

Programme Specifications

Intensive English Engineering and IT – FEI1IE

Version 4.0 October 2025

Progression Degrees

BEng Electrical Engineering ^b
BEng Mechanical Engineering ^b
BEng Business Engineering ^b
BEng Applied Mechatronic Systems ^b
BSc Computer Science ^a
BSc Computer Science - Healthcare Management ^a
BSc Web Development ^a
BA UX User Experience Design and Content Creation ^a

Foundation Overview

Duration	3 Semesters (40 teaching weeks)
Occurrence	October
Total teaching hours face to face	751
Total study hours	1040
Language	English

Modules

	Modules	Codes	
1	Intensive English	IE01	Semester 1
2	English language and Academic skills	UG01	Semester 2
3	English language and Academic skills	UG02	Semester 3
4	Critical and Creative Thinking	UG03	Semester 2
5	Maths	UG11	Semester 2
6	German language and culture	GL01 & GL02	Semester 2 & 3
7	Introduction to Programming ^a	UG08	Semester 3
8	Physics for Engineers ^b	UG09	Semester 3
9	Ethics	UG07	Semester 3

^{a/b}Depending on Degree Programme

Name of Module/ Modultitel: Intensive English Preparatory Semester					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
IEL01 English Intensive	Annually	1 Semester	English		Total study hours: 420 Taught hours: 240 Self-study: 180
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Weighting/ Prüfungsleistung
		1. Final summative examination covering reading, listening, speaking and writing skills		Lectures, Seminars, Tutorials, Group work	1. Exam 100%
Module Description/ Constructive Alignment					
With this module students will receive intensive language instruction to raise their overall level of language competency. The content covers the fundamentals of English language skills, such as tense construction, appropriate morphology, syntax, grammatical construction and speaking skills to prepare students for academic studies in English. The aim is to enable students to improve their English competency, in advance of the Foundation pathway programme, to meet the equivalent to of the level of IELTS grade 5.0, as assessed at the end of this semester.					
Intended Learning Outcomes – Ability to act /transferrable skills / Handlungskompetenz					
Upon completion of this module students will be able to:					
• To speak fluently and confidently about a wide array of topics • Read and understand long-form complex texts in English • Form opinions and speak fluently about their opinions • Have improved listening capabilities, and be able to listen to and understand advanced-intermediate spoken English sources					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Upon completion of this module students will be able to:					
• Demonstrate improved competence and confidence in the use and understanding of English grammar and pragmatics • Follow lectures, seminars and study paths in English to prepare them for further academic study in English					

• Demonstrate understanding of advanced intermediate English vocabulary
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz
Upon completion of this module students will be able to: • Speak for a prolonged period of time fluently • Read and understand long form texts • Listen to and ascertain spoken academic English and be able to understand nuances in spoken language • Write competently in correct grammar
Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module students will be able to: • Work effectively both independently and as team member. Plan and deliver a presentations confidently in front of peers
Outline Content/ Lerninhalt
• Reading techniques - development of reading strategies including: reading for different specific purposes, identifying main points and topic sentences, predicting content of reading passages; note-taking and summarising content and evaluating writers' purpose and stance. • Advanced English tenses in use - Intensive instruction on a broader array of tenses and aspects including perfect and continuous tenses in all three tense forms (past, present and future). Students will also be able to understand the nuances of tense usage, and develop an idea about the various implications that each tense has and mood implications (imperative, subjunctive...). • Conditionals - Students will learn how to use and apply conditional forms in English, and how to apply them to written and spoken scenarios. They will also examine them in a variety of contexts, understanding the pragmatic usage of these forms. • Verb forms - Students will be introduced to a wide array of verb forms in English, such as the gerund form. • Advanced sentence structure - The course covers complex sentence structures, subordinate and embedded clauses and understanding adverb phrases, as well as noun phrases and their distinctions. • Writing - Students will learn writing techniques and practice applying grammatical learning into written forms, paragraph construction, the fundamentals of English grammar within writing and written conventions in English. • Full linguistic immersion - As an intensive preparatory course, students will be immersed in the English language and use it daily to improve and consolidate skills learned throughout the course. They will need to acclimate to everyday uses of English, and apply learned skills daily. • Speaking competence- Regular attention will be given to ensuring a maximised speaking time for students in the form of group discussions based on set content, workshops and seminars will also form the basis of the work that will advance not just participants English, but also prepare them on the fundamentals of academic life. • Self-study - Students will be encouraged to consolidate content outside of the classroom. With regular formative assessments, reviews, and

- **Listening and note-taking** - developing comprehension skills for listening to authentic spoken English and other academic spoken formats.

Recommended reading/ Empfehlungsliteratur

English Grammar in Use. 5th Ed. (2019) Raymond Murphy.
BBC Speakout! 3rd Ed. (2022).

Name of Module/ Modultitel: *English Language and Academic Skills (Unit 1/2)*

Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG01 English Language and Academic Skills	Twice Annually	1 Semester	English		Total study hours: 298 Taught hours: 112 Self-study: 186
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Weighting/ Prüfungsleistung
		1. Formative Grammar Assignment 2. Group Presentation and seminar discussion (10 min each member) 3. Final summative examination covering academic reading and listening skills (1.5 hours)		Lectures, Seminars, Tutorials, Group work	1. Formative 0% 2. Course work 60% 3. Exam 40%

Module Description/ Constructive Alignment

This module has been designed to help students develop their academic literacy and communication skills in preparation for undergraduate study and to understand the institutional culture, practices, norms and expectations of German higher education in an international academic context and community. As the first Unit of a two part course, it will enable students to develop academic research and communication skills using contemporary resources and raise students' English language levels to the required entry point for undergraduate entry. By encouraging students to share this knowledge in an open class forum (small group tutorial presentations), the module also aims to develop and encourage the use of presentation skills in academic and professional-facing contexts.

At the end of this Module, students will have developed transferable and portable skills of effective and professional communication to support their ongoing study as well as providing a basis to foster career and life-building skills. The module utilises several practical activities to allow candidates to develop these essential skills. Assignments for UG01 focus on core academic skills of reading and listening, as well as presenting and researching key information.

Name of Module/ Modultitel: English Language and Academic Skills (Unit 2/2)					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG02 English Language and Academic Skills	Annually	1 Semester	English		Total study hours: 298 Taught hours: 112 Self-study: 186
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Weighting/ Prüfungsleistung
		1. Formative Assignment Short summary of reading text (500 words) 2. Written Exam 500 words (e.g. summary of reading material, in-class exam) 3. Written assignment of 1,500 words using essay format		Lectures, Seminars, Tutorials, Group work	1. Formative 0% 2. Exam 40% 3. Course work 60%
Module Description/ Constructive Alignment					
As the second Unit of a two part course, this module is designed to continue student’s development of their academic literacy and communication skills. It will enable students to develop academic research and communication skills using contemporary resources and raise students’ English language levels to the required entry point for undergraduate entry. It also aims to provide students with understanding of the range of methodologies and a solid grounding for the research skills required in undergraduate study. The module utilises several practical activities to allow candidates to develop these essential skills. Special focus is placed on expanding on the skillset entailed in UG01, and focusses on the application of acquired skills into an intensely academic context, focused on project planning, critical reception of academic and non academic sources, and formulation of ideas into written form.					

Intended Learning Outcomes – Ability to act /transferrable skills / Handlungskompetenz
Upon completion of this module students will be able to: • Demonstrate an ability to communicate effectively in writing, qualitative and quantitative information at an appropriate level • Embed the importance of self-study and reliance. This involves cultivating and developing a responsibility within each student to take responsibility for their own learning, initiative, effective time-management and self-discipline within the academic and professional environments. • Demonstrate awareness of the need to function as reflective autonomous learners in a variety of environments, work in teams in a variety of roles, forming, leading, building, problem solving and consolidating, and manage time and tasks effectively • Display an understanding of the concept of continuous improvement and objectivity in relation to an individual's academic performance
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz
Upon completion of this module students will be able to: • Demonstrate an ability to structure and produce an academic essay and report on a topic relevant to the student's discipline, including the planning, writing and editing stages of the process • Develop and practise academic writing skills at the sentence, paragraph and discourse levels in appropriate written genres • Be able to construct arguments with supporting evidence to establish a position on an issue • Interpret, summarise and evaluate arguments, assumptions, data and concepts to make justified decisions or draw justified conclusions
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz
Upon completion of this module students will be able to: • Search for, select and evaluate sources of information for research, and use appropriate citation and bibliography writing conventions, making full use of library and e-learning search (catalogue and bibliographic) resources • Demonstrate an ability to understand and identify the key themes of a lecture, using appropriate comprehension, notetaking and summary writing skills • Select, read, digest, summarise and synthesise information material in a variety of forms, both qualitative and quantitative (text, numerical data and diagrammatic) and in an appropriate manner to identify and determine key facts/themes and relevance. • Analyse and incorporate appropriate academic sources and data into academic writing • Understand the principles and conventions of academic discourse including using sources correctly and avoiding plagiarism • Proficiently use techniques and technology in the collation, interpretation and presentation of data in oral and written formats

Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module students will be able to: • Work effectively as a team member and independently • Manage time and effectively communicate complex academic ideas and arguments.
Outline Content/ Lerninhalt
• Academic writing conventions - preparation for and production of academic written assignments in genres relevant to the discipline of study: argumentation, paragraph structure and cohesion, and introduction and practice of appropriate academic grammar and vocabulary to encourage greater linguistic accuracy. Referencing & Plagiarism – introduction and practice of referencing techniques and tackling plagiarism and use of AI generated text through paraphrasing, reporting verbs and transition signals • Reading techniques - development of reading strategies including reading for different specific purposes, identifying main points and topic sentences, predicting content of reading passages; note-taking and summarising content and evaluating writers' purpose and stance. • Research skills – introduction to different methodologies, research design and methods. Data collection and analysis, including uses and application of information technology and Artificial Intelligence (AI). • Effective Study Techniques - development of the micro-skills needed for academic writing, including pre-writing, brainstorming, planning, text organisation, editing and rewriting; using drafts and formative peer and tutor feedback to feedforward; selecting and using research from multiple sources in writing; and developing referencing skills. • Self-reflection – helps students to think about feedback provided on their own work and learning where individual improvements can be gained through further study.
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: <i>Critical and Creative Thinking</i>					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG03 Critical and Creative Thinking	Annually	1 Semester	English		Total study hours: 150 Taught hours: 56 Self-study: 94
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
		1. Formative assignment 2. Argument essay 1000 words 3. Research project report 1000 words		Lectures, Seminars, Tutorials, Group work	1. Course work: 50% 2. Course work: 50%
Module Description/ Constructive Alignment					
This Critical and Creative Thinking module teaches students to create effective arguments through objectively assessing different types of information and literature. It is crucial for good degree outcomes and future employability to teach students to recognise logical fallacies, identify credibility and can make logical, rational arguments that avoid bias. This module is designed to teach, reinforce, and practice independent learning and critical thinking, as opposed to rote memorisation. Teachers will use a range of techniques such as open discussion in class, presentations and individual research (e.g. on Fake news) to encourage critical thinking skills within daily, academic and professional-facing contexts. It will deepen the understanding and interpretation of processes, motives, argument, rationale, credibility of a wide range of studies.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module students will be able to: • Demonstrate an ability to examine and comment on component parts of a particular argument to develop a structured and analytical response • Analyse sources of information, regardless of format, and evaluate their relevance and reliability and use these appropriately in the development of an argument including reliability, argument mapping, and identifying fallibility					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Students will develop key skills in critical and creative thinking, including effective debating, negotiation and argumentation. They will learn to use brainstorming and scenario-building techniques, distinguish between fact and opinion and evaluate arguments for clarity and consistency. The course will also cover hypothesis generation, the use of various types of evidence and how to synthesize and present data to support well-reasoned arguments.					
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz					

Upon completion of this module students will be able to: • Understand and evaluate the credibility of various types of evidence, inclusive of qualitative and quantitative approaches • Define and critically assess arguments and evidence from a range of academic sources
Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module students will be able to: • Describe how knowledge, evidence, and errors in thinking influence problem solving • Define and explain bias
Outline Content/ Lerninhalt
This Module will apply different forms of thinking and creating critical thinking skills, and how to apply them: • Developing Skills in Debating, Influencing, Negotiating, Gaining agreement • Brainstorming / Mind-mapping / Scenario-building • Fact vs Opinion / Objectivity vs Subjectivity • Hypothesis Generation / Consideration of Alternatives • Formulating Effective Arguments / Taking a Position / Critical Evaluation of Arguments • Using Arguments in Writing (Effective Essay Structure) • Evaluating Arguments I: Good - Clarity / logical consistency / structure • Evaluating Arguments II: Poor - Identifying flaws in arguments: false assumptions, ambiguity, irrelevance and bias • Types of Evidence: Primary / Secondary / Quantitative / Qualitative / Controlling Variables / Collecting / Using samples • Critical Synthesis from Multiple Sources • Pattern Recognition and fusing Data / Assessing the Credibility of Evidence • Using & Presenting Data to Support an Argument
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: <i>Maths</i>					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG11 Maths	Annually	1 Semester	English		Total study hours: 150 Taught hours: 56 Self-study: 94
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
		1. Exam (closed book) (1.5 hours) 2. Final exam (closed book) (2 hours)		Lectures, Seminars, Tutorials, Student-managed learning	1. Exam: 40% 2. Exam: 60%
Module Description/ Constructive Alignment					
Having successfully completed the module, students will have both consolidated and gained further necessary mathematical skills required to study at first year undergraduate level. Students will be able to carry out the basic and Foundational mathematical manipulations and understand relevant key concepts through theoretical and practical teaching methods. The topics covered include a range of arithmetic skills, algebra, solving equations, probability and basic statistics, the focus is on building core skills and understanding.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module, students will be able to confidently work with numbers, including the usage of a calculator where necessary. Students will also be able to apply fundamental mathematical principles throughout their other study modules, considering a variety of real-world contexts.					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Upon completion of this module, students will be able to:					
Define basic principles of Arithmetic and Calculus, Trigonometric functions, Linear and Non-Linear Equation, Statistics, Basic principles of probability, Polynomial division, Laws of Logarithms, Matrices and Integration and differentiation rules.					
Intended Learning Outcomes - Application and generation of knowledge / Methodenkompetenz					
Upon completion of this module, students will be able to:					

• Apply their mathematical knowledge to solve problems in the areas of Arithmetic and Calculus, Trigonometric functions, Linear and Non-Linear Equation, Statistics, Basic principles of probability, Polynomial division, Laws of Logarithms, Matrices and Integration and differentiation rules.
Intended Learning Outcomes – Communication and Cooperation / Sozialkompetenz
Outline Content/ Lerninhalt
This module covers an introduction to the following: • Arithmetic and Calculus • Trigonometric functions • Linear and Non-Linear Equation • Statistics • Basic principles of probability • Polynomial division • Laws of Logarithms • Matrices • Integration and differentiation rules
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: German language and culture					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
GL01 & GL02 German language and culture	Semesterly	2 Semesters	English/ German	n/a	Total study hours: 175 Taught hours: 63 Self study:112
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
		1. Summative assessment: – Reading – Speaking – Listening – Writing 2. Oral Exam		e.g. Lecture, Seminar, Group work, Role Play, Peer to peer learning	1. Pass/ fail (GL01) 2. Pass/ fail (GL02)
Module Description/ Constructive Alignment					
The module is intended for students who have little or no previous knowledge of German and offers an introduction to the language. Teaching methods are based on interactive language development tasks, such as group work and role playing. It also includes the study of texts, oral development work and listening comprehension exercises. Students are asked to consolidate class work by learning vocabulary and structures, and by reading, watching or listening to material in German. Learning the use of a range of learning aids in a variety of media, such as a reference grammar and bilingual dictionary, to consolidate their learning students will be able to progress faster in accredited German classes during their future studies.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module students will be able to:					
• Enable an elementary level of communicative competence in everyday situations • Develop an awareness of the general social and cultural background of the language					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz					
Upon completion of this module students will be able to:					
• Understand the basic grammatical structures of the German language • Read and comprehend simple written and aural texts and extract specific, predictable information related to everyday situations					

Intnded Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module students will be able to: • Communicate about a variety of general topics requiring a simple and direct exchange of information on familiar and routine matters • Make progress through developing skills of self-study and application and develop an awareness of the diversity of and sensitivity to German culture
Outline Content/ Lerninhalt
Grammar (indicative): • Alphabet and numbers; word order in sentences, questions & polite Imperatives; conjugation in the present tense • Genders of nouns; def./ indef. articles; adverbs of time • Addressing someone in the du-form; interrogative when?' • Verb haben' + Accusative; possessive pronouns • Objects and their genders; use of possessive pronouns; informal & formal ways of addressing people • Expressing likes & dislikes - gern/lieber/am liebsten; ein/kein; verbs + direct object • The time; the days of the week • Use of modal verbs können', müssen', wollen'; prepositions either followed by the accusative or the dative depending on the context • Adjective endings in front of nouns Es gibt' (There is / are) ... + Accusative; adjectives in attributive/ predicative position • Use of the informal Imperative; prepositions zum'/'zur' + Dative • Demonstrative adjectives • Prepositions + Dative / Accusative • The months; subordinate clauses introduced by dass'; use of the past tense forms (past tense of haben / sein + past participle of the verb) Topics (indicative): • Overview of German culture and customs • Regions of Germany • Greeting others and introducing oneself • Daily Routine • At the weekend • At the restaurant • Navigating public transport • Understanding directions and talking about locations in a town • Talking bout past / future dates, travel and accommodation
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: <i>Introduction to Programming</i>					
Course Information/ Kursinformationen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG08 Introduction to Programming	Annually	1 Semester	English		Total study hours: 150 Taught hours: 56 Self-study: 94
Module Leader/ Modulverantwortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
TBC		1. Exam includes MCQ and Coding (2 hours) 2. Presentation and demonstration of Portfolio (10 minutes each student)		Lecture, Seminar, Student Managed Learning	1. Exam: 60% 2. Course work: 40%
Module Description/ Constructive Alignment					
This module introduces students to basic concepts of programming, focusing on Python language. Students will learn basic syntax, control structures and functions, enabling them to write organized and efficient code. The course covers key topics such as data structures, file handling, error handling and an introduction to object-oriented programming (OOP). Students will also gain practical experience with version control using Git, apply basic algorithms to solve problems, and develop a portfolio of projects. Emphasis is placed on practical application, problem-solving, teamwork and effective communication in a programming context. By the end of the module, students will have a solid foundation and be prepared to tackle more advanced topics in programming.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module, students will be able to solve problems, write organized code, use Git for version control, handle data and errors, apply object-oriented principles, develop algorithms, present projects, adapt to new tools and collaborate effectively in a team.					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Upon completion of this module, students will be able to:					
- Distinguish between the different paradigms of programming languages and their effect on language design - Demonstrate knowledge of a range of programming paradigms and example languages such as Python					
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz					

Upon completion of this module, students will be able to: • Apply programming concepts to create functional software applications that address real-world problems • Develop and implement software projects from concept to completion, integrating various programming techniques and tools. • Construct a portfolio of diverse projects demonstrating the practical application of programming skills and knowledge. • Generate creative solutions by applying programming knowledge to novel situations and challenges.
Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Student will effectively communicate technical concepts, collaborate on coding projects using tools like Git, and work efficiently within a team environment.
Outline Content/ Lerninhalt
• Introduction to Programming • Basic Syntax and Variables • Control Structures • Functions • Introduction to Git • Data Structures • File Handling • Error Handling • Introduction to Object-Oriented Programming (OOP) • Basic Algorithms and Problem-Solving • Final Presentation and demonstration of portfolio
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: <i>Physics for Engineers</i>					
Course Information/ Kursinformatio nen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language / Sprache	ECTS points/ ECTS- Punkte	Study hours/ Studentische Arbeitsbelastung
UG09 Physics for Engineers	Annually	1 Semester	English		Total study hours: 150 Taught hours: 56 Self-study: 94
Module Leader/ Modulverantw ortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
TBC		1.Laboratory Report (1200 words) 2. Final exam: (2 hours)		Lectures, Demonstrations, In-class exercises, Laboratory experiments, Student-managed learning.	1. Course work: 40% 2. Exam: 60%
Module Description/ Constructive Alignment					
This module provides students with a solid foundation in the physical sciences to prepare them for their first-year undergraduate studies. Students will primarily solve numerical problems related to engineering. By the end of this module, students will possess the ability to analyse the motion of objects in one and two dimensions with constant acceleration. They will have a good understanding of friction and its impact on moving and static systems. Moreover, they will be acquainted with simple statically determinant systems and capable of calculating forces in equilibrium. Additionally, students will be familiar with the principles of conservation of mechanical energy and conservation of momentum, and they will be able to apply them to simple scenarios.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module, students will be able to think critically and apply their knowledge and understanding of physics to establish the link between theory and physical observation and recognise the quantitative nature of physics and understand how mathematical expressions relate to physical principles. Students will also be able to apply the knowledge of measurement in different context and dimensional analysis and bring together knowledge to illustrate ways in which different areas of physics and engineering relate to each other.					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Upon completion of this module students will be able to:					
- Recall and define the physical laws that govern forces and motion and their relevance to engineering principles - Recall and describe the fundamentals of mechanics and thermos-fluid mechanics - Understand the relevance of kinetic theory to practical engineering applications including the internal combustion engine - Understand the conservation of energy/work laws and their importance in the physical world of engineering.					

- Recall the concept of entropy within physical systems - Understand and determine the physical interaction of light with transmission and reflective mediums
Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz
Upon completion of this module, students will be able to: - Analyse and apply qualitative and quantitative principles to physical phenomena - Proficiently use techniques and technology in the collation, interpretation and presentation of data in written formats - Apply the theory of thermodynamics to practical applications in engineering
Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module, students will be able to: - Provide explanation of key physics concepts and theories. - Able to use appropriate scientific terminology and symbols when describing physical phenomena in reports, presentations, and discussions - To collaborate and value different approaches in problem-solving. - To develop both communication and teamwork skills
Outline Content/ Lerninhalt
- Introduction to physics & measurements, scalar and vector quantities - Forces in equilibrium and momentum - Motion, force and Newton's laws of motion - Work-energy and power - Electricity and electric current - Ohm's law, DC circuits and Kirchhoff's laws - Materials - Fluid dynamics - Physical optics - Friction - Statics - Conservation of mechanical energy - Kinematics in 1D and 2D
Recommended reading/ Empfehlungsliteratur

Name of Module/ Modultitel: <i>Ethics</i>					
Course Information/ Kursinformatio nen	Frequency of delivery/ Häufigkeit des Angebots	Length/ Dauer	Language/ Sprache	ECTS points/ ECTS-Punkte	Study hours/ Studentische Arbeitsbelastung
UG07 Ethics	Annually	1 Semester	English		Total study hours: 150 Taught hours: 56 Self-study: 94
Module Leader/ Modulverantw ortliche(r)/ Lehrende	Credits/ Leistungspunkte	Assessment/ Prüfungsform		Teaching mode and methods/ Lehr- und Lernformen	Prüfungsleistung
		1. Individual Presentation (5 min) 2. Case Study Report 1000 words		Lecture, Seminar, Group work, Flipped classroom	1. Course work 50% 2. Course work 50%
Module Description/ Constructive Alignment					
Ethics is a system of moral principles that affects decision-making, based on what one considers to be ‘right’ and ‘wrong’. Students will be encouraged to use critical thinking and research to discuss descriptive, normative and analytic approaches to ethics and ethical problems. Students will look at a variety of applications to understand the interdependence and intersection between behaving ethically in varying contexts. With respect to ethical questions, students will investigate competing answers to an idea and critically engage with these to examine their strengths and weaknesses. Through case study analysis and own research, students will gain a broad understanding of how ethics can be applied to a variety of subject areas and what questions should be asked to evaluate validity.					
Intended Learning Outcomes – Ability to act/ Transferable skills / Handlungskompetenz					
Upon completion of this module students will be able to: - Employ the tools of critical analysis in their thinking and writing by applying the appropriate resources to support an ethical viewpoint - Know how ethics can be applied to a variety of subject areas and what questions should be asked to evaluate validity					
Intended Learning Outcomes - Knowledge and subject specific understanding / Fachkompetenz					
Upon completion of this module students will be able to: - Recall ethical issues and developments in the main areas of study across the Business, Engineering and Creative fields - Define areas of debate within ethics including the ideas of different thinkers (e.g. Kant, Plato)					

Intended Learning Outcomes – Application and generation of knowledge / Methodenkompetenz
Upon completion of this module students will be able to: • Explain the relevance of ethical approval for practices • Discuss differing viewpoints and their ethical implications and apply these to case studies
Intended Learning Outcomes – Communication and cooperation / Sozialkompetenz
Upon completion of this module students will be able to: • Interrogate claims to understand the nature of acceptable principles in behaviour and treatment from individuals and by different cultures
Outline Content/ Lerninhalt
• Introduction and Course Structure • Media Integrity Ethics • Business and Business Integrity Ethics • Appropriation and Attribution • Systematic Moral Analysis • Challenges to Ethical Living • Important Ethical Terms • Ethical Systems (e.g., Deontology, Utilitarianism) • Ethics in Society • Animal Ethics • Environmental Ethics • Psychology in Ethics • Political Ethics • Mock United Nations
Recommended reading/ Empfehlungsliteratur