

Courses for Incoming Students in English Language

Winter Term 2018/19

Faculty I – Electrical Engineering and Information Technology
Faculty II – Department of Mechanical Engineering



On Faculty website see:

f1.hs-hannover.de/english-courses

f2.hs-hannover.de/english-courses

Courses for Incoming Students in English Language Winter Term 2018/19

Engineering exchange students may select their courses from the range of technical courses of *both* Engineering faculties (Electrical Engineering and Mechanical Engineering) and the offer of non-technical courses. We currently have a range of courses on the 3rd and 4th year level. A class will be offered if a minimum of five students register for it.

Please note! This is a preliminary list of courses. Changes may occur.

Faculty I – Electrical Engineering and Information Technology

Subject	Contact hrs.	ECT Credits	Responsible
Digital Image Coding	2	2.5	Hötter
Explosion Protection	2	2.5	Germersdorf
Introduction to Matlab / Simulink	2	2.5	Hisseine
Power Cable Technology	2	2.5	Stolle
Simulation Laboratory	2	2.5	Schoof
High Voltage Fields	2	2.5	Staubach
IES-Block-course „Photoelectric Detection Technology“ taught on 9 th and from 15 th – 19 th Oct. 2018	2	2.5	Guest Professor from China (ZUST)
IES-Block-course „Introduction to Operational Amplifiers and their Applications“ taught on 9 th and from 15 th – 19 th Oct. 2018	2	2.5	Guest Professor from Malaysia (UiTM) Dr Ahmad Sabirin Zoolfakar
Total		20	

Faculty II – Mechanical and Bio Process Engineering, Department Mechanical Engineering

Subject	Contact hrs	ECT Credits	Responsible
Applied Metrology for Manufacturing Engineering plus Laboratory	4	4	Quaß
CAD / CAM Systems NOT AVAILABLE!	2	2	Waldt
Engineering Project	2	7	Greife / Sindelar
Production Planning & Control (PPC)	2	2	Begemann

Computational Fluid Dynamics (CFD) - the entire module consists of the three part modules: - Mathematics IV, - Fluid Dynamics and - Laboratory (Prerequisite: 8 incomings need to be registered for this course to be offered.)	6	6	Gottschlich
International Engineering Science (IES) Different topics, see list below. You can choose more than one course in IES. Each course counts for 2 ECTS.	1	2	Which courses are on offer will be announced later on / at beginning of semester
• IES-Block-course „ Product Design Development “, FKP Assoc. Prof Dr Hambali Arep, UTeM, Malaysia, FKP	1	2	taught as a block-course in the afternoon from 8-12 Oct. 2018 by a guest professor
• IES-Block-course „ Maintenance Management and Strategies , Dr Ruztamreen Jenal, UTeM, Malaysia Faculty Mechanical Eng.	1	2	taught as a block-course in the afternoon from 8-12 Oct. 2018 by a guest professor
• IES-Block-course „ Project Management- From Small to Mega Projects “, Prof. Dr. Nor Hayati Saad, UiTM, Malaysia Faculty Mechanical Eng.	1	2	taught as a block-course in the afternoon from 8-12 Oct. 2018 by a guest professor
• IES-Hygienic equipment design criteria (Nadolny)	1	2	
• IES-Leadership Basics (Schneider)	1	2	
• IES-Lean Management Basics (Schneider)	1	2	
• IES-Patent Law (Bremer)	1	2	
Total		37	

Non-Technical Subjects

Subject	Contact hrs	ECTS	Responsible
Study Camp - German Intensive Course <i>(course takes place during Study Camp in September)</i>	3	3	Language Center
Study Camp <i>Option 2</i> – Courses “ <i>Learning New Skills</i> ” & “ <i>Learning Portfolio</i> ” <i>(courses take place during Study Camp in September)</i>	2	2	International Office
Ambassador Destination for Incomings (AMD, Intercultural Competences)	3	3	International Office
Application Training/communication skills <i>(This course is obligatory for all Chinese 3+1 students)</i>	2	2	Language Center
Business English (B1-level)	2	3	Language Center
German as a Foreign Language / Deutsch als Fremdsprache	6	6	Language Center
Tandem (Language Learning)	2	2	Language Center
Total		21	

Dear exchange student,

thank you for your interest in our university, we would be happy to welcome you at our faculty!

Please

1. Apply Online in **“Mobility Online”** with our International Office **by 15. Mai**
2. Send your Learning Agreement with your course selection via e-mail back to the International Faculty Office: eMail to viola.hauschild@hs-hannover.de **until End of May.**

APPLICATION

You have to **register online** with our international office in the **“Mobility Online”-database**. Please find information on how to apply for an exchange semester on the website of the International Office. Online-Link for application in Mobility Online:

<https://www.hs-hannover.de/international-eng/international-students-at-hsh/index.html>

CONTACT

International Faculty Office: For any questions related to courses, your studies or faculty matters
Ms. Viola Hauschild, International Faculty Office, Ricklinger Stadtweg 118, 30459 Hannover
Email: viola.hauschild@hs-hannover.de Phone: +49 511 9296-1642

International Office For any questions related to accommodation or your stay in general
Ms. Helena Spies-Jitomirski, Adviser for incoming students,
Email: hsh-incoming@hs-hannover.de Phone: +49 511 9296-3794
Bismarckstraße 2, 30173 Hannover, Germany

Semester Dates

Semester:	1 September 2018 to 28 February 2019 (Winter Term):
Study Camp (Orientation):	3 to 14 September
Beginning of classes:	20 September
End of classes:	31 January 2019
Exams:	in January (language classes: in December)
Lecture-free time	03 Oct. (Public holiday: Day of German Unity) 23 Dec. to 2 Jan. (Christmas holidays) 1 to 28 Feb. 2019

Study Camp

Before the classes will start, we highly recommend all our exchange students to participate in our student orientation program called **“Study Camp”**. Details will be given to you via Mobility Online. This year's Study Camp is a series of pre-semester programs with language courses and courses in four learning areas which are labelled *Learning New Skills*, *Learning Languages*, *Learning to Learn*, and *Learning to Connect*. With its multidisciplinary focus, the Study Camp provides a taste of student life and academics. It offers a chance for you to have a good start in an international environment. You will meet fellow students build lasting friendships and get a taste of university life while earning credits and gaining important competencies.

IT – Access

Student account: Your study buddy will help you to with your student account after you received your student card by the international office at the beginning of the semester. You will have to register first at the IT-Service Desk in **room 1C.0.06** and 1C.0.11 and 1C.1.08. You can also print in these rooms. Your HsH-email address is: Firstname.lastname@stud.hs-hannover.de

WLAN: Two wireless networks (SSIDs) are being broadcast on campus: eduroam (2,4 GHz) and eduroam-n (5,0 GHz). You can find further information in our brochure *“WLAN(eduroam)”*. Instructions and downloads for VPN and WLA see: <https://www.hs-hannover.de/it/ueber-uns/flyer/index.html>

Digital Image Coding

Instructor	Prof. Dr.-Ing. Michael Hötter
Language of Instruction	English
Curriculum Allocation	
Module Format, Contact Hours per Week	Seminar, 2 SWS
ECTS Credits	2.5
Student Workload	35 contact hours / 40 hours of self-study
Suggestions for Self-Study	Preparation and post processing of the course material provided and the course contents.
Prerequisite(s)	None specified
Group size	20
Learning Outcomes	Students understand the fundamentals in image coding and the basic coding principles, they judge and discuss the existing coding standards in their different applications and show application areas.
Content	Irrelevance and redundancy reduction, difference pulse code modulation
Requirements for Contact Hours	Preparation of the course documents.
Requirements for Self-Study	Intensive and meaningful follow-up work based on the course content.
Assessment	
Reading	<p>R. J. Clarke: <i>Digital Compression of Still Images and Video</i>, Academic Press, 1995. ISBN 0-12-175720-X</p> <p>A. N. Netravali, B. G. Haskell: <i>Digital Pictures, Representation and Compression</i>, Plenum Press New York and London, 1988. ISBN 0-306-42791-5</p> <p>J.-R. Ohm: <i>Digitale Bildcodierung: Repräsentation, Kompression und Übertragung von Bildsignalen</i>, Springer-Verlag Berlin Heidelberg New York, 1995. ISBN 3-540-58579-6</p> <p>A. M. Tekalp: <i>Digital Video Processing</i>, Prentice Hall PTR, Upper Saddle River, NJ 07458, 1995. ISBN 0-13-190075-7</p> <p>L. Torres, M. Kunt (eds.): <i>Video Coding: The Second Generation Approach</i>, Kluwer Academic Publishers Boston/London/Dordrecht, 1996. ISBN 0-7923-9680-4</p>

EXPLOSIVE PROTECTION FOR ELECTRICAL AND NON-ELECTRICAL APPARATUS

Person in charge	Thorsten Germersdorf
Course Type	Seminar, 2 SWS
ECTS Credits	2.5
Contact Hours / Independent Study	34 h /41 h
Group size	20
Learning Outcomes	<p>In the 19th century, electrical equipment was introduced into industry and households. Immediately afterwards, the occurrence of methane and coal dust in hard coal mining prompted the development of the basics of electrical explosion protection. The advantages of electricity were so convincing that intensive work was carried out to find a way to reliably prevent contact between an explosive atmosphere and ignition sources - originating from the use of electrical equipment - and thus prevent explosions.</p> <p>Today, fortunately, the number of accidents caused by electrical or mechanical ignition sources is low. The expenditure on development and manufacturing and the statutory regulations (Lectures scope will be the European directive ATEX 2014/34/EU incl. harmonized standards) have proven to be successful.</p> <p>There are many applications which require explosion proof equipment. During the over 100 years of electrical explosion protection, principles and techniques have been developed which allow the use of electrical measuring technology, even where, e. g. in reaction vessels, an explosive atmosphere is permanently present.</p>
Content	<p>The aims of this lecture are:</p> <ol style="list-style-type: none"> 1. Knowledge of history and background about explosive protection 2. Interpretation of the fundamental terminology regarding explosion protection (Gases, Vapors, Dusts, T-Classes, Groups, Groups, e.g.) 3. Understanding the European directives 2014/34/EU and 1999/92/EC incl. a global view (IEC-Ex scheme, FM, UL, e.g.) 4. Theory & current practice: Electrical sector of explosion protection (Standards EN 60079-ff) – Protection methods (ex d, ex p, ex q, ex o, ex e, ex i, ex n, ex m, ex t, ex op) 5. Theory & current practice: Non-electrical sector of explosion protection (Standards EN 13463-ff and ISO 80079-ff) – Protection methods (c, b, k, ex h) 6. Basics of the Quality System & Auditing ISO9001, ISO80079-34 <p>Units and contents</p> <pre> graph LR 1[1. Kick Off, Structure, History] --> 2[2. Basics, Theory] 1 --> 3[3. Directives, Standards, Norms] 1 --> 4[4. Zones, Categories, EPL] 2 --> 5[5. Basic Req. Ex d] 2 --> 6[6. Ex p Ex q Ex o] 2 --> 7[7. Ex e Ex n] 2 --> 8[8. Ex i Systems] 2 --> 9[9. Ex m Ex op Ex t] 3 --> 5 3 --> 6 3 --> 7 3 --> 8 3 --> 9 4 --> 5 4 --> 6 4 --> 7 4 --> 8 4 --> 9 5 --> 10[10. Basic Req. c, b, k] 6 --> 10 7 --> 10 8 --> 10 9 --> 10 10 --> 11[11. EX Marking, DoC, EC-Type Exam.] 11 --> 12[12. Summary, Questions, Discussion] </pre>

MATLAB/Simulink

Instructor	Dr. Dadi Hisseine
Language of Instruction	English
Curriculum Allocation	ATP, INI, MEC
Module Format, Contact Hours per Week	Lecture and tutorial in small groups, 2 SWS
ECTS Credits	2.5
Student Workload	34 contact hours /41 hours of self-study
Prerequisite(s)	Basic principles of programming, mathematical fundamental terms and basic principles of automation technology.
Suggestions for Self-Study	Post processing of the lecture, exercises in the data processing centre
Group size	30
Learning Outcomes	The students learn with the help of the MATLAB/Simulink program package to solve problems with regard to engineering technology. They will be able to write their own programs with MATLAB and to simulate and analyse dynamic systems with Simulink
Content	MATLAB as intelligent pocket calculator, symbolic mathematics, Uploading and saving data, Graphic presentation, Scripting language, Analysis of frequency response Simulation of dynamic systems.
Requirements for Contact Hours	Intensive participation, exercises in the data processing centre.
Requirements for Self-Study	Intensive and meaningful follow-up work based on the course content and computer exercises in the data processing centre.
Assessment	
Reading	Kutzner, R., Accompanying lecture script including computer exercises. Kutzner, R., Schoof, S.: MATLAB/Simulink. Eine Einführung. RRZN, 2011

Power Cable Technology

Instructor	Stolle, Dieter, Prof. Dr.-Ing.
Language of Instruction	English
Curriculum Allocation	EEV, EWI
Module Format, Contact Hours per Week	Lecture, 2 SWS
ECTS Credits	2.5
Student Workload	34 h /41 h
Suggestions for Self-Study	Post processing of the lecture, attendance of the power cable seminar at the Nexans company
Prerequisite(s)	First study-section
Group size	40
Learning Outcomes	The students will learn about the different kinds of power cables and about their construction, production methods and fields of application. They principally will be able to lay-up wiring systems. This also includes to acquire the knowledge about the necessary connection technologies as well as assembly- and laying techniques. The students will be familiar with test techniques. Moreover, they will acquire basic principles in telecommunications cables and optical fibre cables.
Content	Construction and installation of oil-paper-isolated cables, PVC-cables, PE-cables, Extruder techniques, sealing ends, test techniques, cable capacitance, laying, locating and earthing of cables, diagnostics in operation, signal and communication cable, fibre optical cable, offshore connections, superconducting cables.
Requirements for Contact Hours	Request explanations in case of ambiguity, intensive participation in discussions.
Requirements for Self-Study	Intensive and meaningful follow-up work based on the course content and literature research.
Assessment	[Lecture 60], [Oral Examination]
Reading	<ul style="list-style-type: none"> – Lecture sheets, – E. Kuhnert, F. Wiznerowicz und G. Wanser (†): Eigenschaften von Energiekabeln und deren Messung), erschienen in der Verlags- und Wirtschaftsgesellschaft der Elektrizitätswerke m. b. H. (VWEW), Frankfurt

Simulation Laboratory

Instructor	Prof. Dr.-Ing. Sönke Schoof
Language of Instruction	English
Curriculum Allocation	EWI, INI, MEC
Module Format, Contact Hours per Week	Laboratory, 2 SWS
ECTS Credits	2.5
Student Workload	34 contact hours /41 hours of self-study
Suggestions for Self-Study	Preparation and post processing of the laboratory studies, evaluation of the results
Prerequisite(s)	Mathematics 1-3, Basic principles of computer science
Group size	16
Learning Outcomes	The students will learn to analyse and implement a simulation task. They will acquire the knowledge of the current simulation tools and will be able to interpret and represent the results.
Content	Discrete simulation of the flow of traffic-flow on a light-signal system, state-oriented simulation of an elevator control, continuous simulation of a vehicle suspension, discrete simulation of a telephone system.
Requirements for Contact Hours	None specified
Requirements for Self-Study	None specified
Assessment	[Submitted exercises], [report], [examination]
Reading	S. Schoof: Script simulations processes, Kutzner, R., Schoof, S.: MATLAB/Simulink, RRZN-handbook, 2009

Applied Metrology for Manufacturing Engineering and Laboratory

Person in Charge Language of Instruction	Prof. Dr.-Ing. Michael Quaß English
Curriculum Allocation	Mechanical Engineering, advanced
Course Type, Contact Hours per Week	Lecture plus Laboratory, 2 SWS
ECTS Credits	2
Contact Hours / Independent Study	32h / 32h
Suggestions for Independent Study	Preparation and post processing of the course material provided and the course contents. Writing the reports.
Recommended Prerequisites	Basics in metrology
Group size	20
Learning Outcomes	The students have knowledge of standards, instruments and measurement devices in the field of production metrology and know how to use the equipment
Content	General principles of measurement, dimensions, tolerances and fits, shop floor measuring equipment, gauges, measurement of dimensional and geometrical tolerances, surface measurements, coordinate measurement machines
Requirements for Contact Hours	Preparation of the course documents.
Requirements for Independent Study Hours	Intensive and meaningful follow-up work based on the course content.
Bibliography	Grous, A., Applied Metrology for Manufacturing Engineering, Wiley&Sons, Hoboken (USA), 2011 Pfeifer, T., Production Metrology, Oldenbourg München, Wien, 2002

CAD / CAM Systems

Instructor	Prof. Dr.-Ing. Nils Waldt
Language of Instruction	English
Curriculum Allocation	MAB
Course Type, Contact Hours per Week	Lecture and laboratory course, 2 hrs/wk.
ECTS Credits	2
Semester Level	6
Student Workload	32 hrs
Recommended Prerequisites	Basic CAD knowledge
Learning Outcomes	<p>Students are able to</p> <ol style="list-style-type: none"> (1) understand basic concepts and applications of CAD/CAM systems, (2) use a standard CAD/CAM system for basic process planning and NC programming. <p>The aim of the module is</p> <ul style="list-style-type: none"> • to give students an understanding of modern CAD/CAM systems, • to demonstrate typical applications and workflows, • to teach basic skills needed to work with CAD/CAM software.
Content	<p><u>Theory</u></p> <ul style="list-style-type: none"> • History of CAD/CAM systems • Common concepts and uses of CAD/CAM • NC programming for turning and milling • CAD/CAM tool chain and interfaces <p><u>Application</u></p> <ul style="list-style-type: none"> • Demonstration and application of CAD/CAM systems with different use cases. • Practical programming of machining processes and operations. • Simulation of machining.
Assessment	Examination, 90 min
Reading	Kief, H.; Roschiwal, H.: NC/CNC-Handbuch. Hanser-Verlag.

Engineering Project

Instructor	Prof. Dr. Wolfgang Greife / Prof. Dr.-Ing. Ralf Sindelar
Language of Instruction	English
Curriculum Allocation	MAB-AM (6), MAB-PS (6), MBI (6), VET-ET (6), VEU-VEU (6), WIM (6)
Course Type, Contact Hours per Week	Project, 1 hr/wk.
ECTS Credits	7
Student Workload	15 contact hours, 15 hours of self-study
Suggestions for Self-Study	Follow-up work based on course sessions
Recommended Prerequisites	None specified
Group Size	1
Learning Outcomes	The students will acquire the skills to implement and document educational, course-specific contents on their own, using practical examples from engineering issues that are commonly dealt with in university courses or in companies.
Content	Definition of the project task; supervised meetings to guide students during the project; students will give ongoing reports on the project status and progress and finally present the project results.
Requirements for Contact Hours	None specified
Requirements for Self-Study	None specified
Reading	To be announced

Production Planning and Control (PPC)

Instructor	Prof. Dr.-Ing. Carsten Begemann
Language of Instruction	English
Curriculum Allocation	MAB-PS (5), PTD (4), WIM (5)
Course Type, Contact Hours per Week	Lecture, 2 hrs/wk.
ECTS Credits	2
Student Workload	30 contact hours, 30 hours of self-study
Suggestions for Self-Study	Intensive and meaningful follow-up work based on course content
Recommended Prerequisites	None specified
Group size	None specified
Learning Outcomes	The students will acquire basic working knowledge of the structure, content and appropriate usage of PPC and ERP systems in the field of production
Content	MRP systems (Material Resource Planning), PPC systems OPT systems (Optimal Time-usage Systems) ERP systems (Enterprises Resources Planning) PPC basic structure and selection criteria, decentralized usage of PPC, control loop model, operating and machine data, warehouse control systems, transport control systems.
Requirements for Contact Hours	None specified
Requirements for Self-Study	None specified
Reading	Prof. Dr.-Ing. Hartmut F. Binner: Integriertes Organisations- und Prozessmanagement; Carl Hanser-Verlag, Prof. Dr.-Ing. Hartmut F. Binner Unternehmensübergreifendes Logistikmanagement. Carl Hanser Verlag

Computational Fluid Dynamics (CFD)

basic module

Instructor	Prof. Dr.-Ing. Martin Gottschlich
Language of Instruction	English
Curriculum Allocation	Mechanical Engineering (MAB)
Course Type, Contact Hours per Week	Lecture, 4 hrs/wk. Laboratory work, 1 hr/wk.
ECTS Credits	6
Student Workload	Lecture: 60 contact hours, 60 hours of self-study Lab: 15 contact hours, 45 hours of self-study
Suggestions for Self-Study	Preparation of course materials provided and follow-up based on coursework.
Recommended Prerequisites	Basic knowledge of fluid mechanics, Basic knowledge of higher mathematics and programming
Group Size	20
Learning Outcomes	Understanding of mathematical and numerical methods of flow simulation, including practical applications
Content	2-D, 3-D fluid flow problems Mathematical description Discretization methods Application of numerical methods using <i>matlab</i> Project work using <i>ANSYS-CFX</i>
Requirements for Contact Hours	Preparation of course documents
Requirements for Self-Study	Intensive and meaningful follow-up work based on course content
Reading	Numerical Computation of Internal and External Flows: The Fundamentals of Computational Fluid Dynamics, Charles Hirsch eBook ISBN: 9780080550022 Hardcover ISBN: 9780750665940

Please note /Anmerkung:

- This elective module is open to all undergraduate degree program students in the department of Mechanical Engineering / Das Vertiefungsmodul gilt für alle Studiengänge.
- The entire module consists of three part modules, which build the complete module. All part modules have to be taken (Mathematics IV, Fluid Dynamics and Laboratory). Otherwise, the participation is not possible as there will be only one final grade. / Das Gesamtmodul besteht aus drei Teilmodulen, die nicht einzeln angeboten werden! Entweder alle drei (Mathematik IV, Strömungslehre und Labor) oder keine Teilnahme möglich, da es nur eine Gesamtnote gibt.

International Engineering Science (IES) – Different topics

Instructor	Depends on the topic
Language of Instruction	English
Curriculum Allocation	None specified
Course Type, Contact Hours per Week	Seminar, 2 hrs./wk.
ECTS Credits	2
Student Workload	14 contact hours, 46 hours of self-study
Suggestions for Self-Study	Preparation of course materials provided and follow-up work based on course contents.
Recommended Prerequisites	None specified
Group Size	Max. 20
Learning Outcomes	Depending on the selected course, students who attend a course in international engineering science will gain general knowledge in the specified field of engineering.
Content	All courses in the “module international engineering science” have different topics. Therefore, the content depends on the selected course.
Requirements for Contact Hours	Preparation of the course documents.
Requirements for Self Study	Intensive and meaningful follow-up work based on course content.
Reading	Will be provided online before the course sessions or announced at the beginning

International Engineering Science (IES):

Each semester there is an offer of different topics, according to availability.

Some of the topics are:

<p>IES - Invention handling and Patent Law</p>	<p>This course is an introduction to the field of Invention handling in Companies and Intellectual Property Rights (Patents, Trademarks, Designs, Utility Models).</p> <p>We will discuss: What is a Patent, Examples of Patents, Scope of Protection; Employee Inventions; Invention Handling in Companies; International Patent Systems; Patenting Procedures, Filing Strategies; Search in Patent Databases, Freedom to Operate.</p>	<p>Ulrich H. Bremer</p>
<p>IES - Hygienic equipment design criteria</p>	<p>Main focus will be hygiene requirements for the design of machinery with regards to variations of design preventing contamination of products with e.g. microorganisms or other residues harmful to health. Aim of hygienic design: safety of consumer</p>	<p>Dr. Anne Nadolny</p>
<p>IES - Leadership Basics</p>	<p>Lean Management topics</p>	<p>Prof. Dr.-Ing. Michael Schneider</p>
<p>IES - Leadership Basics</p>	<p>IES: "Leadership Basics", Workshop style, Contents: a) Basics of successful leadership. b) Theory of cognition and dialogue competences. c) Leadership tasks and roles. d) Leadership responsibilities.</p> <p>IES: "Lean Management Basics" Workshop style, Contents: a) Basics of the Lean Manufacturing Philosophy. b) Fundamentals of selected methods: Kaizen, Kanban etc. c) Simulation of the basic principles.</p>	<p>Prof. Dr.-Ing. Michael Schneider</p>
<p>IES-Refrigeration and its social impact</p>	<p>Refrigerants are needed in many areas of daily life. The lecture will identify these areas; it will explain the basic principles of refrigeration and its impact on society and environment.</p>	<p>Dr. Felix Flohr</p>
<p>IES - Technology and Society“</p>	<p>'In this course we talk about the impact of science and technology in today's society as well as the life and work of engineers.</p>	<p>Prof. Dr. Götschel</p>

Topics offered by Guest Professors from Partner universities	Topics to be announced every year, see below the list of 2018:	by Guest Professors from partner univ.
Introduction to Operational Amplifiers and their Applications Lecture taught as a block-course in the project week of the faculty from 16-19 Oct. 2018 and on 9 Oct. in the afternoon	The course will discuss topics on various types and applications associated with operational amplifiers. Detail subtopics that will be covered are listed below; 1. Introduction to operational amplifiers. 2. Characteristic of ideal operational amplifiers. 3. Various types of operational Amplifiers 4. Applications associated with operational amplifiers	UiTM, Malaysia Prof. Ahmad Sabirini Bin Zoofakar, Electrical Engineering
Photoelectric Detection Technology Lecture taught as a block-course in the project week of the faculty from 16-19 Oct. 2018 and on 9 Oct. in the afternoon	To be announced later	ZUST, China Li, Shuguang, Electrical Engineering
Product Design Development Lecture taught as a block-course in the afternoon from 8-12 Oct. 2018	The aim of this course is to expose the student to the method of designing and fabricating a new product using various design tools and techniques. This course will equip the students with basic understanding and fundamental knowledge about new product development process. The emphasis is on developing practical skills related to product development until to commercialize the proposed product. Students will be exposed to the concepts and principles of product design as well as the best processes to manufacture the product. This includes the use of design tools and methods in order to develop and fabricate the product. Minimizing the cost of the product by using DFMA in ensuring the design of a product that is easier and less expensive to manufacture and assemble, with retaining the quality of the product will be exposed to the student as well. Knowledge of the environment impacts and issues on sustainability is also covered in this course. The student also will be exposed to the mini project (consumer product). This project applies team-based approach to which will improve teamwork and communication skills of the students. The student will be exposed the process of designing and creating a prototype and the end of the way of commercializing the proposed product. As a result, this course provides the students with an appreciation for the realities of industrial practice and for the complex and essential roles played by various members of product development teams.	UTeM, Malaysia FKP Assoc. Prof Dr Hambali Arep, Faculty Manufacturing Engineering
Maintenance Management and Strategies Lecture taught as a block-course in the afternoon from 8-12 Oct. 2018	Maintenance & the Industrial Organisation. Plant Acquisition Policy. Definition of Maintainability. Business Focus Approach. Structure of Industrial Plant. Maintenance Objectives. Principles of Preventive Maintenance. Typical Pattern of Failure. Types of Maintenance. Top Down & Bottom Up Approach. Reliability Centred Maintenance (RCM). Controlling Plant Reliability.	UTeM, Malaysia Dr Ruztamreen Jenal, Faculty Mechanical Engineering

**Project
Management –
from Small to
Mega Project**

Lecture taught as a
block-course in the
afternoon from 8-12 Oct.
2018

UiTeM, Prof. Dr.
Nor Hayati Saad,
Malaysia
Faculty
Mechanical
Engineering

Study Camp: German Intensive Course / Deutschintensivkurs

Course takes place during the Orientation Program in September

Module Title	German Intensive Course
Module Convener	Ahrberg, Christina
ECTS Credits	3
Contact hours	50 h
Independent Study Hours	40 h
Pre-requisite(s)	According to the result of the German placement test (CEFR level)
Group size	20
Learning Outcomes	<p>According to his/her language level the student will be able to:</p> <ul style="list-style-type: none"> - Understand oral and written contemporary German - Develop oral proficiency - Use idiomatic expressions - Develop facility with German within authentic cultural contexts - Get knowledge about contemporary culture in German-speaking countries
Content	<p>Development of communication skills in reading, listening, speaking and writing. Topics: German-speaking countries, intercultural misunderstandings, culture, and learning strategies.</p> <p>The language of instruction is German.</p>
Module format	Seminar/workshop, 3 SWS
Participation	Compulsory attendance
Self-study requirements	Homework, vocabulary practice, exercises in the workbook
Assessment	Examination, 90 minutes
Material	Dengler/Rusch/Schmitz/Sieber (2012): Netzwerk A1 bis B1. Jahr (2011): Wissenschaftsdeutsch C1

Study Camp Option II – Course modules: Learning New Skills, Learning to Connect and Learning to Learn”

Interactive courses for students in different topics

Different courses and workshops take place during the Orientation Program in September

Instructor	ZLB - Studium und Lehre (Sarah Kühne)
Language of instruction	English
ECTS Credits	3
For more information please see the following link:	https://studycamp.hs-hannover.de/
Content	<p>Study Camp is an orientation program for exchange students and freshers at Hochschule Hannover-University of Applied Sciences and Arts.</p> <p>It is highly recommended to all exchange students to take part in this programme.</p> <p><i>For freshers and new students – get here, get clear!</i></p> <p>This year’s Study Camp is a series of pre-semester programs in four learning areas which are labelled <i>Learning New Skills, Learning Languages, Learning to Learn, and Learning to Connect</i>. With its multidisciplinary focus, the Study Camp provides a taste of student life and academics. It is designed to ease the transition from high school or work life to the university.</p> <p>The workshops provide an opportunity to develop and practice key competencies that will come in handy once your regular courses begin. Broaden your subject knowledge and your social and personal skills and incidentally get a head start on your studies. All workshops of course will be taught by professional instructors and faculty members.</p>
Contact / Questions?	eMail to: studycamp@hs-hannover.de

Ambassador Destination Module (AmD)

Instructors	Oliver Eß; Robert Westendorf
Language of instruction	English
Curriculum Allocation	
Course Type, Contact Hours per Week	Seminar, 2 hrs/wk
ECTS Credits	3
Student Workload	32 contact hours per week, additional hours of self-study
Suggestions for Self-Study	Coursework Preparation and Follow-up
Recommended Prerequisites	None specified
Group size	20
Learning Outcomes	The students possess the main tools for an effective intercultural communication. They are able to describe and reflect their own conduct and that of others, and understand how intercultural interaction takes place in a working or educational environment.
Content	<ul style="list-style-type: none">- Descriptions of different cultures- Cultures of work, of learning, and subject-specific cultures- Communication models and descriptions
Requirements for Contact Hours	Preparation of course materials.
Requirements for Self-Study	Follow-up based on coursework
Reading	Will be announced during course

Module Title	Communication Skills / Application Training
Module Components	
Module Convener	Trutz, Ben
ECTS Credits	3
Contact hours	45
Independent Study Hours	45
Pre-requisite(s)	B1.2 of the CEFR
Group size	20
Learning Outcomes	<p>On completion of this module the student should be able to:</p> <ul style="list-style-type: none"> - Organize and articulate a coherent argument - Describe the purposes and principles behind different forms of communication - Identify common challenges to effective communication - develop strategies for overcoming communication barriers - Apply principles of effective communication to enhance their practice - Demonstrate increased awareness of cultural influences on communication and negotiation.
Content	<p>Oral and written communication skills will be developed, together with critical, interpretative and analytical abilities.</p> <p>This module will cover the following areas:</p> <ul style="list-style-type: none"> - Effective communication principles - Written communication (correspondence, reports, minutes) - Oral communication (preparing and giving presentations, facilitating discussions, working in groups, using questioning techniques and giving feedback) - Strategies, skills and techniques for negotiating - Job application training - CV and covering letter writing - Needs-related grammar
Module format	Seminar
Participation	Compulsory attendance
Self-study requirements	Homework, vocabulary practice
Assessment	Presentation, Exam
Material	Will be made available at the beginning of the course.

Business English / English 6

Instructor	Trutz, Ben
Language of Instruction	English
Curriculum Allocation	None specified
ECTS Credits	3
Course Type, Contact Hours per Week	Seminar, 3 SWS
Contact Hours / Independent Study	50 contact hours / 40 hours of self-study
Recommended Prerequisites	B1 of the CEFR
Group size	25
Learning Outcomes	<p>On completion of this module the student should be able to:</p> <ul style="list-style-type: none"> - Engage critically with ideas discussed - Apply functional language in a work-related context - Communicate confidently in work-related situations - Understand articles and reports concerned with business themes
Content	<p>This module will cover the following areas:</p> <ul style="list-style-type: none"> - Effective business communication principles - Written business communication (business correspondence, report writing, editing) - Oral business communication (preparing and giving presentations, facilitating discussions, working in groups, taking part in meetings, telephoning) - Socializing and networking - Strategies, skills and techniques for negotiating - Needs-related grammar
Requirements for Contact Hours	Compulsory attendance
Requirements for Self-Study Hours	Homework, Vocabulary practice
Assessment	Written examination
Reading	<p>Hughes, John, Jon Naunton. Business Result Intermediate Student's Book. Oxford University Press. Cotton, David, David Falvey, Simon Kent. Market Leader Intermediate New Edition Course Book. Pearson Education Limited.</p>

**Deutsch als Fremdsprache /
German as a Foreign Language**

Instructor	Christina Ahrberg
Language of Instruction	German
Curriculum Allocation	None specified
Module Format, Contact Hours per Week	Seminar/workshop, 6 hrs/wk.
ECTS Credits	6
Student Workload	100 contact hours, 80 hours of self-study
Recommended Prerequisites	According to the result of the German placement test (CEFR level)
Group size	25
Learning Outcomes	<p>According to the language level, the student will be able to:</p> <ul style="list-style-type: none"> - Understand oral and written contemporary German - Develop oral proficiency - Use idiomatic expressions - Develop facility with German within authentic cultural contexts - Gain knowledge of contemporary culture in German-speaking countries
Content	<p>Development of communication skills in reading, listening, speaking, and writing. Topics: German-speaking countries, intercultural misunderstandings, culture, and learning strategies.</p> <p>The language of instruction is German.</p>
Requirements for Contact Hours	Compulsory attendance
Requirements for Self-Study	Homework, vocabulary practice, exercises in the workbook
Assessment	Examination, 90 minutes
Reading	Dengler/Rusch/Schmitz/Sieber (2012): Netzwerk A1 bis B1.

Tandem Language Learning

Instructor	Catherine Bazil-Ottmann E-Mail: catherine.bazil-ottmann@hs-hannover.de
Language of Instruction	Mutual language exchange program geared towards students of different nationalities. Possible Languages for Tandems: German-English-Spanish-Chinese-others on request
Curriculum Allocation	None-specified
ECTS Credits	2
Course Type, Contact Hours per Week	30 contact hours / 30 hours of self-study
Recommended Prerequisites	A1 of the CEFR
Group Size	2
Learning Outcomes	<p>According to his/her language level the student will be able to:</p> <ul style="list-style-type: none"> - develop learning objectives - communicate with confidence - improve autonomous learning - acquire intercultural competencies - develop students' ability to reflect on their own native language and culture - improve spoken and written proficiency - acquire basic knowledge about culture - use idiomatic expressions - develop oral proficiency
Content	<p>Development of communication skills in reading, listening, speaking and writing.</p> <p>Topics: countries of the tandem partners, intercultural misunderstandings, culture, learning strategies.</p> <p>Asking for clarification, exchange experience, mindful listening, autonomous learning, equal partial amount of language application</p>
Requirements for Contact Hours	Autonomous learning with monitoring of a lecturer
Requirements for Self-Study	Homework, vocabulary practice, exercises, fill out a Tandem book
Assessment	Self-organised
Reading	Workbook, Term Paper

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