59. Brady, K. E. et al. M67 blue stragglers with high-resolution infrared spectroscopy. *Astron. J.* 166, 154 (2023).

60. Thompson, S. E. et al. A class of eccentric binaries with dynamic tidal distortions discovered with Kepler. *Astrophys. J.* 753, 86 (2012).
61. Kołaczek-Szymański, P. A., Pigulski, A., Michalska, G., Moździerski, D. & Różański, T. Massive heartbeat stars from TESS. I. TESS sectors 1-16. *Astron. Astrophys.* 647, A12 (2021).
62. Basri, G., Laurent, R. & Walter, F. M. Stellar activity in synchronized binaries. I. Dependence on rotation. *Astrophys. J.* 298, 761–771 (1985).
63. Basu, S. et al. Sounding open clusters: asteroseismic constraints from Kepler on the properties of NGC 6791 and NGC 6819. *Astrophys. J. Lett.* 729, L10 (2011).
64. Gaia Collaboration. et al. Gaia Early Data Release 3. Summary of the contents and survey properties. *Astron. Astrophys.* 649, A1 (2021).
65. Beck, P. G. et al. 99 oscillating red-giant stars in binary systems with NASA TESS and NASA Kepler identified from the SB9-Catalogue. *Astron. Astrophys.* 667, A31 (2022).
66. Beck, P. G. et al. Constraining stellar and orbital co-evolution through ensemble seismology of solar-like oscillators in binary systems. A census of oscillating red giants and dwarf stars in Gaia DR3 binaries. *Astron. Astrophys.* 682, A7 (2024).
67. Cat, P. D. et al. LAMOST observations in the Kepler field. I. Database of low-resolution spectra. *Astrophys. J. Suppl. Ser.* 220, 19 (2015).
68. Mathur, S. et al. Revised stellar properties of Kepler targets for the Q117 (DR25) transit detection run. *Astrophys. J. Suppl. Ser.* 229, 30 (2017).
69. González-Cuesta, L. et al. Multi-campaign asteroseismic analysis of eight solar-like pulsating stars observed by the K2 mission. *Astron. Astrophys.* 674, A106 (2023).
70. Huber, D. et al. A 20 second cadence view of solar-type stars and their planets with TESS: asteroseismology of solar analogs and a recharacterization of π Men c. *Astron. J.* 163, 79 (2022).
71. Hatt, E. et al. Catalogue of solar-like oscillators observed by TESS in 120-s and 20-s cadence. *Astron. Astrophys.* 669, A67 (2023).
72. Goupil, M. J. et al. Predicted asteroseismic detection yield for solarlike oscillating stars with PLATO. *Astron. Astrophys.* 683, A78 (2024).
73. Miglio, A. et al. *Haydn. Exp. Astron.* 51, 963–1001 (2021).
74. Carpenter, K. G. et al. Stellar Imager (SI): developing and testing a predictive dynamo model for the Sun by imaging other stars. *ArXiv e-prints* (2010).
75. Shapiro, A. I., Solanki, S. K., Krivova, N. A., Yeo, K. L. & Schmutz, W. K. Are solar brightness variations faculae- or spot-dominated? *Astron. Astrophys.* 589, A46 (2016).
76. Li, C. & Basri, G. Do faculae affect autocorrelation rotation periods in sun-like stars? *ApJ* 963, 102 (2024).
77. Bertone, G. et al. White Paper #02: Astrophysics. ESA SciSpaceE White Paper. https://esamultimedia.esa.int/docs/HRE/02_PhysicalSciences_Astrophysics.pdf (2021).

Acknowledgements

The authors thank the European Space Agency for the opportunity to contribute this perspective article, based on the Stellar Physics section of the Astrophysics SciSpaceE White paper⁷⁷. S.M. acknowledges support by the Spanish Ministry of Science and Innovation with the Ramon y Cajal fellowship number RYC-2015-17697, the grant number PID2019107187GB-I00, and the grant no. PID2019-107061GB-C66. A.R.G.S. acknowledges the support from the FCT through national funds and FEDER through COMPETE2020 (UIDB/04434/2020, UIDP/04434/2020 and 2022.03993.PTDC) and the support from the FCT through the work contract No. 2020.02480.CEECIND/CP1631/CT0001.

Author contributions

S.M. contributed to the ESA science community white paper related to this topic. S.M. and A.R.G.S. adapted and extended the text to form this perspective paper.

Competing interests
The authors declare no competing interests.

Additional information

Correspondence and requests for materials should be addressed to Savita Mathur.
Reprints and permissions information is available at <http://www.nature.com/reprints>
© The Author(s) 2024

6 семестр (весенний) – дифференцированный зачет

Примеры заданий

Устная часть:

Подготовить устное монологическое высказывание на две темы, изученные в 6 семестре

Перечень тем:

1. Editing vs proofreading.
2. Typical research paper structure. Obligatory and optional sections.
3. Types of research abstracts. Lay abstract. Visual abstract.
4. Science communication as a trend.
5. Speech devices for scientific storytelling.
6. Bias and p-hacking in research.
7. Plagiarism, self-plagiarism and ways to avoid it.
8. Quoting, paraphrasing, citing and referencing.
9. Literature review as a genre.
10. Features of academic style.
11. Hedging and boosting in academic writing.
12. Roles in a research team.

Письменная часть:

Напишите научный пресс релиз / критический обзор научной статьи, посвященной актуальной проблеме в Вашей области знаний объемом 200-250 слов, соблюдая правила написания данных видов академического письма.

Пример статьи



Available online at www.sciencedirect.com

ScienceDirect

Procedia CIRP 94 (2020) 217–221

www.elsevier.com/locate/procedia

11th CIRP Conference on Photonic Technologies [LANE 2020] on
September 7-10, 2020

Mechanical properties of NiCrBSi self-fluxing alloy after LPBF with additional heating

Igor Shishkovsky^{a,*}, Nina Kakovkina^b, Vladimir Sherbakof^a

^aCenter for Design, Manufacturing and Materials (CDMM), Skolkovo

Institute of Science and Technology, Moscow 121205, Russia ^bLebedev Physics

Institute (LPI) of Russian Academy of Sciences, Samara 443011, Russia

* Corresponding author. Tel.: +7-495-280-1481ext 3455; fax: +7-495-280-1481. E-mail address: I,Shishkovsky@skoltech.ru



Abstract

The study was devoted to a detailed experimental study of the implementation conditions of the laser powder bed fusion (LPBF) process of special-purpose products from self-fluxing powdered high-temperature NiCrBSi composite. Optimal regimes of LPBF for the 3D part of the simplest shape were experimentally determined. We recommended laser power $P = 100$ W, the laser scanning velocity is $v = 10$ cm / s, the beam diameter is $70\text{ }\mu\text{m}$, process gone in argon. Additional efforts were made to evaluate the effect of additional heating the base platform up to $500\text{ }^{\circ}\text{C}$. Optical and scanning electron microscopy, the X-ray diffraction analysis and EDS microanalysis were used for describing the sequence of structure formation in the created 3D samples. We conducted mechanical and tribological testing allowed to evaluate the relationship between the laser PBF parameters and data on linear wear, roughness, fracture rupture for 3D from NiCrBSi super alloy after the laser PBF process. Possible causes of increase crack formation during the LPBF of the NiCrBSi powder system are considered and revealed.

Keywords: laser powder bed fusion (LPBF); nickel-crome super alloy; additional heating,

1. Introduction

PGSR-4 is a Ni-base super alloy which can be used in laser additive manufacturing (powder bed fusion (PBF) and direct metal deposition (DMD)) [1-3]. Self-fluxing nickel super alloy PGSR-4 (16 % Cr, 2 % B, 3 % Si, <5 % Fe, 1% C, 0.04% P, 0.04 % S, Ni bal., % wt) is considered to be six-component, hot resistant and refers to multiphase systems. The alloy is mixture of low-melting eutectic based on Ni, a solid solution of Cr, B, and Si in nickel with carbide inclusions, which makes it attractive for aerospace applications [2-6]. It is known that the distribution of carbide, boride, and silicide inclusions in the main phase with a Ni-based solid structure with an fcc (γ phase) lattice has a complex character [2, 5, 6]. However, NiCrBSi alloy prone to microcracking during the LPBF process [2, 3]. Low ductility is explained by the conditions of cross-boundary grain cracking at the temperature range from $0.5T_m$ to $0.7T_m$ [2], where pinning by carbides, borides and silicides by boundaries play important role. So, we strongly recommended to significantly raise the temperature (up to $500\text{--}700\text{ }^{\circ}\text{C}$) in the synthesis chamber in order to improve the manufacturability and reproducibility of 3D products and also to avoid the tendency to cracking [5, 6]. Influence of additional heating during the LPBF process was the goal of this study. Microstructure, phase structure, mechanical and tribological properties of the NiCrBSi alloy fabricated through LPBF are carried out.

2. Materials and methods

Powder of the NiCrBSi alloy was chosen with a dispersion of $60\text{--}80\text{ }\mu\text{m}$. The distribution of all the aforementioned powders by size was analyzed by means of an optical granulomometer ALPAGA 500NANO (OCCHIO Belgium). The LPBF was performed on the ILM-100B ytterbium laser (IPG, Frazino, RF). Our SLM laboratory setup at the LPI was equipped with a high-temperature chamber, the temperature in which could reach $500\text{--}800\text{ }^{\circ}\text{C}$ due to symmetrically arranged ceramic heaters. The temperature was measured by a thermocouple method. The LPBF setup was described earlier in [3, 6].

The optimized hatching distance was equal to the laser beam diameter $d_b = 70\text{ }\mu\text{m}$, layer thickness H was ~ 0.2 mm. The laser scan velocity V ranged from 0.5 to 10 cm/s, laser power P from 10 to 100 W. Two regimes of manufacturing have been studied on the substrate - chamber additional heating up to $500\text{ }^{\circ}\text{C}$ and without it. Each second layer was formed on the bottom layer after its turning by 90 degrees (L – longitudinal, T transversal). The laser melting process was conducted in Ar gas-filled chamber in order to protect the samples against oxidation and nitration.

After the etching, cross sections of the multi-layered melting samples were subjected to microstructural analysis with the optical microscope (Neophot 30M, Carl Zeiss, Germany) equipped with a digital camera. The 3D samples obtained under the optimized regimes were analyzed by PMT3M (OKB SPECTR Ltd., St. Petersburg, Russia), microhardness testing and scan electron microscopy LEO 1450 (Carl Zeiss Company) equipped with an energy-dispersive X-ray microanalyzer (INCA Energy 300, Oxford Instruments, UK). The phase composition of the

SLM parts was determined by XRD using a DRON-3M (Bourestnik Inc., St. Petersburg, RF) diffractometer in Co- K_{α} radiation.

The universal complex Universal-1B (Samara-Balance Ltd., RF) was used for the tribomechanical tests, which included roughness behavior and wear fatigue by scheme (ring-plate sliding friction). As the material for the control sample, highspeed steel P6M5 (in the tempering state HRC65) was selected. Opportunities of Universal-1B setup were described precisely in [7].

3. Results and discussion

Previously, we experimentally determined the optimal LPBF regimes for individual passages of the NiCrSiB alloy, the regime of layerwise fabrication during scanning with a laser beam along the meander and a meander rotation by 90° on each subsequent layer [5, 6]. However, now, all of the above scanning techniques were carried out but with the platform heated up to $T = 500^{\circ}\text{C}$. The results of the obtained structures were compared when the treatment was carried out without heating.

Figure 1 shows the sample (disk) appearance from the NiCrBSi alloy after the LPBF (laser regime was $P = 100\text{ W}$; $v = 10\text{ cm/s}$; powder layer thickness $s = 0.1\text{ mm}$; track distance $l = 0.2\text{ mm}$; beam diameter 0.2 mm). Additive manufacturing process was realized in argon and the chamber with the powder composition was warmed up to 500°C .

The surface roughness of the 3D printed samples after combining LPBF with heating is different from the LPBF without heating. The external shape of the products practically does not change, however, after 3D printing without heating, we clearly fixed the shrinkage of the 3D part in height. In addition, the edges of the disk had a smoothed character due to high-temperature heating.

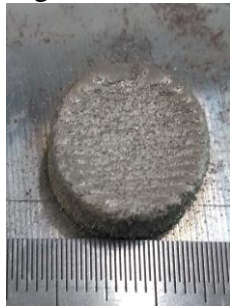


Fig. 1. LPBF of the NiCrBSi alloy (top view)

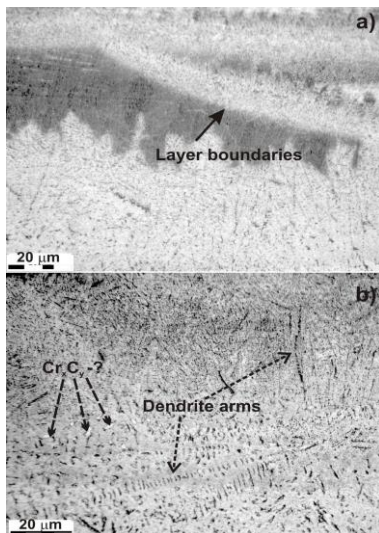


Fig. 2. OM after the LPBF without heating (a) and with heating (b) for NiCrBSi alloy

The LPBF process proceeds by nonequilibrium crystallization, which is due to the nature of the deposition and redistribution of the molten powder particles, specifically changes the phase-structural composition, and also affects the removal of part of the fluxing components (silicon and boron) with low-melting slags. The optical microscopy (OM) images of the upper layers is shown

in Fig. 2. It can be argued that additional heating contributes to some homogenization of the structure of all the phases studied in NiCrBSi alloy.

We clearly observe the interface between the laser remelted layers of alloy in Fig. 2a. Below and under the interface line, the darker section could be considered the slag zone that precipitated on the surface of the previous layer. In Fig. 2b, the long dendrite branch with size ~ 0.6 mm is visible. The growth direction of this dendrite is not corresponded to the direction of thermal transfer into substrate. Dendrite did not give secondary branches. Hence, the crystallization process was very fast. At the edges of the dendritic segregation the white inclusions are visible, which are the carbide phase.

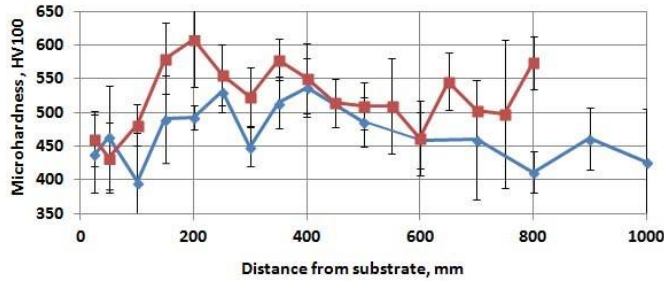


Fig. 3. Microhardness after the LPBF without heating and with additional heating for NiCrBSi alloy

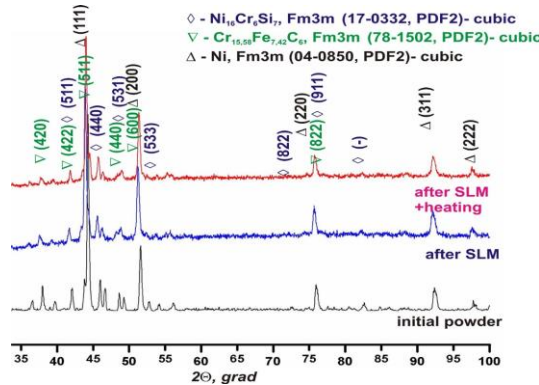


Fig. 4. XRD patterns after the LPBF and LPBF + heating for NiCrBSi alloy

These inclusions have different chemical compositions based on binary crystalline structures Me_xC_y phases (Cr_7C_3 , Cr_{23}C_6 , Cr_3C_2) borides (CrB or Fe_2B) and complex borides Cr_3NiB_6 or $\text{Cr}_2\text{Ni}_3\text{B}_6$, silicides (τ_1 , τ_2 , σ , π) and Ni_2Si intermetallide [5,6]. This is evidenced by triple diagrams of the Cr-Ni-B, Cr-Ni-Si and Cr-Ni-C systems [8-10].

The microhardness measurements of the studied alloys are shown in Fig. 3. In almost all cases, we observe an increase in the microhardness of 3D parts after heat-producing LPBF process. The possibility of improving the microstructure and controlling the hardness in the 3D products allows us to hope for the applicability of NiCrBSi alloy in the aerospace or nuclear industry. We associate the increase and decrease in microhardness with the presence in the γ -Ni solid solution carbides, borides or silicides inclusions. The low plasticity and increasing of crack formation after LPBF process during rapid cool are connected with different behavior of precipitates into intervals of Temperature Interval Fragility (TIF).

At the next stage, X-ray analysis of the 3D printed samples based on nickel super alloy after LPBF were carried out and the effect of additional heating was studied.

Figure 4 shows the results of the XRD patterns of NiCrBSi alloy after the selective laser melting (SLM - blue curve) and the SLM process together with heating to 500 °C (red curve). The lower diffraction pattern corresponds to the initial NiCrBSi powder before laser irradiation. The interpretation shows that the main phases, without any undesirable inclusions, remain after the SLM, including under additional heating, with virtually no changes.

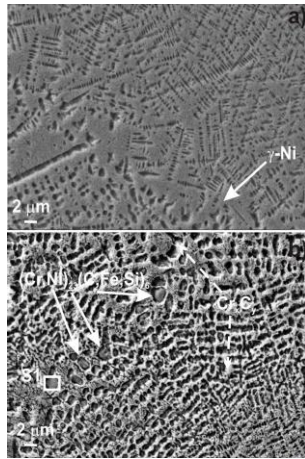


Fig. 5. The SEM images after the LPBF without heating (a) and with heating (b) for NiCrBSi alloy

Intense Bragg lines (111), (220), (311) and (222) are observed on all X-ray diffraction patterns, from the fcc lattice based on the γ – (Ni,Cr) solid solution. After laser influence a slight increase of the lattice parameter is observed. At the same time, the redistribution of the content of secondary phases occurs. XRD patterns allowed to establish that the main phase is the γ – (Ni,Cr) solid solution with a low content of carbides, borides and silicides (below 8%).

The typical submicrostructures is shown in Fig. 5 and correspond to the above OM results (see, Fig. 2). We can again repeat that heating makes the microstructure more homogenously. The NiCrBSi alloy microstructure as a whole did not change as a result of additional heating.

The EDX microanalysis (Table 1) from the entire area of the presented images (Fig. 5) gives the following information. The element analysis data repeats the NiCrBSi chemical content of self-fluxing powder (see Introduction). Comparison with the XRD data allows to conclude, the possibility of the formation of the Ni₁₆Cr₆Si₇ phase (17-0332, PDF2) and the Cr_{15.58}Fe_{7.42}C₆ phase (78-1502, PDF2) is observed.

Table 1.EDS microanalysis by Fig. 5

Elements, % wt.	All Fig. 5a	All Fig. 5b	S1 (Fig.5b)
O	1.84	--	--
Si	1.94	1.83	2.84
Fe	2.86	3.45	23.63
Cr	13.72	13.62	10.57
Ni	79.63	81.10	62.96
Totals	100.00	100.00	100.00

The next reasons could be proposed for explanation of increase crack formation during LPBF of the NiCrBSi powder system. The first reason can be associated with the formation of a complex boride-silicide eutectic of the type (Ni + Ni₃B + Ni₃Si) with a melting point of 950 °C, which, located along the boundaries of the dendrites the γ -solid Ni based solution, leads to brittle destruction. The second reason can be explained on the basis of the possible separation of strengthening phases due to the decay of a non-equilibrium γ -solid solution based on Ni. Such precipitates are carbide particles Me₂₃C₆ and borides of chromium. The third reason may be associated with the presence of carbon from 0.4 % by weight up to 0.8 % by weight, significantly affecting the plastic properties of the metal during deformation [3, 6].

Also, we conducted a quantitative assessment of the 3D printed sample roughness after the LPBF and LPBF with heating. Figure 6 shows the OM surface of the investigated alloys under low magnifications (x10).

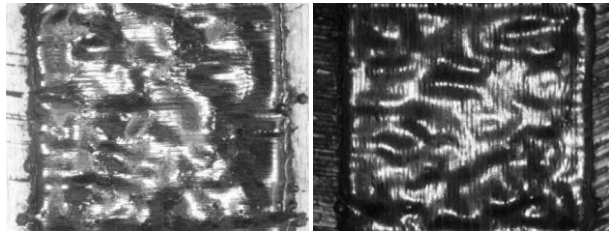


Fig. 6. General view of the rough surface for 3D printed samples made of the NiCrBSi after PLBF (left) and LPBF with heating to 500 0C(right).

Visually, we observed the roughness decrease after the heating-based LPBF. The color of the surface also changed, which indicates an appearance of some surface precipitations (slags) after the LPBF with heating.

The microgeometry assess of the 3D samples obtained by the LPBF method, a profilograph - profilometer was used. The results for the studied samples from Fig. 7 were summarized in the Table. 2

Table 2. Microgeometry data

Name	NiCrBSi	NiCrBSi+ heating
Roughness , R (μm)a	116,0	39,7
Running-in wear,, R(μm) pk	167,0	69,0
Surface ‘contamination’, R(μm)vk	174,0	57,4

It can be noted that after the LPBF, a rather high surface roughness of R_{max} , often exceeding 100-116 μm , is formed. However, additional heating reduces the surface roughness after LPBF for all the alloys in 3-4 times we have studied. The R_{pk} value characterizes the running-in wear of the material. The use of 3D-printed samples with high values of the parameter Rvk, characterizing the surface oil consumption, provides good conditions for retaining the lubricant in the cracking zone.

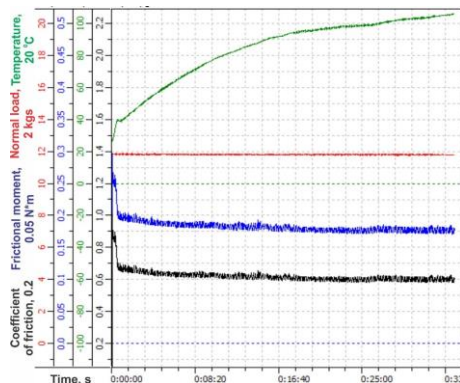


Fig. 7. Tribotechnical diagram of 3D samples from NiCrBSi alloy after LPBF with additional heating

For the tribomechanical tests, a ring-plane sliding friction scheme was used. Steel 41Cr4 (in the

state of quenching and tempering HRC 45) was chosen as the material (a cylinder with a diameter of 10 mm) of the counter-part. The test objective was to evaluate the tribological properties of 3D parts of the material and analyze the frictional compatibility of the friction pair. Below, the example of tribotechnical diagram of normal load, temperature and friction moment during wear tests (Fig. 8) are presented for the case of the LPBF + heating to 500 °C, only.

During the tests, the friction moment stability is observed, which indicates that the studied friction pair has frictional compatibility under the specified conditions of friction. As it can be seen from Fig. 8, during the test, some heating of the sample to temperatures up to ~ 100 °C was observed for NiCrBSi alloy, which, apparently, is not essential for these materials, because their melting points are significantly higher than these temperatures.

It was determined that the wear debris has been generated mainly from carbide, boride and/or silicide type ceramics as counter bodies, are filled in the pits on NiCrBSi surface. It provides formation of tribocouple which further prevents severe damages of NiCrBSi contact surface.

4. Conclusions

The mechanical properties of the NiCrBSi alloy after the PBF are investigated. Possible causes of increase crack formation during LPBF of the NiCrBSi powder system are considered and revealed. It is established that in the process of cooling the low ductility could be connected with some reasons. The following results were obtained also:

- The ability of the LPBF technology to create functional structures and to fabricate 3D parts of the NiCrBSi superalloy has been studied. The optimal regime for the layerwise LPBF in argon environment demands to additional heating and the laser influence regime $P = 100 \text{ W}$, $v = 10 \text{ cm/s}$.
- By the methods of OM, SEM combined with EDX microanalysis, XRD patterns, the morphology and structural phase transformations in the studied materials were investigated.
- The mechanical properties of the fabricated 3D parts were evaluated: microhardness was measured, product roughness was determined, wear and fracture were estimated and the nature of friction was determined.

A fundamentally important result of the completed study is the experimental implementation of additional hightemperature heating during the LPBF process up to 500 °C, which was done for the first time in principle for the NiCrBSi superalloy, and for specific materials promising in aerospace applications - in particular.

Acknowledgments

This study was supported by the Russian Foundation of Basis Researches (grants 17-48-630290 Povolzh'ye_a).

References

- [1] Chang Z, Wang W, Ge Y, Zhou J, Cui Z. Microstructure and mechanical properties of Ni-Cr-Si-B-Fe composite coating fabricated through laser additive manufacturing. *J. of Alloys and Compounds* 2018;747: 401-07.
- [2] Boswell JH, Clark D, Li W, Attallah MM. Cracking during thermal postprocessing of laser powder bed fabricated CM247LC Ni-superalloy. *Materials and Design* 2019;174: 107793.
- [3] Shishkovsky I. Aerospace applications of the SLM process of functional and functional graded metal-matrix composites based on NiCr superalloys. In: F. Froes, R. Boyer (Eds.) *Additive Manufacturing for the Aerospace Industry*. Elsevier Publ.; 2019. p. 265-80. doi: 10.1016/B978-0-12-814062-8.00014-5
- [4] Vilar R, Almeida A. Repair and manufacturing of single crystal Ni-based superalloys components by laser powder deposition—A review, *J. Laser Appl.* 2015; 27: S17004.
- [5] Shishkovsky I., Kakovkina N., Scherbakoff W. Layerwise fabrication refractory NiCrSiB

composite with gradient grow of tungsten carbide additives by selective laser melting. *Optics and Laser Technology* 2019; 120: 105723.

[6] Shishkovsky I., Kakovkina N., Scherbakov V. Fabrication of heatresisting nickel composite gradient structures with TiC nano additive during powder bed fusion process. *Procedia CIRP* 2018; 74: 68-71.

[7] Shishkovsky I., Scherbakov V., Ibatullin I., Volchkov V., Volova L. Nano- size ceramic reinforced 3D biopolymer scaffolds: tribomechanical testing and stem cell activity. *Composite Structures* 2018; 202: 651-59.

[8] Velikanova T.Ya., Bondar A.A., Grytsi, A.V. The Chromium-Nickel-Carbon (Cr-Ni-C) PhaseDiagram. *J. Phase Equilib.* 1999; 20(2): 125-147.

[9] Gladyshevsky E.I., Borusevich L.K. The Ternary System Cr-Ni-Si., *Russ. J. Inorg. Chem.* 1963; 8(8): 997-1000.

[10] Chepiga M.V., Krivutskii V.P., Kuzma Yu.B., The System Cr-Ni-B. *Inorg. Mater.* 1972; 8(6): 928-932.

3.2. Английский для инженерии и технологий (English for Engineering and Technology)

5 семестр (осенний) – зачет

Примеры заданий

1. Read and translate the text *in cursive*.

Mercury

Mass: $0.330 \times 10^{24} \text{ kg}$ // $0.364 \times 10^{21} \text{ tons}$

Diameter: 4.879 km // 3032 miles

Density: 5.429 kg/m^3 // 339 lbs/ft^3

Gravity: 3.7 m/s^2 // 12.1 ft/s^2

Mean Temperature: $437 \text{ }^\circ\text{K}$ // $164 \text{ }^\circ\text{C}$ // $333 \text{ }^\circ\text{F}$

Shapes and Dimensions: *triangle, hemisphere, tubular*

Case: The Collapsing Bridge

Context: A civil engineering firm is hired to design a bridge. The project has a tight budget and an aggressive timeline. During the design phase, the lead engineer discovers that using cheaper materials could save costs but would endanger the bridge's safety. The engineer raises concerns, but the project manager insists on proceeding with the cheaper materials to meet the budget and deadline. The bridge is completed on time, but six months later, it collapses during heavy rainfall, causing injuries and fatalities.

Task: Identify the ethical issues in this case and propose solutions

Discussion Points:

- Discuss the responsibilities of the engineer, the project manager, and the firm.
- Propose what the engineer could have done differently to prevent the disaster.
- Suggest policies that could be put in place to prevent similar ethical dilemmas in the future.

Письменная часть – Тестирование ИСТОК

Другой вариант письменной работы – Лексико-грамматический тест

Task 1. Fill in the gaps with the words in bold. There are two extra words you don't need.

overlap exaggerate authorized leverage gene arise holistic distill intrinsic consent tissue encounter advent foster uphold fraud predictive shrink impartiality prosthetics

1. Engineers must (**uphold**) the highest standards of integrity.
2. (**Holistic**) approaches consider the entire system, not just individual components.
3. Informed (**consent**) is necessary for any research involving human subjects.
4. Merit-based hiring practices can help (**foster**) diversity and innovation in engineering teams.
5. Understanding the (**overlap**) between different cell types is pertinent to developing effective treatments for diseases.
6. Validating the accuracy of (**predictive**) models is crucial to ensure that they are reliable for clinical use.
7. Researchers are studying the molecular mechanisms that govern (**tissue**) regeneration in order to develop new therapies.
8. The ethical implications of (**gene**) editing technology must be carefully considered before it is widely implemented in healthcare.
9. Advances in (**prosthetics**) have allowed amputees to regain the use of their limb with greater functionality.
10. The ability to (**distill**) complex information into easily digestible formats is a valuable skill in scientific communication.
11. In some sci-fi stories, technology is able (**to shrink**) objects down to a microscopic size for exploration.
12. The (**advent**) of artificial intelligence has brought about new ethical concerns that must be carefully considered.
13. Science fiction stories often (**exaggerate**) the capabilities of technology.
14. (**Fraud**) in the development of technology can erode public trust and conceal flaws.
15. It is important to resolve any ethical concerns that may (**arise**) from the use of new technologies.
16. The validation of scientific research requires (**impartiality**) and transparency in the reporting of results.
17. Only (**authorized**) personnel should have access to sensitive information about new technologies to prevent misuse or theft.
18. In science fiction, humans often (**encounter**) technologies that challenge their understanding of reality itself.

Task 2. Fill in the gaps.

- 9² - nine (**squared**)
 6⁹ - six to the (**power**) of nine
 $\sqrt{64}$ - the (**square**) root of sixty four
 12 lb - 12 (**pounds**)
 10 : 2 = 5 - Ten (**divided**) by two is five.

km² – (**square**) kilometer

F° - (**Fahrenheit**)

Task 3. Open the brackets.

1. If the temperature **reaches** (reach) a certain level, the computer automatically will shut down to prevent damage.
2. If we **had not discovered** (not discover) electricity, we would still be living in the dark ages.
3. If we don't maintain our technology, it **will become** (become) outdated and ineffective.
4. If we **do not invest** (not invest) in training and development for our engineers, we will struggle to keep up with advancements in technology.

5. If we had used better quality materials, the machine **would not have broken** (not break) down so soon.
6. If we **had followed** (follow) the safety regulations strictly, the accident wouldn't have occurred at the construction site.
7. If the temperature of water reaches 100 degrees Celsius, it **boils** (boil) and **turns** (turn) into steam.
8. If Newton's Third Law of Motion **did not exist** (not exist), objects wouldn't experience equal and opposite reactions.
9. If I had known how to code, I **would be** (be) able to automate repetitive tasks at work now.

1. Аудирование

Listen to the audio and complete the notes below. Write ONE WORD ONLY for each answer.

Uses of Nanotechnology

Transport

- Nanotechnology could allow the development of stronger (**metal/metals**).
- Planes would be much lighter in weight.
- (**Space**) travel will be made available to the masses.

Technology

- Computers will be even smaller, faster, and will have a greater (**memory**).
- (**Solar**) energy will become more affordable.

The Environment

- Nano-robots could rebuild the ozone layer.
- Pollutants such as (**oil**) could be removed from water
- There will be no (**waste**) from manufacturing.

Health and Medicine

- New methods of food production could eradicate famine.
- Analysis of medical { 1:SA:=tests } will be speeded up.
- Life expectancy could be increased.

2. Чтение

Read the text and do the tasks.

Can computers really create works of art?

The Painting Fool is one of a growing number of computer programs which, so their makers claim, possess creative talents. Classical music by an artificial composer has had audiences enraptured, and even tricked them into believing a human was behind the score. Artworks painted by a robot have sold for thousands of dollars and been hung in prestigious galleries. And software has been built which creates art that could not have been imagined by the programmer.

Human beings are the only species to perform sophisticated creative acts regularly. If we can break this process down into computer code, where does that leave human creativity? 'This is a question at the very core of humanity,' says Geraint Wiggins, a computational creativity researcher at Goldsmiths, University of London. 'It scares a lot of people. They are worried that it is taking something special away from what it means to be human.'

To some extent, we are all familiar with computerised art. The question is: where does the work of the artist stop and the creativity of the computer begin? Consider one of the oldest machine artists, Aaron, a robot that has had paintings exhibited in London's Tate Modern and the San Francisco Museum of Modern Art. Aaron can pick up a paintbrush and paint on canvas on its own. Impressive perhaps, but it is still little more than a tool to realise the programmer's own creative ideas.

Simon Colton, the designer of the Painting Fool, is keen to make sure his creation doesn't attract the same criticism. Unlike earlier 'artists' such as Aaron, the Painting Fool only needs

minimal direction and can come up with its own concepts by going online for material. The software runs its own web searches and trawls through social media sites. It is now beginning to display a kind of imagination too, creating pictures from scratch. One of its original works is a series of fuzzy landscapes, depicting trees and sky. While some might say they have a mechanical look, Colton argues that such reactions arise from people's double standards towards software-produced and human-produced art. After all, he says, consider that the Painting Fool painted the landscapes without referring to a photo. 'If a child painted a new scene from its head, you'd say it has a certain level of imagination,' he points out. 'The same should be true of a machine.' Software bugs can also lead to unexpected results. Some of the Painting Fool's paintings of a chair came out in black and white, thanks to a technical glitch. This gives the work an eerie, ghostlike quality. Human artists like the renowned Ellsworth Kelly are lauded for limiting their colour palette - so why should computers be any different?

Researchers like Colton don't believe it is right to measure machine creativity directly to that of humans who 'have had millennia to develop our skills'. Others, though, are fascinated by the prospect that a computer might create something as original and subtle as our best artists. So far, only one has come close. Composer David Cope invented a program called Experiments in Musical Intelligence, or EMI. Not only did EMI create compositions in Cope's style, but also that of the most revered classical composers, including Bach, Chopin and Mozart. Audiences were moved to tears, and EMI even fooled classical music experts into thinking they were hearing genuine Bach. Not everyone was impressed however. Some, such as Wiggins, have blasted Cope's work as pseudoscience, and condemned him for his deliberately vague explanation of how the software worked. Meanwhile, Douglas Hofstadter of Indiana University said

EMI created replicas which still rely completely on the original artist's creative impulses: When audiences found out the truth they were often outraged with Cope, and one music lover even tried to punch him. Amid such controversy, Cope destroyed EMI's vital databases.

But why did so many people love the music, yet recoil when they discovered how it was composed? A study by computer scientist David Moffat of Glasgow Caledonian University provides a clue. He asked both expert musicians and non-experts to assess six compositions. The participants weren't told beforehand whether the tunes were composed by humans or computers, but were asked to guess, and then rate how much they liked each one. People who thought the composer was a computer tended to dislike the piece more than those who believed it was human. This was true even among the experts, who might have been expected to be more objective in their analyses.

Where does this prejudice come from? Paul Bloom of Yale University has a suggestion: he reckons part of the pleasure we get from art stems from the creative process behind the work. This can give it an 'irresistible essence', says Bloom. Meanwhile, experiments by Justin Kruger of New York University have shown that people's enjoyment of an artwork increases if they think more time and effort was needed to create it. Similarly, Colton thinks that when people experience art, they wonder what the artist might have been thinking or what the artist is trying to tell them. It seems obvious, therefore, that with computers producing art, this speculation is cut short - there's nothing to explore. But as technology becomes increasingly complex, finding those greater depths in computer art could become possible. This is precisely why Colton asks the Painting Fool to tap into online social networks for its inspiration: hopefully this way it will choose themes that will already be meaningful to us.

1. Are the following statements True or False?

- 1) Moffat's research may help explain people's reactions to EMI. **(True)**
- 2) Justin Kruger's findings cast doubt on Paul Bloom's theory about people's prejudice towards computer art. **(False)**

2. Complete each sentence with the correct ending, A-G below. There is one extra option.

1. Simon Colton says it is important to consider the long-term view when **D**
2. David Cope's EMI software surprised people by **A**
3. Geraint Wiggins criticised Cope for not **E**

4. Douglas Hofstadter claimed that EMI was **C**
5. Audiences who had listened to EMI's music became angry after **G**
6. The participants in David Moffat's study had to assess music without **B**

F – extra

List of Ideas

- A generating work that was virtually indistinguishable from that of humans.
- B knowing whether it was the work of humans or software.
- C producing work entirely dependent on the imagination of its creator.
- D comparing the artistic achievements of humans and computers.
- E revealing the technical details of his program.
- F persuading the public to appreciate computer art.
- G discovering that it was the product of a computer program.

6 семестр (весенний) – дифференцированный зачет

Примеры заданий

1. Write a mechanism description of a 3D-Printing technology tailored for a semi-technical or technical audience. 250-300 words.
2. Read and translate the text *in cursive*.
Materials and Properties: *aluminum, ceramics, ductility*
Chemical Formula: *H₂O, CO₂, H₂SO₄*
3. Study the case and suggest your solutions. Use Target Vocabulary you studied during the semester. You have 5 minutes to prepare, and your talk should be at least 3 minutes long. Ensure your response is clear, structured, and demonstrates your understanding of the topic.
Case: Software Bug in Autonomous Vehicles
Context: A self-driving car misinterprets stop signs during heavy rain.
Task: Analyze the problem (e.g., sensor limitations, software algorithms) and propose fixes.
Discussion Points:
 - How do weather conditions affect sensor accuracy?
 - What additional safeguards could be added to improve safety?
 - How would you test the updated system?

3.3. Английский для предпринимательства и бизнеса (English for Business and Entrepreneurship)

5 семестр (осенний) – зачет

Примеры заданий

Устная часть – мини-презентация (3-5 мин) по одной из пройденных тем семестра. Время на подготовку – 10 минут

Примеры:

TOPIC 4 Get prepared with a mini presentation (3-5 min speech) on the topic “Job satisfaction”.

Is job satisfaction just a corporate buzzword designed to keep employees complacent, or is it the key to unlocking true workplace happiness? While some swear by the idea that loving your job leads to success, others argue it's a myth perpetuated to mask deeper issues like burnout, inequality, and exploitation. Could it be that job satisfaction is nothing more than a smokescreen—or is it the ultimate measure of a fulfilling career?

In your speech, answer the following questions:

- What's the difference between a job and a career?
- Is a job just to pay the bills and a career something you're interested in?
- Can work be fun? What makes work fun? Can it always be fun? What is fun?
- Jobs of the future – What jobs will exist in 5, 10, 20 years that don't exist now?

TOPIC 5 Get prepared with a mini presentation (3-5 min speech) on the topic “The most successful business model of the 21 century”.

What do Amazon, Uber, and Airbnb have in common? They've all mastered a business model so powerful it has reshaped entire industries, disrupted traditional economies, and made billion-dollar empires out of thin air. But is this model a revolutionary breakthrough or a double-edged sword? Dive into the world of platform-based businesses and discover how they've become the undisputed champions of the 21st century—and what their success means for the future of work, commerce, and innovation.

In your speech, answer the following questions:

- What is a business model?
- What types of business models do you know? Give examples of the companies using a particular business model.
- How was the process of creating, delivering and capturing value updated and innovated to fit in with the technology of the 21st century?
- Provide an example of an innovative business model.

Письменная часть – Business Proposal (эссе-рассуждение на основе предложенного сценария/бизнес-ситуации). Количество слов – 250 - 300. Время на написание – 60 минут.

Пример:

Case 2: Corporate Culture – Improving Employee Engagement

Scenario: Your company has noticed a decline in employee engagement and morale. You need to propose a plan to improve corporate culture and boost employee satisfaction.

Tasks:

1. Introduction: Explain the importance of a positive corporate culture and its impact on productivity and retention.
2. Current Challenges: Identify specific issues affecting employee engagement (e.g., lack of communication, limited growth opportunities).
3. Proposed Initiatives: Suggest actionable initiatives to improve corporate culture, such as:
 - Implementing regular feedback sessions.
 - Introducing wellness programs or team-building activities.
 - Creating a recognition and rewards system.
4. Benefits: Highlight the expected outcomes, such as increased employee satisfaction, reduced turnover, and improved performance.
5. Budget and Resources: Estimate the costs of implementing these initiatives and identify any resources required.
6. Evaluation Plan: Propose a method for measuring the success of the initiatives (e.g., employee surveys, performance metrics).

6 семестр (весенний) - дифференцированный зачет

Примеры заданий

Устная часть:

1. Part 1. Сообщение (3-5 мин) по одной из пройденных тем семестра;
2. Part 2. Ответы на вопросы преподавателя по теме сообщения студента.

Пример:

Topic 2

Bridging the Gap: Exploring Marketing Strategies in Traditional and Digital Channels

Part 1: prepare a 3-5 min report covering the following questions

1. What are the key differences between traditional marketing and digital marketing?
2. What advantages does traditional marketing offer that digital marketing may lack, and vice versa?
3. How do consumer preferences impact the effectiveness of traditional and digital marketing campaigns?
4. How can businesses adapt their marketing strategies to cater to changing technology and consumer behaviors?

Part 2: talk about the following ideas

- Debate the effectiveness of traditional marketing methods such as TV commercials compared to digital ads on social media platforms.
- Analyze the impact of influencer marketing on consumer behavior in the digital age.
- Brainstorm innovative ways for businesses to leverage traditional marketing tactics in a digital marketing campaign.
- Discuss the importance of content marketing in both traditional and digital channels.

Письменная часть – написать Opinion Essay (250-300 слов) на основе прочитанного аутентичного текста объемом не более 5 000 знаков.

Пример:

Reading for writing

1. Innovation and Entrepreneurship

The Importance of Innovation in Entrepreneurship

According to McKinsey, 84% of executives say that their future success is dependent on innovation. Although innovation may sound like a buzzword for some, there are many reasons why companies put a lot of emphasis on it. In addition to the fact that innovation allows organizations to stay relevant in the competitive market, it also plays an important role in economic growth. The ability to resolve critical problems depends on new innovations and especially developing countries need it more than ever. I've decided to take a closer look at the reasons that make innovation important for an individual organization .

What is innovation and why do we need it? Based on the Cambridge dictionary, innovation by definition is a new idea or method that is being tried for the first time; the introduction of something new. Without innovation, there isn't anything new, and without anything new, there will be no progress. If an organization isn't making any progress, it simply cannot stay relevant in the competitive market. The economy is composed of enterprises and businesses. Our economy has survived because the industry leaders had been able to adapt to the changing times and aimed at meeting the communities' needs mostly. Any small business is integral to the economy. Without it, our economy would not survive. But a business must also sustain itself, be able to constantly evolve to fulfill the demands of the community and the people. In every business, it is imperative to be industrious, innovative and resourceful. Entrepreneurship produces financial gain and keeps the economy afloat, which gives rise to the importance of innovation in entrepreneurship. Entrepreneurs are innovators of the economy. It is not just the scientist who invents and comes up with the solutions. The importance of innovation in entrepreneurship is shown by coming up with a new way to produce a product or a solution. A service industry can expand with another type of service to fulfill the ever changing needs of their clients. Producers can come up with another product made of raw materials and by-products. The importance of innovation in entrepreneurship is another key value for the longevity of a business. A need appeared

a trigger for entrepreneurs and businesses. They saw the need within the community and among themselves that they have come up with a solution. They seize the opportunity to innovate to make the lives more comfortable. And these solutions kept evolving to make them better, easier and more useful. Entrepreneurs must keep themselves abreast with the current trends and demands. Manufacturers are constantly innovating to produce more without sacrificing the quality. Companies and enterprises keep innovation as part of their organization. Innovations contribute to the success of the company. Entrepreneurs, as innovators, see not just one solution to a need. They keep coming up with ideas and do not settle until they come up with multiple solutions. Innovation is extremely important so that companies often see their employees' creativity as a solution. They come up with seminars and trainings to keep their employees stimulated to create something useful for others and in turn, financial gain for the company. - To give reasoning for the statement, we will give arguments. Many companies with a global name can be an example of innovative activity. One of these companies is Adidas, which is famous for having a huge range of high-quality sportswear all over the world. But despite this, it continues to innovate in production and improve product quality. These innovations include the introduction of fitness bracelets to the market, which are very popular because it makes sports more convenient and productive. Another example is the innovative activity of Google. Creating virtual assistants on the network not only attracts a larger number of users, but also makes using the Internet more comfortable and easier. The introduction of Google technologies has not stopped for a long time, which indicates that innovation creates new opportunities. - The other factor that raises the importance of innovation in entrepreneurship is competition. It stimulates any entrepreneur to come up with something much better than their competitor in a lower price, and still be cost-effective and qualitative. Small businesses see the importance of innovation in entrepreneurship. They were able to compete with large industries and see their value in the economy. Small businesses are important as they are directly involved in the community and therefore, contribute to their financial and economic gain. These small businesses know exactly what community needs and satisfy these needs. All things start small. Thus, we can conclude that innovation is an indispensable tool in entrepreneurship and business. In addition, Innovation is important not just in entrepreneurship. As individuals, we are innovators by adapting well to our needs and creating our own solutions. Entrepreneurs are the same. The innovation in entrepreneurship helped the country by changing with the times and producing new products and services from ones that already exist. And, being innovative has helped us become successful in all our endeavors.

(Adapted from <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-innovation>)

Guiding Questions (structuring essay assistance):

1. *How do Google technologies exemplify the ongoing nature of innovation and what new opportunities do they create?*
2. *In what ways does competition drive entrepreneurs to innovate, and what benefits can arise from offering better products at lower prices?*
3. *What significance do small businesses hold in the context of innovation and competition with larger industries?*
4. *How do small businesses identify and address the specific needs of their communities, contributing to economic growth?*
5. *Why is it crucial to view innovation as an indispensable tool in entrepreneurship and business success?*
6. *In what ways can individuals also be seen as innovators in their daily lives and problem-solving?*
7. *How has innovation in entrepreneurship contributed to adapting to changing times and enhancing existing products and services?*
8. *What role does innovation play in ensuring ongoing success across various endeavors, both personally and professionally?*

Writing (250 -300 words):

Innovation and Entrepreneurship: Evaluate the role of innovation and entrepreneurship in driving business growth and success. Analyze topics such as fostering a culture of innovation, managing risk, and strategies for promoting entrepreneurial thinking within organizations