



JACOBS
UNIVERSITY



INTERNATIONAL FOUNDATION YEAR

PROGRAM HANDBOOK 2022/2023

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BASIC INFORMATION

- Program Name:** International Foundation Year (IFY)
- Type:** Providing a pathway for access to higher education
- Level:** Level 0 (Pre-university)
- Exit award:** International Foundation Certificate (IFC)
- Award notes:** The Program is offered in three subject areas: Technology, Science and Society at Level 0. Successful achievement of agreed grades in the IFY is recognised by the University as an element in securing progression onto a number of specified undergraduate degree Programs at JU. Students also require an agreed TestAS score for progression.
- Modes of study:** All students will be full-time students. Teaching language is English, and no German knowledge is required for the studies.
- Entry requirements:** All students must be at least 16 years old when entering the program.

Award	Standard entry requirements
International Foundation Certificate (IFC)	CEFR B2/5.5 IELTS (or equivalent)
	Minimum academic requirement is a High School Diploma/Certificate recognized as a higher education entrance qualification in Germany. Recognition is determined following guidance of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany ("Kultusministerkonferenz", KMK) and the State of Bremen.

PROGRAM OVERVIEW

THE JACOBS UNIVERSITY EDUCATIONAL CONCEPT

Jacobs University aims at educating students for both an academic and a professional career, putting an emphasis on four core objectives: academic quality, self-development/personal growth, internationality and the ability to succeed in the working world (employability). Hence, undergraduate study programs at Jacobs University offer a comprehensive, structured approach to prepare students for graduate education as well as career success by combining disciplinary depth and interdisciplinary breadth supplemented with skills education and extra-curricular elements.

In this context, it is Jacobs University's aim to educate talented young people from all over the world, regardless of nationality, religion, and material prerequisites, to become citizens of the world who are able to take responsible roles for a democratic, peaceful, and sustainable development of the societies they live in. This is achieved employing high levels of teaching quality as well as manageable study loads and supportive study conditions. Undergraduate study programs and related study abroad programs convey academic knowledge as well as the ability to interact positively with other individuals and groups in culturally diverse environments. The ability to succeed in the working world is a core objective both in terms of the actual disciplinary subject matter but also with regard to social skills and intercultural competence. Study-program-specific modules and additional specializations provide the necessary depth, interdisciplinary offerings and the minor option provide breadth while university-wide general foundation and methods modules, mandatory German language requirements, and an extended internship period strengthen the employability of students. The concept of living and learning together on an international campus with many cultural and social activities supplements this education. In addition to that, Jacobs University offers professional advising and counselling, as well as other guidance services.

Jacob University's educational concept is appreciated both nationally and internationally. While the university has consistently achieved top marks over the last decade in Germany's most comprehensive and detailed university ranking by the Centre for Higher Education (CHE), it has also been listed by the renowned Times Higher Education (THE) magazine as one of the top 300 universities worldwide in 2020. The THE Ranking is considered as one of the most widely observed university rankings. It is based on five major indicators: research, teaching, research impact, international orientation, and the volume of research income from industry.

PROGRAM - SPECIFIC EDUCATIONAL AIMS

The International Foundation Year is a pre-university preparatory program, enabling young students from all over the world to enhance their English language capabilities, develop study skills appropriate to a Higher Education environment and acclimate to living and studying in another country where cultural context is very different from their own. Alongside language and skill development, students working towards the International Foundation Certificate are also

able to study content modules in the subject area directly related to undergraduate Programs onto which they wish to progress. They are therefore able to move onto first year degree studies with increased confidence in their English language skills, university study skills and subject knowledge. Students are able to take the TESTAS entrance exam during their International Foundation Year should they need to do so. The IFY program also includes a custom designed Personal Development Program that supports students to learn more about themselves through acquiring the needed soft skills to achieve both academic and work success. The program includes study skills and career orientated guidance to assist them in their decision for UGE.

QUALIFICATION AIMS

The International Foundation Year program at Jacobs University aims to help students:

- develop academic reading, writing, and reasoning skills by offering academic English classes at different levels with an introduction to scientific methods;
- improve mathematical competence by providing intensive mathematics and statistics training;
- bolster foundational knowledge required for their academic discipline of choice;
- train for the TESTAS exam;
- improve their coding skills and computer literacy;
- develop knowledge and understanding of specialized subject areas studied;
- recognize what is expected of them in a university environment;
- take part in some modules offered in the undergraduate program that would best suit their interests, thus providing an access route to Higher Education for international learners who want to study at a university undergraduate level but who, on joining the International Foundation Year, either lack the necessary academic and linguistic qualifications for direct entry access, or wish to spend a year confirming their choice of degree;
- expand their academic and personal qualifications through academic advising and participation in a personal development program customized to the needs of an International Foundation Year student;
- broaden socio-cultural horizons and intercultural skills through study trips, on-site visits and involvement in the diverse international campus community.

INTENDED LEARNING OUTCOMES

By the end of the program, students will be able to

- understand what is expected of them in a university environment;
- choose a study direction they would like to pursue;
- apply improved academic English thinking, reading and writing skills in an academic context;
- use improved mathematics skills to solve applied problems;
- use digital devices to create, gather, analyze and present information;
- learn and work in an intercultural and diverse environment;
- reflect on their personal and professional development.



PROGRAM STRUCTURE

All International Foundation Year (IFY) students study a combination of core modules and subject area modules. All IFY students attend core modules including English, Mathematics, Coding and Computational Thinking, and Personal Development. A mandatory elective TESTAS Training is provided. Furthermore, the IFY students choose one of the following two pathways, depending on their academic and personal development goals:

A | Qualification Pathway

The students who already know what degree program they would like to study but are not academically qualified for direct entry to Jacobs University Bremen are guided onto the Qualification pathway. The IFY offers three subject areas to choose from: Technology, Sciences and Society. The qualification pathway enables the selection of two modules in the same subject area (1 module in the first semester and 1 in the second semester) preparing them with the academic skills needed for their direction of study. More importantly, they will receive preparation for the qualification exam they need to complete for their direction of studies. Students will be guided by the academic staff on their individual study direction and the qualification requirements to ensure guaranteed admission to the university's undergraduate programs. These subject areas will provide students with a route into a degree at Jacobs University Bremen. Students also have the unique opportunity to take part in an undergraduate module of their choosing to gain experience and/or transfer credits. Students have the freedom to choose any first-year module which could contribute to their major or minor.

B | Orientation Pathway

The students who are unsure about what to study and would like to explore a variety of subjects in order to get some insight for them to make the right undergraduate study program choice are guided onto the Orientation pathway. The IFY offers three subject areas to choose from: Technology, Sciences and Society. The orientation pathway enables the selection of modules in different subject areas (1 module in the first semester and 1 in the second semester) preparing them with the academic skills needed for their direction of study while providing them with the opportunity to explore between subject direction. Thus, students can freely choose how to distribute the required 2 subject area modules among the subject areas. These subject areas will provide students with a route into a degree at Jacobs University Bremen guided by academic staff to assist them in their decision of study direction. Students also have the unique opportunity to take part in an Undergraduate module of their choosing to gain experience or transfer credits. Students have the freedom to choose any first-year module which could contribute to their major or minor.

TEACHING, LEARNING AND ASSESSMENT STRATEGIES

The International Foundation Year is implementing a range of state-of-the-art approaches to teaching, learning and assessment. Students and their personal development are at the heart of these strategies:

A | The IFY students are provided with a highly supportive and academically challenging environment to develop English language and university study skills. The pre-university preparatory program provides not only core preparatory skills, but also subject-specific modules related to the students' intended degree choices.

- B I** Students will benefit from a less formal teaching approach, involving greater interactivity within classes and between students and teachers, more questioning of received opinion and a significant step towards establishing the students as autonomous learners. Students' confidence is boosted through working in discrete and small teaching groups, by the promotion of student participation in a supportive and encouraging environment, and by devoting time in formal classes to reinforcement of material studied.
- C I** Cultural acclimation to a higher education environment is facilitated through encouragement to participate in the wider community of both JU and Bremen itself.
- D I** The International Foundation Year aims to cater both for students who are sure of the degree subject they wish to follow and those who are still undecided. For the first group the different subject areas offer a subject focused module over two semesters, which provides direct preparation for the chosen degree Program. For those still uncertain there is the opportunity of taking IFY modules from two different subject areas during the two semesters of the International Foundation Year.
- E I** Alongside the modules, students are engaged in a Personal Development Program, which provides ample opportunity for students to be introduced to and reflect on the requirements of study in a higher education environment. The Personal Development Program includes a focus on academic and life skills of a wider purpose which help prepare students not only for degree studies but also for campus community interaction and a considered, professional approach to life, studies, and the job market.
- F I** Regular tutorial sessions provide an opportunity for students to reflect on their study progress, and for the instructor to monitor this progress and provide any additional support the student might need to strengthen weaker knowledge areas.
- G I** A range of modes of assessment are applied to include assignments, group and individual presentations, projects, and interim tests, on order to replicate the wider university experience. Midterm and final module assessments provide the contribution to the final module grade.

REGULATIONS

Students studying the IFY follow a set of regulations appropriate to a Level 0 Program but modelled to JU's undergraduate students. Variations are only introduced to cover the particular requirements of a pre-university Program, in particular around re-assessment opportunities.

To progress from the Program onto JU's degrees, students will need to pass all modules with a minimum of 45%. In addition, they will need an agreed TESTAS score of 190 points, if they do not possess an Abitur or equivalent. The final examination of the respective IFY subject area serves as well as the Entrance Examination for University Admission at Jacobs University for Applicants qualified abroad, according to the Bildungsausländerhochschulzugangsverordnung (BAHZV). To join the Foundation studies, students will have already achieved the English language requirement of the University for direct entry.

ADMISSION REQUIREMENTS

All students who obtain a high school diploma or local equivalent prior to the start of the program and who possess English language skills equivalent to the B1 level of the European Framework may apply for the International Foundation Year. The application process is selective and seeks out motivated students who show both the intellectual and social potential to thrive in a diverse international study environment.

A complete International Foundation Year application consists of the following:

- Online Application Form including a Personal Motivation Statement
- Recommendation Letter from a counselor or teacher
- Certified copies of school transcripts of the last 2-3 years and a certified copy of the High School Certificate
- Educational History Form
- Proof of English Language Proficiency (minimum score of 65 on the TOEFL iBT / 5.5 on the IELTS (UK) / 46 on the Pearson PTE Academic or the Cambridge Certificate (FCE) / 90 on the Duolingo English test)

Please note for the Fall 2022 intake: Students who require a visa for Germany should apply by June 15th since the visa process can take up to two months. The application deadline for EU students is August 1. Applications are evaluated on a rolling basis.

MORE INFORMATION AND CONTACT

INTERNATIONAL FOUNDATION YEAR TEAM AT JACOBS UNIVERSITY

Email: foundationyear@jacobs-university.de



THE CURRICULAR STRUCTURE

OVERVIEW

The International Foundation Year (IFY) program offers core modules, which are mandatory for all students and subject area modules, which are mandatory elective. The IFY students have two different pathways they can choose from: The Qualification Pathway and the Orientation Pathway.

In the Qualification Pathway, all subject area modules and qualification exams within one subject area need to be passed. In the Orientation Pathway the students may choose two different modules from the different subject areas. The chosen first semester subject module does not postulate any restrictions for the second semester choices unless they are prerequisites for further courses. The subject areas are Technology, Sciences and Society. The standard model for a pathway in the IFY is based on 2.5-5 ECTS credit point (CP) modules. A total of 55 credit points overall is achieved through the successful study of five core modules and two modules by subject area. Including a total of 15 credit points which are available by choice and transferable through the completion of two undergraduate modules per academic year.

All these modules are all delivered and assessed within each semester and are available for compensation and re-assessment in line with the regulations covering study at Level 0.

CORE MODULES

English & Academic Literacy (10 credit points)

The language learning content is skills based and maps against IELTS level descriptors for Band 6 in Writing, Reading, Listening and Speaking. In each of their two semesters all students take a module in which the focus is on greater fluency in English language skills and improved academic study skills. In the first semester, the module focus on building a strong foundation of academic English proficiency and in the second semester, students are introduced to the scientific approach to study with an emphasis on higher-level skills such as analysis, synthesis, critical thinking and evaluation.

Basic/Advanced Mathematics (5 credit points)

These modules revise high school material in mathematics and strengthen the understanding of major topics required for successful undergraduate study. Students are placed in one of the modules, Basic Mathematics or Advanced Mathematics, delivered in Semester one of the Program, depending on their study direction and performance on a Mathematics Aptitude Test upon arrival. The intention is to consolidate their basic skills before tackling the subject-specific Mathematics modules in Semester two of the subject areas.

Pure Mathematics (5 credit points)

This second semester module is a follow-up for 'Advanced Mathematics' and is a mandatory module for students in the subject areas 'Sciences' and 'Technology'. Since advanced mathematical skills are essential for students in these subject areas, 'Pure Mathematics' provides them with the essential knowledge and tools to be properly prepared for the respective undergraduate degrees at Jacobs University. The course covers main topics in introductory algebra and calculus, and the study sessions include extensive problem solving as well as tutorials.

Foundation Statistics (5 credit points)

This second semester module is essential for students continuing their studies within the subject area 'Society', particularly in the areas of business and management, logistics, and social sciences and humanities. Fundamental knowledge in statistics is essential for degrees within these areas, and this is what the module 'Foundation Statistics' provide for student on that pathway. The course covers main topics in statistical analysis and probability, sampling and confidence limits, as well as correlation and regression. The study sessions include extensive application of statistical concepts on applied models.

Coding and Computational Thinking (5 credit points)

This module is delivered in the first and second semester of the International Foundation Year. Students will analyze problems, refine concepts, and reflect upon the decision-making process by engaging in design, coding and computational thinking, and sustainable action. They will identify, explore, and clarify technology information and use that knowledge in various situations and challenges. Learners get information about modern and in-demand programming languages in the world. It further helps in experimenting, drawing, modelling, designing, and working with digital tools and includes basic concepts of coding.

TESTAS Preparation (2.5 credit points)

This module is designed to prepare students for the TESTAS exam, particularly those students who are identified to be on the qualification pathway who are not academically qualified for direct entry to Jacobs University Bremen. The IFY prepares and allows those students to take the TESTAS during the first semester of the academic year. This exam tests students within their direction of study along with core skills needed for entry to tertiary education in Germany.

Personal Development Program (2.5 credit points)

This program forms part of the core modules which are mandatory for all students offered in the second semester. The program is designed to support and guide students within their study-direction while focusing on the potential career paths these may lead into. It further enables students to attain the needed study skills to succeed at university while focusing on their individual and cultural awareness supporting them to flourish at Jacobs University and within the global working environment.

MODULES BY SUBJECT AREA

SUBJECT AREA TECHNOLOGY

Computer Systems (5 credit points)

This module introduces students to the structure and components of a computer system and the key components and responsibilities of an operating system. Providing students with an understanding of how computers and their Windows Operating systems and Linux Operating systems work will equip them with a good grounding for their degree studies.

Fundamentals of Programming with Python 3 (5 credit points)

This module introduces students to the process of programming. The general principles of the Python 3 programming language are outlined, and students develop their programming skills by learning to program using Python 3. The teaching approach will involve some theory and trouble-shooting sessions but will feature a significant number of hours engaged in the practical work involved in learning and working with Python 3.

SUBJECT AREA SCIENCES

Foundation Chemistry (5 credit points)

Chemistry is an essential discipline for any student wanting to continue their studies in natural, physical, and biological sciences at Jacobs University. The first semester module 'Foundation Chemistry' hence provides the students within the subject area 'Sciences' with an overall and basic knowledge of the various fields within chemistry. Topics covered include fundamental aspects of general, analytical, inorganic, physical, and organic chemistry. The study sessions will be supplemented with a first overview on research methods within chemistry.

Foundation Physics (5 credit points)

Alongside chemistry, physics is a complementary discipline in science, and a basic knowledge of main topics in physics is a requirement for students to start their undergraduate studies at Jacobs within the different scientific degrees. The second semester module 'Foundation Physics' provides the students within such knowledge, and covers areas within mechanics, thermodynamics, optics, and quantum and nuclear physics among others. Same as with 'Foundation Chemistry', this course also gives a first impression of research within physics.

SUBJECT AREA SOCIETY

Foundation Economics (5 credit points)

This module introduces students to political economy, macroeconomics and microeconomics, and their differences. The course considers economic aspects of production, distribution and consumption of goods and services, introduces the idea of markets as places for economic transactions, including supply and demand, and explains the role of money in a society. Foundation Economics is a subject specific module within the 'Society' subject area and is

provided in the first semester of their foundation year. The course aims to provide students with the appropriate foundation in economic theory and economic history, and to enable them to be successful in their later related undergraduate studies in the fields of Business, Industrial Engineering or Social Sciences.

Financial Accounting (5 credit points)

This module aims to introduce students to the basic mechanics and processes of financial accounting in both theory and practice, including bookkeeping. It further helps students to understand the importance of financial accounting procedures and the resulting financial statements for running a business. Financial Accounting is a subject specific module within the 'Society' subject area and is provided in the second semester of their foundation year. This course provides them the needed foundation and to enable them to be successful in their later related undergraduate studies in the fields of Business, Industrial Engineering or Social Sciences.



SCHEMATIC STUDY PLAN

 QUALIFICATION PATHWAY – CHOOSE ONE SPECIFIC SUBJECT AREA			
	TECHNOLOGY	SCIENCE	SOCIETY
1st semester	English & Academic Literacy I m, 5.0 CP	English & Academic Literacy I m, 5.0 CP	English & Academic Literacy I m, 5.0 CP
	Advanced Mathematics me, 5.0 CP	Advanced Mathematics me, 5.0 CP	Basic Mathematics or Advanced Mathematics me, 5.0 CP
	Coding & Computational Thinking I m, 2.5 CP	Coding & Computational Thinking I m, 2.5 CP	Coding & Computational Thinking I m, 2.5 CP
	TESTAS Preparation me, 2.5 CP	TESTAS Preparation me, 2.5 CP	TESTAS Preparation me, 2.5 CP
	Computer Systems me, 5 CP	Foundation Chemistry me, 5 CP	Foundation Economics me, 5 CP
	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS
2nd semester	English & Academic Literacy II m, 5.0 CP	English & Academic Literacy II m, 5.0 CP	English & Academic Literacy II m, 5.0 CP
	Pure Mathematics me, 5.0 CP	Pure Mathematics me, 5.0 CP	Foundation Statistics me, 5.0 CP
	Coding & Computational Thinking II m, 2.5 CP	Coding & Computational Thinking II m, 2.5 CP	Coding & Computational Thinking II m, 2.5 CP
	Personal Development m, 2.5 CP	Personal Development m, 2.5 CP	Personal Development m, 2.5 CP
	Foundation Programming me, 5 CP	Foundation Physics me, 5 CP	Financial Accounting me, 5 CP
	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS

 ORIENTATION PATHWAY – EXPLORE DIFFERENT SUBJECT AREAS			
	TECHNOLOGY	SCIENCE	SOCIETY
1st semester	English & Academic Literacy I m, 5.0 CP	English & Academic Literacy I m, 5.0 CP	English & Academic Literacy I m, 5.0 CP
	Advanced Mathematics me, 5.0 CP	Advanced Mathematics me, 5.0 CP	Basic Mathematics or Advanced Mathematics me, 5.0 CP
	Coding & Computational Thinking I m, 2.5 CP	Coding & Computational Thinking I m, 2.5 CP	Coding & Computational Thinking I m, 2.5 CP
	Language choice (optional) e, 2.5 ECTS	Language choice (optional) e, 2.5 ECTS	Language choice (optional) e, 2.5 ECTS
	Computer Systems me, 5 CP	Foundation Chemistry me, 5 CP	Foundation Economics me, 5 CP
	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS
2nd semester	English & Academic Literacy II m, 5.0 CP	English & Academic Literacy II m, 5.0 CP	English & Academic Literacy II m, 5.0 CP
	Pure Mathematics me, 5.0 CP	Pure Mathematics me, 5.0 CP	Foundation Statistics me, 5.0 CP
	Coding & Computational Thinking II m, 2.5 CP	Coding & Computational Thinking II m, 2.5 CP	Coding & Computational Thinking II m, 2.5 CP
	Personal Development m, 2.5 CP	Personal Development m, 2.5 CP	Personal Development m, 2.5 CP
	Foundation Programming me, 5 CP	Foundation Physics me, 5 CP	Financial Accounting me, 5 CP
	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS	UGE choice e, 7.5 ECTS

(Abbreviations: me=mandatory elective, m=mandatory, e=elective, CP=credit points)

MODULE DESCRIPTIONS

CORE MODULES (1ST SEMESTER)

Module Name ACADEMIC ENGLISH AND LITERACY I		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator FYI Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module Semester one of the Program 		Mandatory Status Mandatory for all students	
Entry Requirements <i>Pre-requisites</i>	<i>Co-requisites</i>	<i>Knowledge, Abilities, or Skills</i>	Frequency	Forms of Learning and Teaching
<input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<input type="checkbox"/> <input checked="" type="checkbox"/> None	<ul style="list-style-type: none"> ■ English level at CEFR B2/IELTS 5.5 ■ Basic English language and academic study skills 	Once a year, Fall semester	<ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One semester	Workload 125 hours
Recommendations for Preparation				
Students taking this module will have tested for English level CEFR B2/IELTS 5.5 at the application stage. Preparation prior to arrival would include an outline list of the topics to be studied during the module and a supporting reading list.				
Content and Educational Aims				
The aim of this module is the development of the English skills of international students joining the International Foundation Year with the aim of achieving at least the equivalent of IELTS 6.0 for continuation onto the second semester of their International Foundation Year. Through this module the students are made aware of the critical importance of English competence in the context of their on-going academic studies.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Read extended academic texts, make decisions on usefulness of content and extract information appropriate to context ■ Write extended pieces of academic writing about the requirements and conventions of good academic practice ■ Listen interactively in classes, whether in seminar, laboratory, or workshop settings, to items of varying length and complexity and develop the ability to seek clarification and exemplification ■ Participate in academic discourse as both an information provider and gatherer ■ Develop critical reading skills, recognizing points of view and bias, and interpreting information ■ Synthesize information from listening and reading texts ■ Successfully participate in seminar discussion 				

- Demonstrate basic research, speaking and presentational skills
- Cite and refer to academic sources in written and oral form
- Expand vocabulary to be applied in an academic context

Usability and Relationship to other Modules

Academic English & Literacy I is a CORE module studied during the first semester by all students joining the International Foundation Year. It prepares student with the proper English knowledge for proper studies in other modules as well as in their undergraduate studies.

Assessment

Coursework essay and presentation

Scope: Material studied during the semester and covered by the respective Learning Outcomes

Weight: 40%

Unseen Reading and Listening Examination

Scope: Demonstrates achievement of all Learning Outcomes

Weight: 60%

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name BASIC MATHEMATICS		Module Code(s) To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ Core module during Semester One of the Program 		Mandatory Status Mandatory prerequisite for 'Statistics for Business and Social Sciences'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> Basic knowledge of Mathematics on the high school level	Frequency Once a year, Fall semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One semester	
Recommendations for Preparation				
Students should review their basic mathematical skills from high school to get prepared for the course. Course slides and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the first semester Mathematics CORE module for students of the 'Human' study subjects. It is also a prerequisite course for 'Statistics for Business and Social Sciences'. It introduces the fundamental aspects and basic requirements of mathematical concepts for students interested in continuing their studies within business and humanities. The module content covers main areas in prealgebra and precalculus. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to <ul style="list-style-type: none"> ■ Perform basic mathematical operations ■ Apply their knowledge in the most efficient way through solving exercises ■ Learn how to use mathematics to model and solve everyday problems ■ Understand the concepts of rational and irrational numbers ■ Use their mathematical knowledge to solve linear and quadratic equations ■ Graph linear equations and inequalities ■ Know the basics of probability and statistics ■ Develop and factorize polynomial and rational expressions ■ Use trigonometry to perform vector operations ■ Calculate the area and volume of fundamental geometrical shapes 				
Usability and Relationship to other Modules				
Basic Mathematics prepares students for the following Mathematics CORE module 'Statistics for Business and Social Sciences', it is also providing the fundamental mathematical tools for other modules within the 'Human' subject area.				

Assessment

Two unseen examinations: a Midterm and a Final Exam

Scope: Topics studied as covered by the Learning Outcomes

Weight: 40% Midterm Exam
 60% Final Exam

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name ADVANCED MATHEMATICS		Module Code(s) To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module during Semester One of the Program 		Mandatory Status Mandatory prerequisite for 'Pure Mathematics'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> Advanced knowledge of Mathematics on the high school level	Frequency Once a year, Fall semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One Semester	
Recommendations for Preparation				
Students should review their mathematical skills from high school to get prepared for the course. Course slides and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the first semester Mathematics CORE module for students of the 'Technology' and 'Sciences' subject areas. It is also a prerequisite course for 'Pure Mathematics'. It introduces the needed aspects and requirements of mathematical knowledge for students interested in continuing their studies within sciences, engineering, and technology. The module content covers main areas in introductory algebra and calculus. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Perform advanced mathematical operations ■ Apply their knowledge in the most efficient way through solving exercises ■ Learn how to use mathematics to model and solve everyday problems ■ Solve and graph linear and quadratic equations and inequalities ■ Identify polynomial functions ■ Factor quadratic functions using different methods ■ Explain roots, exponentials, and logarithms ■ Use the unit circle approach to explain and graph trigonometric functions ■ Work with trigonometric equations and identities ■ Perform vector operations 				
Usability and Relationship to other Modules				
Advanced Mathematics prepares students for the following Mathematics CORE module 'Pure Mathematics', it is also providing the fundamental mathematical tools for other modules within the 'Sciences' and 'Technology' subject areas.				

Assessment

Two unseen examinations: a Midterm and a Final Exam

Scope: Topics studied as covered by the Learning Outcomes

Weight: 40% Midterm Exam
 60% Final Exam

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name COMPUTATIONAL THINKING AND CODING I		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 2.5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	2.5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ▪ International Foundation Year ▪ CORE module during Semester One of the Program 		Mandatory Status Mandatory for all IFY students	
Entry Requirements <i>Pre-requisites</i> High School Diploma None	<i>Co-requisites</i> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ▪ Basic understanding of computer hardware and software/applications ▪ Basic practical skills in IT 	Frequency Once a year, Fall semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ▪ Tutor-led but interactive classes (21 hours) ▪ Tutor-led Tutorials (7 hours) ▪ Directed and independent learning (34.5 hours)
			Duration One semester	Workload 62.5 hours
Recommendations for Preparation				
Students taking this module may not have had formal teaching in use of computers and software appropriate to academic studies. Early classes on this module will provide opportunities for students to demonstrate where they stand in knowledge and skills in this area.				
Content and Educational Aims				
This is the first-semester Computing CORE module for students of the 'Technology' subject direction. It is also a prerequisite course for the CTC CORE module II and provides the fundamental Computational tools for the student interested in any major. It introduces the fundamental aspects and basic requirements of computing concepts for students interested in continuing their studies with all subject-areas. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to <ul style="list-style-type: none"> ▪ Improve your ability to develop effective algorithms, ▪ Organize and analyze data logically. ▪ Use abstractions to represent data. ▪ Demonstrate an understanding of good academic practice particularly in the contexts of referencing and the avoidance of plagiarism ▪ Use the Internet critically as a research tool and evaluate material accessed in the context of their wider research ▪ Demonstrate a facility with word processor in producing and enhancing documents and apply spreadsheet formulas to analyses data in Excel ▪ Improve the use of your existing programming language, ▪ Allow a better choice of programming language, ▪ Learn a new language on a basic level ▪ Design a new language on a basic level 				
Usability and Relationship to other Modules				
Computational Thinking and Coding is a CORE module studied in the first semester by students joining the IFY program. It is a universal module which relates to all subject areas, as computational thinking and coding is now being used in all disciplines and areas.				

Assessment

Interim Test

Scope: Theory studied as covered by the respective Learning Outcomes

Weight: 40%

Unseen examination

Scope: Demonstrates achievement of all Learning Outcomes

Weight: 60%

Students are required to pass the module with at least 45% to pass the International Foundation Year overall and be able to move on to the degree studies at Jacobs University.

Module Name TESTAS TRAINING		Module Code	Level (type)	ECTS
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Training Sessions		Tutor-led	
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ Common module for all subject areas 		Mandatory Status Mandatory for students on the 'Qualification' pathway	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> Basic high school skills	Frequency Once a year, Fall semester.	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led training (21 hours) ■ Directed and independent training (41.5 hours)
			Duration One semester	
Recommendations for Preparation				
Students should review their overall high school knowledge as a general preparation for the module. No special preparation is needed the training sessions.				
Content and Educational Aims				
This first semester module prepares all students for the TestAS exam which a needed component for admissions to undergraduate studies at Jacobs University.				
Intended Learning Outcomes				
<p>By the end of this module, students will be able to</p> <ul style="list-style-type: none"> ■ Prepare properly for the TestAS entrance exam ■ Get informed about the different modules and subjects within the test ■ Practice TestAS questions through training session ■ Review the main information needed for the TestAS exam ■ Train for the core module tests in figure sequences, mathematical equations, and Latin squares ■ Train for the subject-specific modules in the different areas of life and medical sciences ■ Train for the subject-specific modules in the different areas of natural and computer sciences ■ Train for the subject-specific modules in the different areas of engineering ■ Train for the subject-specific modules in the different areas of economics ■ Train for the subject-specific modules in the different areas of humanities and social sciences 				
Usability and Relationship to other Modules				
The TestAS Training module is essential for students of all subject areas in order to pass the entrance exam to undergraduate studies at Jacobs University.				
Assessment				
<p>Digital/Paper based TestAS</p> <p>The digital TestAS consists of two examination parts: the Core Module tests the general aptitude to study; the field of study-related modules test the field of study-specific aptitude.</p>				



CORE MODULES (2ND SEMESTER)

Module Name ACADEMIC ENGLISH AND LITERACY II		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator FYI Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module Semester two of the Program 		Mandatory Status Mandatory for all students	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> Academic English and Literacy I <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ■ English language skills from Academic English I 	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration 1 semester	Workload 125 hours
Recommendations for Preparation				
Students taking this module will have attained an English level equivalent to CEFR B2/IELTS 6.0 by successful completion of the Academic English and Literacy I. Preparation prior to commencing the module would include an outline list of the topics to be studied and a supporting reading list.				
Content and Educational Aims				
The module aims to introduce and develop students' understanding of use of language in a work context. Students explore and interpret relevant source materials and use these and other learning materials to develop the practice of using case studies to enhance their understanding of how professionals work in practice. Throughout the module students work continually on developing the language skills of writing, reading, listening, and speaking towards achieving the level of borderline CEFR B2/A1 or IELTS 6.5.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Read extended academic texts, make decisions on usefulness of content and extract information appropriate to context ■ Write extended pieces of academic writing about the requirements and conventions of good academic practice ■ Listen interactively in classes, whether in seminar, laboratory, or workshop settings, to items of varying length and complexity and develop the ability to seek clarification and exemplification ■ Participate in academic discourse as both an information provider and gatherer ■ Develop critical reading skills, recognizing points of view and bias, and interpreting information ■ Synthesize information from listening and reading texts ■ Successfully participate in seminar discussion ■ Demonstrate basic research, speaking and presentational skills ■ Cite and refer to academic sources in written and oral form ■ Expand vocabulary to be applied in an academic context 				
Usability and Relationship to other Modules				
English for Academic Purposes II is a CORE module studied during the first semester by all students joining the International Foundation Year. It prepares student with the proper English knowledge for proper studies in other modules as well as in their undergraduate studies.				

Assessment

Coursework essay and presentation

Scope: Material studied during the semester and covered by the Learning Outcomes

Weight: 40%

Unseen Reading and Listening Examination

Scope: Demonstrates achievement of all Learning Outcomes

Weight: 60%

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name FOUNDATION STATISTICS		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module Semester two of the Program 		Mandatory Status Mandatory for students within the 'Society' subject area.	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> Basic Mathematics <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> Mathematical knowledge acquired from the prerequisite module 'Basic Mathematics'	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One semester	Workload 125 hours
Recommendations for Preparation				
Students need to review the mathematical knowledge acquired from the prerequisite course 'Basic Mathematics'. Course slides and book chapters are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the second semester Mathematics CORE module for students of the 'Society' subject area. It introduces the fundamental aspects and basic requirements of statistical concepts for students interested in continuing their studies in the disciplines within business, economics, and social sciences. The module content covers main areas in statistical analysis, probability, and sampling and correlation methods. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to <ul style="list-style-type: none"> ■ Perform basic statistical operations ■ Apply their knowledge in the most efficient way through solving problems ■ Learn how to use statistics in applied case studies ■ Improve presentation skills of statistical projects ■ Analyze datasets through respective distribution tables and charts ■ Use discrete and continuous probability distributions ■ Explain the different types of sampling methods and their practicality ■ Use tests to evaluate the confidence levels of sampling methods ■ Correlate data variables and analyze their regression ■ Prepare properly for an undergraduate program which includes statistical methods 				
Usability and Relationship to other Modules				
Statistics for Business and social sciences is a CORE module for all students who are interested in continuing their studies in the different areas of business, social science and humanities. It enables the students, with the fundamental needed knowledge in statistics, to enhance their performance within modules that require such knowledge, like economics for example. Nowadays, statistics is used in almost all social and natural scientific disciplines.				

Assessment

Case study providing opportunity to demonstrate gathering, analysis and presentation of statistical information
Scope: Demonstrates achievement of Learning Outcomes related to analysis and presentation of statistical data
Weight: 40%

Unseen Final Exam
Scope: Topics studied as covered by all Learning Outcomes
Weight: 60%

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name PURE MATHEMATICS		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module during Semester two of the Program 		Mandatory Status Mandatory for subject areas 'Sciences' and 'Technology'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> Advanced Mathematics <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> Mathematical skills gained from the prerequisite course 'Advanced Mathematics'	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One semester	
Recommendations for Preparation				
Students should review their mathematical skills from 'Advanced Mathematics' to get prepared for the course. Course slides and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the second semester Mathematics CORE module for students of the 'Technology' and 'Sciences' study subjects. It follows the prerequisite course 'Advanced Mathematics'. It develops the fundamental mathematical skills for students interested in continuing their studies within sciences, engineering, and technology. The module content covers further areas in introductory algebra and calculus. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Perform advanced mathematical operations ■ Apply their knowledge in the most efficient way through solving exercises ■ Learn how to use mathematics to model and solve everyday problems ■ Factor polynomial functions using synthetic division ■ Graph polynomial and rational functions and inequalities ■ Solve systems of equation using various methods ■ Develop exponential binomials and sequences ■ Determine limits of various types of functions ■ Derive and perform derivative operations on functions ■ Apply differentiation and integration to mathematical problems and models 				
Usability and Relationship to other Modules				
Pure Mathematics provides students with advanced mathematical tools within science and engineering areas which require developed mathematical knowledge, it also prepares students for the first-year undergraduate modules within the areas of sciences, engineering, and technology.				

Assessment

Two unseen examinations: a Midterm and a Final Exam

Scope: Topics studied as covered by the Learning Outcomes

Weight: 40% Midterm Exam
 60% Final Exam

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name COMPUTATIONAL THINKING AND CODING II		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 2.5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	2.5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE module during Semester two of the International Foundation Year 		Mandatory Status Mandatory for all IFY students	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> Computational Thinking and Coding I <input type="checkbox"/> None	<i>Co-requisites</i> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ■ basic understanding of computing concepts and algorithms ■ Basic practical skills in programming Language 	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (21 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (34.5 hours)
			Duration One semester	Workload 62.5 hours
Recommendations for Preparation				
Students should review their basic computational thinking as a means of problem solving in abstract ways has the potential to enhance programming skills. Course material and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the Second semester CORE module for students of the 'Technology' subject area. It aims to provide students with an understanding of the role computation can play in solving problems. It also aims to help students, regardless of their major, to feel justifiably confident of their ability to write small programs that allow them to accomplish specific tasks. the module content covers main areas in the pragmatic aspects of programming languages. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to <ul style="list-style-type: none"> ■ Understand the basic computational thinking concepts and practices, including abstraction, algorithm, and automation. ■ Possess the ability to develop programs and process data to solve problem. ■ Understand the process of problem solving and limitations of coding. ■ Automating solutions through algorithmic thinking. ■ Connect coding with real-life problems and other subjects. ■ Solve problems through communication and collaboration with teamwork effectively in the process. ■ Formulating problems in a solvable way. ■ Automating solutions through algorithmic thinking. ■ Identifying, analyzing, and implementing possible solutions with the goal of achieving the most efficient and effective combination of steps and resources. ■ Position students so that they can compete for research projects and excel in subjects with programming components 				
Usability and Relationship to other Modules				
Computational Thinking and Coding II is a CORE module studied in the first semester by students joining the IFY program. It is a universal module which relates to all subject areas, as computational thinking and coding is now being used in all disciplines and areas.				

Assessment

Interim Test for coursework tasks set during the term

Scope: Theory and practical studied as covered by the respective Learning Outcomes

Weight: 40%

Type: Unseen examination

Scope: Demonstrates achievement of Learning Outcomes during the term

Weight: 60%

Students are required to pass the module with at least 45% to pass the International Foundation Year overall and be able to move on to the degree studies at Jacobs University.

Module Name PERSONAL DEVELOPMENT		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 2.5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	2.5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ CORE Module Semester two of the Program 		Mandatory Status Mandatory for all IFY students	
Entry Requirements <i>Pre-requisites</i> <input type="checkbox"/> High School Diploma <input checked="" type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ■ None required 	Frequency Once a year, Spring semester.	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (18 hours) ■ Directed and independent learning (44.5 hours)
			Duration One semester	Workload 62.5 hours
Recommendations for Preparation				
Students should read their intended undergraduate program handbook and connect with an undergraduate or post graduate student involved in that particular direction.				
Content and Educational Aims				
This is the second semester CORE module for students of all disciplines. The Personal Development program will embody the mission statement of Jacobs University. As such, the program will focus on increasing the self-competence and career skills of its FY students in a community characterized by diversity. The program is developed and based on FY students specific needs to flourish within Jacob's University educational and diverse environment. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
<ul style="list-style-type: none"> ■ Gain social and cultural awareness ■ Understand and appreciate diversity ■ Gain self-awareness to develop self-competence ■ Develop critical and strategic thinking ■ Understand, research, and gain valuable insights within a selected study direction/career path ■ Learn how to work in a team ■ Develop presentation skills ■ Develop study skills needed to succeed at university 				
Usability and Relationship to other Modules				
The personal development program provides students with the needed soft skills such as: study skills, self-awareness and how to work within a group/team in order to succeed in a diverse educational environment such as Jacobs university Bremen. The program explores the different career paths, encourages social networking and demands them to take the time to do effective research in order for them to make a more informative decision on their intended undergraduate study program.				
Assessment				
Midterm written report Final poster & media presentation Scope: Topics studied as covered by the Learning Outcomes Weight: 50% Midterm assessment 50% Final assessment				
Students are required to pass the module with a PASS in order to pass the International Foundation Year program.				

SUBJECT AREA MODULES

Subject area Technology

Module Name COMPUTER SYSTEMS		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>	<i>Type</i>	<i>ECTS</i>	
tbc	Seminar style classes	Tutor-led	5	
Module Coordinator FYI Academic Director	Program Affiliation <ul style="list-style-type: none"> ▪ International Foundation Year ▪ SUBJECT module Semester one for 'Technology' 		Mandatory Status Mandatory for subject area 'Technology'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ▪ A basic understanding of Computer utilities ▪ Basic practical skills in IT 	Frequency Once a year, Fall semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ▪ Tutor-led but interactive classes (35 hours) ▪ Tutor-led Tutorials (7 hours) Directed and independent learning (83 hours)
			Duration One semester	Workload 125 hours
Recommendations for Preparation				
Students will have arrived with some basic skills in working with computers and specialized software through their studies in high school or elsewhere. Preparation prior to arrival would include a reading list to help prepare them for the topics to be studied during the semester and refresh the students' background knowledge of Computer Science				
Content and Educational Aims				
This is the first semester mandatory SUBJECT module for students of the 'Technology' subject area. It introduces students to the structure and components of a computer system and the key components and responsibilities of an operating system. An understanding of how computers and their Windows Operating systems and Linux Operating systems is also covered. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ▪ Describe the different technologies available to connect peripherals ▪ Explain in general terms the components of a computer system ▪ Provide definitions and describe uses of a CPU, memory, and the bus system ▪ Explain binary data representation ▪ Understand what computers do and how they achieve this ▪ Use different levels of abstraction that are needed for distinguishing between policy and mechanism, efficiency, and fairness ▪ Use principal knowledge of computer systems for clear design and efficient implementation of larger applications ▪ Demonstrate an understanding of the Linux system ▪ Use experience with specific computer organizations and operating systems to enhance the ability to reason about the performance of computer systems ▪ Demonstrate an understanding of virtualization tools and of how they may benefit the user 				

Usability and Relationship to other Modules

Computer Systems is a subject area-specific module in 'Technology', and with the other modules 'Fundamentals of Programming with Python 3' provides appropriate preparation for students wishing to study technology-related degrees at Jacobs University.

Assessment

Interim Test for coursework tasks set during the term

Scope: Theory and practical studied as covered by the respective Learning Outcomes

Weight: 40%

Unseen examination

Scope: Demonstrates achievement of Learning Outcomes during Term

Weight: 60%

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name FUNDAMENTALS OF PROGRAMING WITH PYTHON 3		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator FYI Academic Director	Program Affiliation <ul style="list-style-type: none"> ▪ International Foundation Year ▪ SUBJECT module Semester two for 'Technology' 		Mandatory Status Mandatory for subject area 'Technology'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> None <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ▪ A basic understanding of computing concepts and algorithms ▪ Basic practical skills in IT and programming 	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ▪ Tutor-led but interactive classes (35 hours) ▪ Tutor-led Tutorials (7 hours) Directed and independent learning (83 hours)
			Duration One semester	
Recommendations for Preparation Students require basic skills in working with computers and some understanding of the practical applications of specialized software. Preparation prior to arrival would include a reading list to help prepare them for the topics to be studied during the semester.				
Content and Educational Aims This is the second semester mandatory SUBJECT module for students of the 'Technology' subject area. It introduces Python as a basic coding skill to work with different types of data and tasks. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes By the end of this module, students will be able to <ul style="list-style-type: none"> ▪ Explain basic principles of Python as a programming language ▪ Understand the basic computational thinking concepts and practices, including abstraction, algorithm, and automation. ▪ Introduce the purpose of programming and the way in which a programming language makes this achievable ▪ Develop Python as a programming language ▪ Appreciate Python as an accessible and user-friendly language with uncluttered syntax and grammar, and highly extensible ▪ Implement database and GUI applications ▪ Object-oriented and structurally program with Python 3 ▪ Apply and use Python 3 ▪ Undergo workshop sessions learning to program with Python 3 ▪ Solve practical exercises in the use of Python 3 to provide programming solutions to basic problems 				
Usability and Relationship to other Modules Fundamentals of Computing with Python 3 is a subject area-specific module in 'Technology', and with the other modules 'Computer Systems' provides appropriate preparation for students wishing to study technology-related degrees at Jacobs University.				

Assessment

Interim Test for coursework tasks set during the term

Scope: Theory and practical studied as covered by the respective Learning Outcomes

Weight: 40%

Unseen examination

Scope: Demonstrates achievement of Learning Outcomes during Term

Weight: 60%

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.



Subject area Sciences

Module Name FOUNDATION CHEMISTRY		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator FYI Academic Director	Program Affiliation <ul style="list-style-type: none"> ▪ International Foundation Year ▪ SUBJECT module Semester one for 'Sciences' 		Mandatory Status Mandatory for subject area 'Sciences'	
Entry Requirements <i>Pre-requisites</i>	<i>Co-requisites</i>	<i>Knowledge, Abilities, or Skills</i>	Frequency	Forms of Learning and Teaching
<input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<input type="checkbox"/> <input checked="" type="checkbox"/> None	A basic scientific background from high school	Once a year, Fall semester	<ul style="list-style-type: none"> ▪ Tutor-led but interactive classes (35 hours) ▪ Tutor-led Tutorials (7 hours) ▪ Directed and independent learning (83 hours)
			Duration One semester	Workload 125 hours
Recommendations for Preparation				
Students should review their science material from high school to get prepared for the course. Course slides and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the first semester mandatory SUBJECT module for students of the 'Sciences' subject areas. It introduces a needed overview of fundamental chemical knowledge to students interested in continuing their studies within biological and physical science disciplines. The module content covers areas in introductory general, inorganic, analytical and physical chemistry. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ▪ Understand the general aspect of introductory chemistry ▪ Use chemical concepts to explain processes in various scientific disciplines ▪ Apply chemical knowledge to solve applied problems ▪ Gain a first impression on chemical research ▪ Recognize the different types of chemical reactions ▪ Perform calculations involving stoichiometry and molarity ▪ Differentiate the properties of the three main states: gas, liquid and solid ▪ Solve problems involving oxidation states and chemical equilibrium ▪ Describe acids and bases on a fundamental level ▪ State the basic organic compounds 				
Usability and Relationship to other Modules				
Foundation Chemistry is a subject area-specific module in 'Sciences', and with the other module 'Foundation Physics' provides an appropriate preparation for students wishing to continue their studies in undergraduate biological and physical science degrees at Jacobs University.				

Assessment

Two unseen examinations: a Midterm and a Final Exam
Scope: Topics studied as covered by the Learning Outcomes
Weight: 40% Midterm Exam
 60% Final Exam

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.

Module Name FOUNDATION PHYSICS		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ SUBJECT module Semester two for 'Sciences' 		Mandatory Status Mandatory for subject area 'Sciences'	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> A basic scientific background from high school	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One Semester	
Recommendations for Preparation				
Students should review their science material from high school to get prepared for the course. Course slides and book chapter are provided beforehand so that students can come prepared to class.				
Content and Educational Aims				
This is the second semester mandatory SUBJECT module for students of the 'Sciences' subject areas. It introduces a needed overview of fundamental knowledge of physics to students interested in continuing their studies within biological and physical science disciplines. The module content covers areas in thermodynamics, mechanics, optics, and quantum and nuclear physics. Detailed topics are included in the module's syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Understand the general aspect of introductory physics ■ Use concepts from physics to explain processes in various scientific disciplines ■ Apply physics to solve applied problems ■ Gain a first impression on research in physics ■ Relate mechanic force to kinetic energy ■ Explain the different laws of thermodynamics ■ Relate waves to optical properties ■ Describe basic fluid mechanics ■ Relate the energy of electromagnetic radiations to the quantum atomic structure ■ Introduce the concept of nuclear energy and reactions 				
Usability and Relationship to other Modules				
Foundation Physics is a subject area-specific module in 'Sciences', and with the other module 'Foundation Chemistry' provides an appropriate preparation for students wishing to continue their studies in undergraduate biological and physical science degrees at Jacobs University.				

Assessment

Type:

Two unseen examinations: a Midterm and a Final Exam

Scope: Topics studied as covered by the Learning Outcomes

Weight: 40% Midterm Exam

60% Final Exam

Students are required to pass the module with at least 45% in order to pass the International Foundation Year overall and be able to move on to degree studies at Jacobs University.



Subject area Society

Module Name FOUNDATION ECONOMICS		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ▪ International Foundation Year ▪ SUBJECT module Semester one for 'Society' 		Mandatory Status Mandatory for 'Society' subject areas	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ▪ A basic background in Mathematics ▪ Ability to research, evaluate and express opinions 	Frequency Once a year, Fall semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ▪ Tutor-led but interactive classes (35 hours) ▪ Tutor-led Tutorials (7 hours) ▪ Directed and independent learning (83 hours)
			Duration One semester	Workload 125 hours
Recommendations for Preparation				
Students should review their basic mathematics skills from high school to get prepared for the course. To help students gain a basic understanding of the subject area, a reading list to help prepare them for the topics to be studied during the module will be provided.				
Content and Educational Aims				
This is the first semester mandatory SUBJECT module for students of the 'Society' subject areas. It introduces students to political economy, macro- and microeconomics, and their differences. The course aims to provide students with the appropriate foundation in economic theory and application as well as enable them to be successful in their later related undergraduate studies in the fields of Business, Industrial Engineering or Social Sciences. Detailed topics are included in the module syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ▪ Understand the key economic concepts and terminology ▪ Explain the way in which firms develop their business strategy in relation to the economy ▪ Comprehend the interplay of objectives and priorities between business stakeholders ▪ Describe the reasons for market failure ▪ Recognize consequences of government intervention in the economy ▪ State barriers to trade and their impact on the economy ▪ Elaborate on the role of the underground economy ▪ Comprehend the concept of economic globalization ▪ Articulate the role of international economic organizations ▪ Identify the fundamentals of economic development and growth 				
Usability and Relationship to other Modules				
Foundation Economics is a subject area-specific module in 'Society' and with the other module 'Financial Accounting' in this subject area provides an appropriate preparation for students wishing to study in the fields of Business, Industrial Engineering or Social Sciences at Jacobs University.				

Assessment

Type: Mid-term multiple choice test and course work essay

Weight 40%

Scope: Covers topics relevant to the achievement of Learning Outcomes

Type: Unseen examination – basic economics terminology and theories

Weight 60%

Scope: Covers topics relevant to the achievement of all Learning Outcomes

At least a 45% pass is required in this module for students to complete their chosen subject area successfully

Module Name FINANCIAL ACCOUNTING		Module Code To be confirmed	Level (type) FOUNDATION	ECTS 5
Module Components				
<i>Number</i>	<i>Name</i>		<i>Type</i>	<i>ECTS</i>
	Seminar style classes		Tutor-led	5
Module Coordinator IFY Academic Director	Program Affiliation <ul style="list-style-type: none"> ■ International Foundation Year ■ SUBJECT module Semester two for 'Society' 		Mandatory Status Mandatory for 'Society' subject areas	
Entry Requirements <i>Pre-requisites</i> <input checked="" type="checkbox"/> High School Diploma <input type="checkbox"/> None	<i>Co-requisites</i> <input type="checkbox"/> <input checked="" type="checkbox"/> None	<i>Knowledge, Abilities, or Skills</i> <ul style="list-style-type: none"> ■ A solid background in Mathematics ■ Basic IT skills 	Frequency Once a year, Spring semester	Forms of Learning and Teaching <ul style="list-style-type: none"> ■ Tutor-led but interactive classes (35 hours) ■ Tutor-led Tutorials (7 hours) ■ Directed and independent learning (83 hours)
			Duration One semester	
Recommendations for Preparation				
Students should review their mathematics and IT skills from high school to get prepared for the course. To help students gain a basic understanding of the subject area, a reading list to help prepare them for the topics to be studied during the module will be provided.				
Content and Educational Aims				
This is the second semester mandatory SUBJECT module for students of the 'Society' subject areas. It aims to introduce students to the basic mechanics and processes of financial accounting in both theory and practice. It further helps students to understand the importance of financial accounting procedures and the resulting financial statements for running a business. Detailed topics are included in the module syllabus.				
Intended Learning Outcomes				
By the end of this module, students will be able to				
<ul style="list-style-type: none"> ■ Understand basic theory, practice, and terms of financial accounting ■ Identify and apply accounting principles ■ Explain the value of financial accounting to a business ■ Use double-entry bookkeeping to record financial transactions of a company ■ Utilize key ratios to interpret Statement of Financial Position and Income Statement ■ Analyze financial statements on annual reports ■ Comprehend role of software in contemporary accounting function ■ Differentiate between debt and equity financing ■ Describe alternative financing methods ■ State the ethics in financial accounting 				
Usability and Relationship to other Modules				
Financial Accounting is a subject area-specific module in 'Society' and with the other module 'Foundation Economic' in this subject area provides an appropriate preparation for students wishing to study in the fields of Business, Industrial Engineering or Social Sciences at Jacobs University.				

Assessment

Type: Mid-term multiple choice test and course work essay

Weight 40%

Scope: Covers topics relevant to the learning outcomes

Type: Examination on process of preparing company accounts

Weight 60%

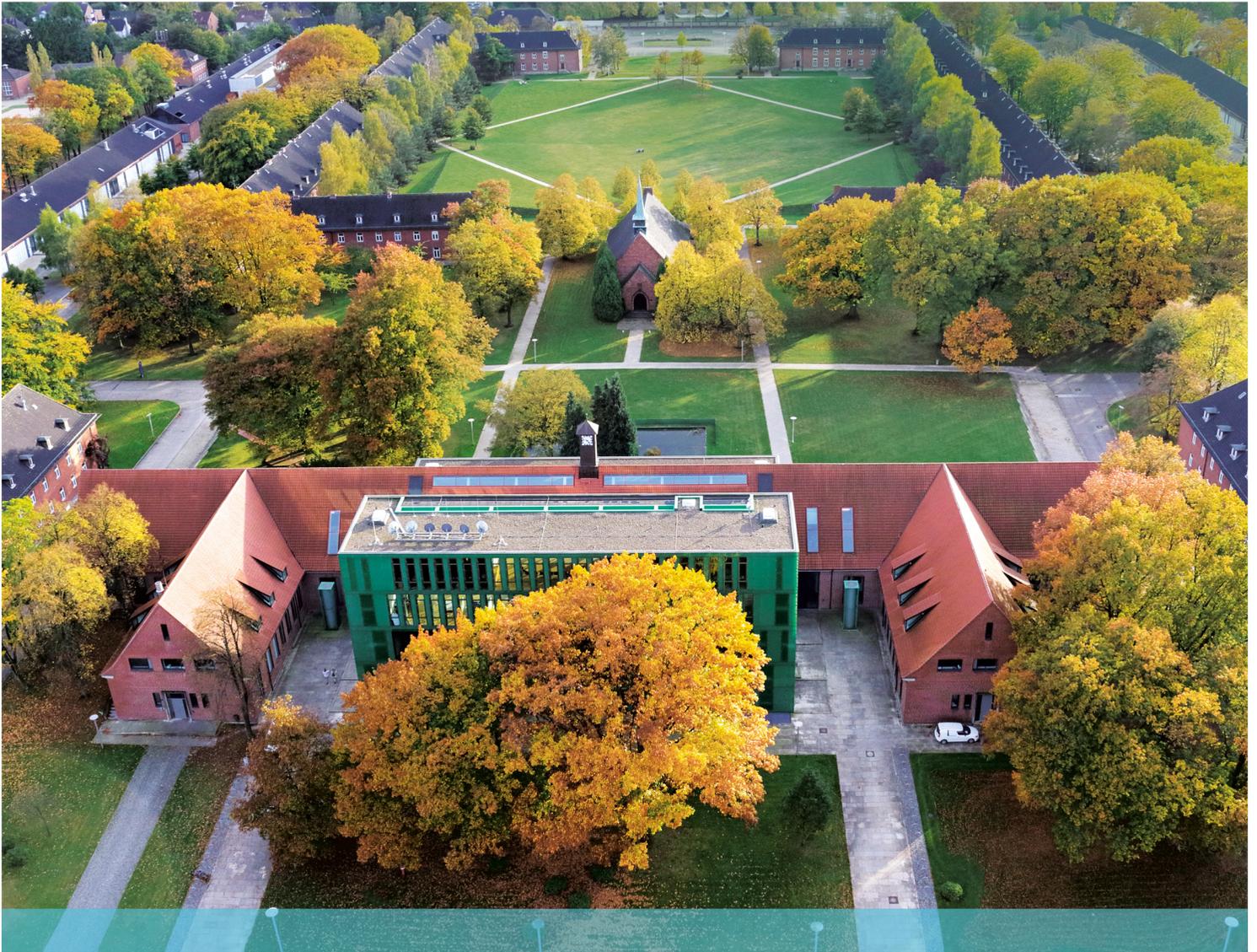
Scope: Covers topics relevant to all learning outcomes

At least a 45% pass is required in this module for students to complete their chosen subject area successfully





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