Hochschule Reutlingen
Reutlingen University

Preliminary List of Courses for Exchange Students

International Operations Management

Winter Semester 2022/23

www.esb-business-school.de

Course List for Exchange Students
International Operations Management
ESB Business School
Winter Semester 2022/23
Version: 24.05.2022

AACSB ACCREDITED

ESB BUSINESS SCHOOL

Contents

1. General information on course selection

Dear exchange student,

You may select your subjects from the courses outlined in this course catalogue.

In this course catalogue, you will find courses offered for exchange students in our **IOM Bachelors' programmes**. Please pay attention to the differing duration of the courses offered.

How to register for courses:

	Deadline winter semester	**Deadline summer semester**	**Contact person**
Application deadline	15 May	15 November	Your respective exchange coordinator
Preliminary course selection	15 July	15 January	Your respective exchange coordinator
Course counselling	September/ October	March	Your respective exchange coordinator
Final course selection[1].	October	March	Your respective exchange coordinator

[1] Please confirm your course selection by this date. It is not possible to join or leave courses after this date due to team assignments etc.

2. Overview of IOM Core Courses for Exchange students

Core courses for exchange students

- … are offered without overlapping
- … end in December (for the winter semester) or in July (for the summer semester)

*** Limited places available – the places will be allocated on a "first come, first served"-basis (if necessary).**

Title	Semester level	ECTS Credits	Course start summer semester	End of course summer semester	Course start winter semester	End of course winter semester
Simulation Game Production **(pre-semester)***	4th year	6	February/ March	February/ March	September	September/October
Change Management	Exchange students	6	March	July	October	December
Intercultural Management	Exchange students	6	March	July	October	December
Corporate Finance*	Exchange students	6	March	June/ July	October	December
Supply Chain Management Fundamentals*	Exchange students	6	March	June/ July	October	December
Strategic Management	Exchange students	6	March	June/ July	October	December
International Marketing*	3rd year	6	March	July	October	December
Business Management, Management Accounting and Control*	3rd year	6	March	July	October	December
Human Resources and Organisational Behaviour*	3rd year	6	March	July	October	December
Lean Management*	3rd year	6	March	June/ July	October	December
International Purchasing	Exchange Students	3	March	April	October	November

3. Overview of IOM Satellite Courses for Exchange students

Satellite courses for exchange students

- … might overlap with other courses
- … have different durations and might not end before February (in the winter semester)

Title	Semester level	Language of instruction	ECTS Credits	Course start winter semester	Course start summer semester	End of course winter semester	End of course summer semester
Germany within Europe*	Exchange	English	4	October		February	-
International Business with Case Studies in Automative Industry*	Exchange	English	4	October		February	-
Industrial Ecology*	3rd year	English	6 (short course 4)	October	March	February (short course with 4 ECTS ends in December already	July
Organizational Behaviour*	1st year	English	2	October	March	February	July
Advanced Mathematics III (modules Scientific Computing, Machine Learning and Data Analytics)*	2nd year	English	5	October	March	February	July
Operational Planning and Optimization (modules Operations Research, Operations Management Systems, Project Management)*	2nd year	English	6	October	March	February	July
English 2 and Intercultural Competencies*	2nd year	English	3	October	March	February	July
Business Processes and ERP Systems*	2nd year	English	5	October	March	February	July
Industrial Engineering*	2nd year	English	4	October	March	February	July

International Transport Logistics*	4th year	English	6	October	March	February	July
Distribution and Retail Logistics*	4th year	English	6	October	March	February	July
Maritime Logistics*	4th year	English	2	October	March	February	July
Operations Research*	4th year	English	2	October	March	February	July

*** Limited places available – the places will be allocated on a "first come, first served"-basis (if necessary).**

4. Course descriptions IOM Core courses

Core courses are the courses that finish in the winter term by middle of December and are scheduled to be without time overlap.

4.1. Integrative Module: Simulation Game Production

Blocked course before the semester starts

Module No.	223081
Semester	7
Duration of module	1 semester
Frequency	Every semester, blocked course before semester start (usually end of September/ beginning of March)
Prerequisits	
Level	Undergraduate
Lecturer	Sven Bauer
Language of lectures	English
Credits (ECTS)	6 ECTS
Total work load	180 hours (60 contact hours, 120 hours self study)
Contact hours /week	4 HPW
Assessment	Project work
Teaching methods	Seminars (40%) and teamwork (60%)
Learning outcomes	This course enables students to successfully apply business knowledge and techniques that they have acquired during their studies in an interactive simulation game. Moreover, social skills, teamwork, and the use of appropriate communication techniques are decisive for successfully leading a global company. The necessary planning activities include purchasing, production, distribution, marketing, and sales. Alternative decision-making processes and their impact on production, accounting, and financial situation of the company build upon continuous and target-oriented planning. Upon completion of this course, participants will be able to: • assess holistic processes of a company • link content learned from different disciplines of study • recognize and formulate the conditions for economic success • deal with complex decision situations
Content	Students get the opportunity to work in a group and develop alternative strategies based on a simulation model, and can test and apply them in a worldwide operating company. The companies run by the students have their headquarters in Europe and distribute a variety of products in the consumer goods industry in currently 4 existing world markets EU (European Union), NAFTA (North American Free Trade Agreement), MERCOSUR (Mercado Común des Sur) und ASEA (Association of Southeast Asian Nations). The course requires students to apply all of the previously acquired management training in the context of strategic decision-making. This

	helps them achieve successful company policies in conditions of market competition. Task areas: • Business objectives and strategies • Section: competitive analysis, marketing mix, product life cycle, product re-launch, product launch, market entry, costing of special transactions, contribution margin accounting, and market research reports as an information basis for marketing decisions • R&D: technology, ecology, value analysis • Procurement/warehousing: optimal order quantity • Manufacturing: investment, dis-investment, own production or external production, capacity planning, ecological production, rationalization, learning curve • Personnel: workforce planning, qualifications, productivity, duration of absence from work, turnover • Finance and accounting: cost types, cost centers, cost accounting, multi-stage contribution accounting, financial planning, balance sheet and income statement, cash flow • Stock price and company value • Portfolio analysis

4.2. Change Management

Module number	223131
Semester	Exchange
Frequency	Every semester
Prerequisites	none
Level	Undergraduate
Lecturer	Claudia Drews
Language of lectures	English
Credits (ECTS)	6
Total work load	180 hours
Contact hours/week	3hrs /week / 60 contact hours
Assessment	Exam (2 hrs)
Teaching method	Lectures with integrated case studies and a project, which has to be worked on in teams.
Learning outcome	The primary aim of the course is that by the end students are in the position to put into practice the strategy of change management in Business Process Reengineering (BPR). After completing this class, students will be in the position to: • Identify business and logistics processes which are suitable for BPR • Apply techniques and methods to measure the efficiency and effectiveness of business processes

	• Understand strategies and procedures as to how such a business process can be fundamentally optimised and newly configured • Be able to carry out planned changes and deal with any resistance
Contents	Keywords: quality management– TQM – lean management - BPR, process mapping, Value stream mapping, interview techniques, tools for process analysis, management of BPR projects, creative solutions, change management, conflict management and dealing with resistance.
Indicative reading list	Basics: – Mike Hammer: The reengineering revolution: A handbook. Harper Business, 1995 – Further reading: – Best, Eva, Weth, Marting: Geschäftsprozesse optimieren. Gabler Verlag, 2. überarb. Aufl. 2005 – Lofts, Norman: Process Visualization, Wiley & Sons, 2002 – Scheer, August-Wilhelm, Abolhassai, Ferri: Business Process Change Manag, Springer Verlag Berlin, 2003 – Holger Regber u.a.: Change Management in der Produktion: Moderne Industrie Verlag, 2001

4.3. Intercultural Management

Module number	223011
Semester	Exchange
Frequency	Every semester
Prerequisits	Good English language ability, some initial experience with other cultures or for those coming from a non-German cultural background
Level	Undergraduate
Lecturer	Baldur Veit, Milenka Plavec
Language of lectures	English
Credits (ECTS)	6
Total work load	180 hours
Contact hours /week	4 SWS
Assessment	Presentation and written composition
Teaching method	Lectures, homework and presentations
Learning outcomes	The aim of this class is to bring students closer to different cultural behaviour and intercultural business relationships. Raising awareness of foreign cultures and behaviour patterns is the primary aim of the class. After this class students should be in the position to: • Evaluate the influence of intercultural differences in international business relationships and adapt their behaviour according to these differences, • Prepare themselves appropriately in advance for new intercultural situations,

	• Understand the influence of cultural differences on management strategies as well as the company's goals and structure.
Contents	Intercultural comparison of values: • Aspects of intercultural leadership behaviour • Characteristics of intercultural team work • Intercultural HR management and development • Intercultural conflict management • Synergetic effects Specific cultural knowledge transfer for selected industrialised countries and emerging markets in the areas of cultural history, politics, religion, ethics, rules of society, economic background, behavioural and communication rules as well as conducting negotiations
Indicative reading list	Basics: – Béatrice Hecht-El Minshawi/Jutta Berninghausen „Interkulturelle Kompetenz" (Managing Cultural Diversity), 2007 – Marie-Joëlle Browaeys und Roger Price „Understanding Cross-Cultural Management", 2008 – Hofstede, Geert and Geert Jan Hofstede "Cultures and Organizations – Software of the Mind", 2005 – Luthans/Doh "International Management, Culture Strategy, and Behavior", 2009

4.4. Corporate Finance

Limited number of places available

Module number	223021
Year / Semester	Exchange
Frequency	Every semester
Prerequisites	None
Level	Undergraduate
Lecturer	Prof. Dr. Andreas Taschner, Prof. Johanna Bath
Language of lectures	English
Credits (ECTS)	6
Total workload	180 hours
Contact hours /week	3hrs /week / 45 contact hours
Assessment	1hr exam (70%), presentation (15%), continuous assessment (10%), case study (5%) Attendance mandatory!
Teaching method	Lectures and interactive format
Learning outcome	Through this course, students gain a basic understanding of the principles of corporate finance (investment and financing). • **Professional skills:** Students will understand and master the basics of corporate finance and recognize the relevance of financial decisions for entrepreneurial activities.

	• **Multidisciplinary skills:** Students will be able to apply concepts of corporate finance in specific business situations. Students will be able to identify the strengths and weaknesses of different approaches and reflect and identify appropriate methods. Students will be able to edit and solve schematic problems of medium complexity in small groups. • **Social skills:** Students will be able to identify potential conflicts between economically advantageous business decisions and ethical behavior and can critically reflect on them.
Contents	• The role of finance and investment decisions in enterprise, relevance of finance and investment for company management and company goals • Fundamentals of corporate financial management • Management of corporate capital and the different types of capital • Cost of capital • Financing options and overview of main sources of capital • Investment appraisal techniques • Measures of investment attractiveness (NPV, IRR, pay back, etc.) • Fundamentals of capital budgeting The role of risk in corporate finance
Indicative reading list	– Pyles, Mark K. Applied Corporate Finance. (2014). Springer. – Gotze, U. Investment Appraisal. (2015). Springer.

4.5. Strategic Management

Module number	223041
Year / Semester	Exchange
Frequency	Every semester
Prerequisites	None
Level	Undergraduate
Lecturer	Sebastian Pforr
Language of lectures	English
Credits (ECTS)	6
Total hours of study	180 hours
Contact hours /week	3hrs /week / 60 contact hours
Assessment	Presentation and Report
Teaching method	Lectures / Seminars In many practical group tasks the students will apply strategic tools to real business situations and transfer knowledge into applicable solutions.
Learning outcome	Strategic Management is an analytical and creative process in leading and developing an economic organization in modern societies. To approach the complexity of a globalized business world the students will learn how to build a strategic framework and how to develop corporate strategies.
Contents	• Corporate normative foundation (Vision, Mission and Values)

	• Strategic target system
	• Significance of strategic business fields and core competences
	• Value-based management vs. values-based management
	  ○ Developing of strategic options
	  ○ Developing process of strategies and the strategic plan
	  ○ Environmental analyses and strategic concepts
	• Strategic marketing
	• Strategic innovation management.

Recommended literature	– The Quintessence of Strategic Management: What You Really Need to Know to Survive in Business (2016) Kotler, Philip; Berger, Roland; Bickhoff, Nils. Series: Quintessence Series. Edition: Second Edition. Heidelberg: Springer. – Strategic Management (2002) Scholz, C., Zentes, J. – Strategic International Marketing (2015) Morschett, D., Schramm-Klein, H., Zentes, J. – Strategic Innovative Marketing (2017) Kavoura, A. (Ed), Sakas, D. P. (Ed), Tomaras, P. (Ed)

4.6. Supply Chain Management Fundamentals

Limited number of places available

Module number	223031
Year / Semester	Exchange
Frequency	Every semester
Prerequisites	None
Level	Undergraduate
Lecturer	Heusel, Espinosa
Language of lectures	English
Credits (ECTS)	6
Total work load	180 hours
Contact hours /week	4hrs /week / 60 contact hours
Assessment	Exam (2 hrs) und presentation (20% of grade)
Teaching method	Lectures / Seminars
Aims / learning outcome	In this class, students learn the challenges but also the opportunities of logistics in international surroundings and learn to evaluate different value chains form a financial and client perspective. After this class students will be in the position to evaluate risks and opportunities in logistics networks in different markets, design international logistics networks and to evaluate them with mathematical methods, understand how to manage and optimize these networks from the company point of view.
Contents	• Basics: What is a supply chain, what is supply chain management; challenges and opportunities in supply chain management; Customer und Shareholder Value

	• External drivers of change: Technology life cycle, industry clock speed, mega trends. • Internal drivers of change – System dynamics, beer game • Description of the supply chain with SCOR • Management, process, and product restructuring of the entire supply chain; Push and Pull; finance view of SCM; industry specific supply chain • Management, process, and product restructuring in manufacturing, purchasing (Inbound), distribution (Outbound), transport network and cooperation between partners from a supply chain point of view
Indicative Reading List	Basics: – Simchi-Levi, D./Kaminsky, P./Simchi-Levi, De: Designing and Managing the Supply Chain, Concepts, Strategie & Case Studies, 6nd edition. New-York: McGraw-Hill, 2003 – Christopher, M.: Logistics and Supply Chain Management. Creating Value-Adding Networks, Prentice Hall, 2004 Corsten, D / Gabriel, C. (2002): Supply Chain Management erfolgreich umsetzen. Berlin: Springer – Wisner, J.; Leong, K; Than, K-C (2005): Principles of Supplly Chain Management. A balanced Approach: Thomson South-Western Further Literature – Fine, C.H. (1998): Clockspeed: winning industry control in the age of temporary advantage. New York: Basic Books. – Moore, G. A. (2002): Crossing the chasm: Marketing and selling high-tech goods to mainstream customers. New York, USA: Harper Business

4.7. International Marketing

Module number	223051
Semester	6
Frequency	Every semester
Prerequisites	Basic understanding of marketing
Level	Undergraduate
Lecturer	Milenka Plavec
Language of lectures	English
Credits (ECTS)	6 ECTS
Total Work Load	180 hours
Contact Hours /Week	4 HPW
Assessment	Two-hour exam
Teaching method	Lecture
Learning Outcomes	• **Professional competencies:** Students will acquire the theoretical foundations of international marketing and knowledge of current trends and challenges of cross-border marketing.

	• **Multidisciplinary skills:** In the accompanying case studies and exercises, students learn the practical application of the methods and tools of international marketing and are therefore able to cope with practically relevant tasks. • **Social skills:** Group discussions, practical exercises, and the handling of current case studies promote teamwork, effective group work with other students, and respect for one another. Students learn to represent their own opinion even against resistance. Ethical aspects of international marketing will be discussed. • **Personal skills:** Students will learn to work in teams and enhance their solution and decision-making ability by working on and discussing current issues.

Contents	• Internationalization as a marketing challenge
	• Information bases in international marketing
	• International marketing concept
	  ○ Target definition
	  ○ Market selection and segmentation
	  ○ Strategy development
	  ○ Identify measures
	• Implementation of international marketing
	• Marketing control

Indicative Reading List	– Ghauri, P., Cateora, R.: International Marketing, 2010 – Kotabe, M., Helsen, K.: Global Marketing Management, 4th Edition, 2010 – Kotler, P., Armstrong, G.: Principles of Marketing, 14th Edition 2012

4.8. Business Management, Management Accounting and Control

Module number	223061
Semester	Semester 6
Duration of Module	1 semester
How Frequently is Module Offered	Every semester
Level	Undergraduate
Lecturers Name	Samer Ajour El Zein
Teaching Language	English
Credits (ECTS)	6 ECTS
Total Work Load	180 hours
Contact hours /week	4 SWS
Assessment	Project work and continuous assessment
Teaching methods	Seminar lectures, case studies, and role playing
Learning Outcomes	• **Professional skills:** Students will have a basic understanding of the role and responsibilities of corporate management in companies and recognize the interfaces for controlling and support functions.

	Students also understand the essential controlling instruments and their typical applications. • **Methodological skills:** Students can methodically attack a problem, derive concrete tasks, and propose a suitable solution with scientific methodology in order to implement the solution themselves. • **Multidisciplinary skills:** Students will be able to link theoretical concepts with real environments (companies), adapt theoretical models of corporate management and controlling to a specific business situation, and perform simple empirical research tasks. • **Social skills:** Students develop a variety of skills: self-organization, problem solving, and the ability to work on project management in small groups. • **Personal skills:** Students learn to act responsibly towards other group members.
Contents of Module	The role of corporate governance in execution, basic tasks, and management methods. Controlling systems: • Applications of controlling • Tasks and instruments of controlling • Understanding controlling and controlling loops Selected topics: • Performance measurement systems and performance management • Budgeting systems • Planning and controlling in a company
Indicative Reading List	The latest edition of the following books is recommended: – Dillerup, R. / Stoi, R.: Unternehmensführung – Weber, J. / Schäffer, U.: Einführung in das Controlling – Horváth, P. : Controlling – Küpper, H.-U. : Controlling

4.9. Human Resources and Organisational Behaviour

Module number	223071
Semester	6
Frequency	Every semester
Prerequesits	None
Level	Undergraduate
Lecturer	Prof. Dr. Hazel Grünewald, Ursula Wiehl-Schlenker
Teaching Language	English
Credits (ECTS)	6
Total Work Load	180 Hours (4 HPW/60 contact hours, 120 self-study hours)
Contact Hours /week	4HPW
Assessment	Homework and continuous assessment

Learning Outcomes	• **Professional competencies:** Understanding of key concepts, models, and practices within the field of HR and organizational behavior such as selection, personality, motivation, performance management, team dynamics and effectiveness, organizational learning, decision-making, leadership, organizational design, culture, and change management. Understanding of how theories can be used in practical applications. • **Methodological competencies:** Competence to develop and answer a specific research question, to prepare a paper and a presentation according to scientific standards. The ability to stand back and view complex situations in perspective and to think critically about organizations and what happens in them. • **Social competencies:** Presentation and teamwork skills (through group work and group presentations). • **Personal competencies:** Awareness of the necessary skills to realize an academic project; competence to evaluate other student's academic projects and presentations.
Contents of Module	The purpose of this course is to learn how to manage people in organizations. Understanding organizational behavior (OB) (at both the individual and organizational levels) and human resource management (HRM) is key to being an effective manager. This course uses an integrative approach to help students understand, predict, and influence how individuals behave at work. In addition, students will be provided with the tools to attract, select, and retain the right employees, while recognizing the role of the organization's culture and strategy and the impact of external forces. This course will use HRM practices to illustrate the importance of understanding OB theories. Many real-world examples will be used to provide a relevant and rich learning experience.
Teaching and Learning Methods	• Lectures with case studies, videos, group work, exercises, student presentations, and discussions
Indicative Reading List	Human Resource Management: – Armstrong, Michael. (2012). Armstrong's Handbook of Human Resource Management Practice. 12th edition. London: KoganPage – Bosselie, Paul. (2010). Strategic Human Resource Management: A Balanced Approach. Maidenhead: McGraw-Hill Higher Education – Millmore, Mike, Lewis, Philip, Saunders, Mark et al. (2007): Strategic Human Resource Management: Contemporary Issues. Harlow: Prentice Hall. Organizational Behavior: – Buelens, Marc.; Sinding, Knud; Waldstrøm, Christian et al. (2011): Organisational Behavior. 4th Edition. Berkshire: McGraw-Hill Higher Education. – Gerrig, Richard J., Zimbardo, Philip, Svartal, Frode et al. (2012): Psychology & Life. 18th Edition. European Adaptation Edition. Harlow: Pearson – Gully, Stanley M., Phillips, Jean M. (2014): Organizational Behavior: Tools for Success. 2nd Edition. International Edition. South-Western: Cengage.

	– McShane, Steven L.; von Glinow, Mary Ann. (2010): Organizational Behavior: Emerging Knowledge and Practice for the Real World. 5th Edition & International Edition. New York: McGraw-Hill Higher Education. – Robbins, Stephen P.; Campbell, Timothy; Judge, Timothy A. (2013): Organizational Behavior. 15th Edition. Upper Saddle River: Pearson.

4.10. Lean Management

Module No.	223111
Semester	6
Duration of Module	1 semester
Courses Included in the Module	Lean Management
How Frequently is Module Offered	Every semester
Admission Requirements	Advanced knowledge of production management and logistics, basic knowledge in supply chain management.
Level	Undergraduate
Lecturers Name	Dominik Rabus
Teaching Language	English
Credits (ECTS)	6 ECTS
Total Work Load	180 hours
Contact Hours /week	4 HPW
Type of Exam / Requirement for Credits	Two-hour exam and continuous assessment
Learning Outcomes	Structuring change is a key competence for a product manager in an international environment. In a company, lean thinking processes allow businesses to quickly and flexibly respond to new operational challenges and minimize complexity. After the successful completion of this module, students will be more aware about the significance of lean management. Students will know the necessary tools and measures to create and apply lean processes. In addition, students are also aware of the positioning and sustainable assurance of a holistic lean thinking process. • **Professional Skills:** Students will know the philosophy of lean management as well as the key tools and measures to create lean processes in production, administration, and development. • **Multidisciplinary skills:** Through practical case studies, simulations, and case examples, students can apply different tools to evaluate their success and adapt if necessary. • **Social skills:** The development of results in a team with a subsequent presentation promotes teamwork and communication skills. • **Personal skills:** The lectures and the presentation are held in English, which improves the language skills of participants.
Contents of Module	• Supply Chain Management • Lean Enterprise Management

	• Lean Manufacturing • Lean Administration • Lean Development • Management of Change
Teaching and Learning Methods	Different teaching methods will be used. In addition to conveying the theoretical foundations, the subject is applied and explained in practical team case studies and exercises. In conclusion, a comprehensive supply chain and production process optimization based on a real problem is described. In terms of solution development process, students have to apply the content learned in practice. At the same time, they have to deliberate on the application of lean management methods in relation to an adequate design of change management.
Indicative Reading List	– Rother, Mike: Die Kata des Weltmarktführers. Campus Verlag 2013. – Womack, James P., Jones, Daniel T.: Lean Thinking – Ballast abwerfen, Unternehmensgewinne steigern, Campus 2013. – Meier, David; Liker, Jeffrey: Der Toyota Weg. Finanzbuchverlag 2007. – Regber, Holger; Zimmermann, Klaus: Change Management in der Produktion. MI Fachverlag Landsberg, 2007. – A. Smalley: Produktionssysteme glätten: Anleitung zur Lean Production nach dem Pull-Prinzip - angepasst an die Kundennachfrage, Lean Enterprise Institute, 1. Auflage 2005. – Goldratt, Eliyahu Moshe; Cox, Jeff: The Goal- A process of ongoing improvement. 3rd revised edition (1st Edition 1984), 20th Anniversary Edition. The North River Press, Great Barrington, MA, USA. 2004. – May, Constantin; Schimek, Peter: Total Productive Management: Grundlagen und Einführung von TPM - oder wie Sie Operational Excellence erreichen. Ansbach: CETPM Publishing, 2008. – Höfer, Stephan; Geldmann, Udo; Spanagel, Stefanie: Wertstromdesign Lean Production. Das Handbuch für die Praxis. Herausgeber Effizient zum Erfolg GbR, Böhmenkirch. Auflage 2, 2011. – Wiegand, Bodo; Franck, Philip: Lean Administration. Lean Management Institut Aachen, 2006.

4.11. International Purchasing

Module number	
Semester	Exchange
Frequency	Every semester
Prerequisites	None
Level	Undergraduate
Lecturer	James Stone
Language of lectures	English
Credits (ECTS)	3
Total work load	90 hours
Contact hours/week	2 hrs/week / 30 Contact hours

Assessment	Exam (one hour)
Teaching method	Lecture/seminar and group work
Learning outcome	The class familiarizes students with the basic principles of the purchasing function in an international environment. After successful completion of this course the students should have gained the following knowledge and developed the following competencies: • **Professional competencies**: Understand the purchasing process and the main tools and techniques available; Provide a systematic understanding of the environments of international purchasing including social, economic, political, technical, legal, financial and cultural differences and how they impact international purchasing. • **Methodological competencies**: Apply basic concepts of international purchasing in real-life examples. Apply key techniques for analyzing and evaluating potential suppliers and constructing effective supplier selection processes • **Social competencies**: Co-operatively solve problems in small teams
Contents	The class explores the central concepts of international purchasing and interfaces this to the other areas of an organization. Topics discussed include: • Strategic purchasing, • Supplier evaluation and selection, • Costing, • Contracting and negotiation • Supplier evaluation and performance management
Indicative Reading List	TBC

5. Course descriptions Satellite courses

Satellite courses might overlap with other courses. They also have different durations and might not end before February (in the winter semester).

5.1. International Business with Case Studies in Automotive Industry

Limited number of places available

Module number	
Year / Semester	2
Frequency	Every Winter Semester
Prerequisites	Evolution of Management Thought Functions of a Manager Theories of Motivation and Leadership Organizational Structure and Design
Lecturer	Prof. Dr. Baldur Veit
Language of lectures	English
ECTS points	4
Total hours of study	180 hours
Hrs/week / Contact hours	4 hrs/week / 60 Contact hours plus additional field trips
Level	Undergraduate
Assessment	t.b.d.
Teaching method	Lecture/seminar with field trips
Aims/ Learning outcome	1. To provide the students with a contrast to American style of management. 2. To provide the students with an expanded view of management
Contents	This course has two parts. First, the course examines the practice of management within Europe. The course takes a multi- organizational perspective and places the practice of management in a global perspective. The second part of the course uses a series of videotapes to augment the study of multinational enterprises (MNEs) Topics: • German Unification • (Demographics, Economic System, Import / Export) • How to incorporate in Europe • Social Security System in Germany • Germany and the European Union • The Dual System of Vocational Training in Germany • German Industry on the Road of Globalization • German-American Trade Relations • Automotive Industry in Germany (BMW, Daimler: a) Engine Plant, b) Final Assembly of Cars; Opel, Audi)

	Video tapes: • Globalization & Economic Integration • Trade Theory • Foreign Direct Investment • Foreign Exchange Market • Entry Modes • Global Strategy
Recommended literature	All handouts will be provided by the professor

5.2. Germany within Europe

Limited number of places available

Module number	
Year / Semester	2
Frequency	Every Semester
Lecturer	Udo Stelzer
Language of lectures	English
ECTS points	4
Total hours of study	120 hours
Hrs/week / Contact hours	4 hrs/week / 60 Contact hours
Level	Undergraduate
Assessment	Midterm 30 %, Final 50 %, 20 % attendance and participation in class
Teaching method	Lecture/seminar
Aims/ Learning outcome	Upon completion of this course the student will be able to: Describe characteristics of Medieval European and German lifestyle, town structures. Explain effects of major historical events on German life. Demonstrate knowledge of periods of German history. Demonstrate comparative analysis of present and historical backgrounds of Germany within its relations to Europe and the U.S. Demonstrate critical thinking through tracing main historical concepts in recent political and cultural traits.
Contents	This course is dedicated to the most important topics in the history of Germany within the context of European history. Emphasis is placed on developing an understanding for major political, social and economic aspects of German history and on tracing back the German historical experience in its structural context. The comparison of historical time periods with European and U.S. history sets German history and German relations with other European countries in perspective. The course concentrates on investigation and analysis of historical trends and structures rather than numbers and data; contemporary developments included.
Recommended literature	– AXELROD, Alan; PHILLIPS, Charles: What everyone should know about the 20th century, Adam Publishing, Holbrook MA, 1995 – DÖNHOFF, Marion Gräfin et al.: Weil das Land Versöhnung braucht, Ein Manifest II, Rowohlt, Reinbek bei Hamburg, 1993

	– DOREN, Charles van: A History of Knowledge, The pivotal events, People and Achievements in World History, Ballentine Books, New York, 1992 – TARNAS, Richard: The Passion of the Western Mind, Understanding ideas that shaped the Western World View, Random House, Toronto, 1993

5.3. Industrial Ecology

Limited number of places available

Module No.	223091
Semester	6
Frequency	Every semester
Prerequesits	None
Level	Undergraduate
Lecturer	Prof. Peter Kleine-Möllhoff
Language of lectures	English
Credits (ECTS)	6 ECTS (4 ECTS for those finishing in December)
Total workload	180 hours (60 contact hours, 120 hours self study)
Contact hours /week	4 HPW
Assessment	1 hour exam
Teaching methods	Lecture (70%), elaboration of special topics in homework and presentations (30%)
Learning outcomes	• **Professional skills**: Students learn different aspects and dimensions of sustainable management in production. They understand different approaches and methods for the implementation of ecological, economic, and social requirements in the company to implement in practical examples. Students are able to describe and evaluate the advantages and disadvantages of different approaches. • **Methodological skills:** Students learn the basic principles of sustainable management (triple bottom line approach, energy and material flow management, environmental management accounting, etc.) and advanced methods of detection of environmental and economic indicators, such as LCA. • **Multidisciplinary skills:** Through case studies, students develop solutions for practice-relevant problems. • **Social skills:** The course promotes sustainable orientation with respect to environmental, economic, and social issues in business. Personal and normative competencies: Students recognize that sustainable management requires an extension of the code of values and respect for natural and social conditions and moral ideas.
Content	• Introduction to the issue of sustainability • Environment, economy, and social responsibility: • Technology and Environment • Legal conditions

	• Environmental and sustainability-oriented enterprise valuation • Sustainability Strategies • LCA • Operating energy and material flow management • Conventional energy supply and renewable energy
Indicative reading list	Compulsory: – T. Graedel, B.R. Allenby, Industrial Ecology and Sustainable Engineering, Pearson Education, Upper Saddle River, 2010 – Gleich et. al., Industrial Ecology - Erfolgreiche Wege zu nachhaltigen industriellen Systemen, Vieweg-Teubner, 2008 – EN ISO 14040, Environmental management - Life cycle assessment - Principles and framework; German and English version, Beuth Verlag, Berlin, 2006 – EN ISO 14044, Environmental management - Life cycle assessment - Requirements and guidelines; German and English version EN ISO 14044:2006, Beuth Verlag, Berlin, 2006 Recommended reading list: – C. Fussler et. al., Driving Eco Innovation, Pitman Publishing, London, 1996 – haJ. Fresner et. al., Ressourceneffizienz in der Produktion – Kosten senken durch Cleaner Production, Syposium Publishing, Düsseldorf, 2009

5.4. Organizational Behaviour

Limited number of places available.
This course should not be combined with Human Resources and Organisational Behaviour

Module number	223151
Lecturers name; contact details see ESB-website	Prof. Dr. Hazel Grünewald
Teaching language	English
Credits (ECTS)	2
Total work load	60 hours
Contact hours per week	2 HPW
Learning outcomes	After the successful completion of this course the students should have gained the following knowledge and developed the following competencies: • **Professional competencies**: understanding of key concepts, models, and practices within the field of organisational behaviour such as personality, motivation, team dynamics and effectiveness, decision-making, organisational design, culture and change; appreciation of how theories can be translated into practical applications. • **Methodological competencies**: competence to develop and answer a specific research question, to prepare a paper and a presentation according to scientific standards. The ability to be able to stand back

	and view complex situations in perspective and to think critically about organisations and what happens in them • **Social competencies**: presentation and teamwork skills (through group work and group presentations). • **Personal competencies**: awareness of the own skills in realising an academic project; competence to evaluate other student's academic projects and presentations.
Graded/ungraded	Graded
Course-specific contribution to AoL Competence Goals	**Competence Goal 1.1:** reinforced (Students design and deliver an interactive lecture in English, using highly effective teaching techniques) **Competence Goal 2.1:** reinforced (Students consider international perspectives of organisational behaviour e.g., working in global virtual teams, cultural differences in leadership.) **Competence Goal 3.1**: reinforced (The students discuss organisational behaviour from different ethical perspectives e.g., equity theory, organisational justice.)
Contents/ Indicative syllabus	PART I: The world of organisational behaviour • Foundations of organisational behaviour PART II: Individual Process • Understanding people at work o Personality dynamics o Values o Perception and learning o Emotions, attitudes and stress • Motivation and job satisfaction o Content and process theories o Reinforcement theories o Designing a motivating work environment
Teaching and learning methodology	Lectures with case studies, videos, group work, exercises, student presentations and discussions
Miscellaneous	---
Indicative reading list	– Buelens, Marc, Sinding, Knud; Waldstrøm, Christian et al. (2011): Organisational Behaviour. 4th Edition. Berkshire: McGraw-Hill Higher Education. – Gerrig, Richard J., Zimbardo, Philip, Svartal, Frode et al. (2012): Psychology & Life. 18th Edition. European Adaptation Edition. Harlow: Pearson – Phillips, Jean M. and Stanley M. Gulley. (2014). Organizational Be-havior: Zools for Success. 2nd edition. Mason, OH: South-Western Cengage Learning. – Robbins, Stephen P.; Campbell, Timvothy; Judge, Timothy A. (2013): Organizational Behavior. 15th Edition. Upper Saddle River: Pearson.

5.5. Advanced Mathematics III

Limited number of places available

Module number	223171
Semester	3
Duration of module	1 Semester
Courses included in the module	• Scientific Computing • Machine Learning and Data Analytics
How frequently is the module offered	Every semester
Admission requirements	Mathematics skills and knowledge of programming in Python
Level	Undergraduate
Transferability of the module to other programmes	This module is transferable to any programme following the same framework and teaching the same level of competences.
Responsible professor/ Module coordinator	Prof. Dr. Volker Reichenberger
Total number of ECTS	5
Examination/ Type of assessment	Written exam (2hrs.)
Learning outcomes (module)	Competencies in applied mathematics and the basics of machine learning, artificial intelligence and data analytics, including the ability to apply methods using software.
Graded/ungraded	Graded
Weighting of grade within overall programme	According to credits

5.5.1. Scientific Computing

Lecturers name: contact details see ESB-website	Prof. Dr. Volker Reichenberger
Teaching language	English
Credits (ECTS)	2
Total work load	60 hours
Contact hours per week	2 SWS
Learning outcomes	• Matrix Analysis • Numerical Mathematics
Graded/ungraded	Graded

Course-specific contribution to AoL Competence Goals	**Competence Goal 1.1:** introduced (Students get familiar with English notions of scientific computing.) **Competence Goal 2.1:** introduced (Students learn to apply mathematical methods for solving scientific problems and understand the fundamantels behind machine learning.) **Competence Goal 3.1:** reinforced (students are familiar with advanced mathematical and statistical concepts and are able to apply them to problems in economics and engineering) **Competence Goal 4.1:** reinforced (students are able to apply advanced digital tools for collaboration, analysis and communication and/or are able to apply knowledge regarding digital aspects of economics and engineering)
Contents/ Indicative syllabus	• Matrix Analysis • Eigenvalue problems • Numerical Integration • Numerical solution of matrix problems • Numerical solution of ordinary differential equations • Fast Fourier Transform
Teaching and learning methodology	Lecture with exercises
Miscellaneous	---
Indicative reading list	– Murphy: Machine Learning

5.5.2. Machine Learning and Data Analytics

Lecturers name: contact details see ESB-website	Prof. Dr. Volker Reichenberger
Teaching language	English
Credits (ECTS)	3
Total work load	90 hours
Contact hours per week	2 SWS
Learning outcomes	• Machine Learning with Python • Data Analytics with Python
Graded/ungraded	Graded
Course-specific contribution to AoL Competence Goals	**Competence Goal 1.1:** introduced (Students get familiar with English notions of machine learning and data analytics.) **Competence Goal 4.1:** introduced (Students learn to apply machine learning and statistics practically with Python.) **Competence Goal 5.1:** reinforced (Students are familiar with advanced mathematical and statistical concepts and are able to apply them to problems in economics and engineering) **Competence Goal 6.1:** reinforced (Students are able to apply advanced digital tools for collaboration, analysis and communication and/or are able

	to apply knowledge regarding digital aspects of economics and engineering)
Contents/ Indicative syllabus	• Supervised Learning with Python: k-NN, neural networks, support vector machines, boosting, bagging • Unsupervised learning • Data analytics: applying descriptive statistics with Python, visualisation
Teaching and learning methodology	Lecture with exercises
Miscellaneous	---
Indicative reading list	– McKinney: Python for Data Analysis

5.6. Operational Planning and Optimization

Limited number of places available

Module number	223161
Semester	3
Duration of module	1 semester
Courses included in the module	• Operations Research • Operations Management Systems • Project Management
How frequently is the module offered	Every semester
Admission requirements	Mathematics skills
Level	Undergraduate
Transferability of the module to other programmes	This module is transferable to any programme following the same framework and teaching the same level of competences.
Responsible professor/ Module coordinator	Prof. Dr. Günter Bitsch
Total number of ECTS	6
Examination/ Type of assessment	Written exam (3hrs.)
Learning outcomes (module)	• Knowledge of the structure, operation and optimization of planning systems • The ability to analyze, evaluate and optimize processes or process parameters, in particular by using mathematical methods • The ability to holistically manage projects based on different standards and techniques
Graded/ungraded	Graded

5.6.1. Operations Research

Lecturers name: contact details see ESB-website	Prof. Dr. Volker Reichenberger
Teaching language	English
Credits (ECTS)	2
Total work load	60 hours
Contact hours per week	2 HPW
Learning outcomes	Students are able to build elementary mathematical models for optimization problems and to apply established solution methods to these problems. They can apply their knowledge for scientific research as well as for practical purposes in engineering applications. They are able to judge the qualitiy of mathematical models and of solutions provided by computer programs. They know about the possibilities of modelling as well as their shortcomings.
Graded/ungraded	Graded
Course-specific contribution to AoL Competence Goals	**Competence Goal 1.1:** introduced (Students get familiar with English notions from operations research.) **Competence Goal 4.1:** introduced (Students learn to solve complex practical optimization problems using mathematical methods.) **Competence Goal 5.1:** reinforced (Students are familiar with advanced mathematical and statistical concepts and are able to apply them to problems in economics and engineering) **Competence Goal 6.1:** introduced (Students are able to apply advanced digital tools for collaboration, analysis and communication and/or are able to apply knowledge regarding digital aspects of economics and engineering)
Contents/ Indicative syllabus	• Linear problems and linear programming • Special linear problems (transportations problems etc.) • Graph-based problems • Simulation methods
Teaching and learning methodology	Lecture with exercises
Miscellaneous	---
Indicative reading list	– Hillier, Liebermann: Introduction to Operations Research. McGrawHill 2020

5.6.2. Operations Management Systems

Lecturers name: contact details see ESB-website	Prof. Dr. Günter Bitsch
Teaching language	English
Credits (ECTS)	2
Total work load	60 hours
Contact hours per week	2 HPW
Learning outcomes	• **Technical competencies:** Students get to know IT application systems in different areas (ERP, CRM, BI). • **Methodological competencies:** Students learn procedures and methods for the selection, operation, and improvement of user acceptance of IT application systems. • **Social competencies:** Students work in small groups on application-related tasks with state-of-the-art real-life applications in various roles. • **Personal competencies**: Students learn to work on operational tasks with real-life applications and to critically evaluate the use of these systems in terms of technology, economic benefit, and user acceptance.
Graded/ungraded	Graded
Course-specific contribution to AoL Competence Goals	**Competence Goal 1.1:** reinforced (The language of the lecture is English, thus improving the language skills of the student.) **Competence Goal 4.1:** introduced (Students get to know different operational application systems and can courseify them concerning the different phases of selection, implementation, and operation) **Competence Goal 6.1:** reinforced students are able to apply advanced digital tools for collaboration, analysis and communication and/or are able to apply knowledge regarding digital aspects of economics and engineering)
Contents/ Indicative syllabus	• Basics of Operations Management Systems • ERP (Selection, Implementation, Operation) • Business Intelligence and Business Analytics • CRM • SCM • SAP S/4 Hana Business Case
Teaching and learning methodology	Lecture, group collaboration and exercises
Miscellaneous	---
Indicative reading list	– Alpar, Paul, et al. Anwendungsorientierte Wirtschaftsinformatik: Strategische Planung, Entwicklung und Nutzung von Informationssystemen. Springer, 2019. – Hansen, Hans Robert, et. al. Wirtschaftsinformatik. Walter de Gruyter, 2019

	– Gronau, Norbert. Enterprise resource planning: Architektur, Funktionen und Management von ERP-Systemen. Oldenbourg, 2010 – Laudon, Kenneth C., Laudon, Jane Management Information Systems: Managing the Digital Firm, 16th Edition. Pearson, 2020

5.6.3. Course: Project Management

Lecturers name: contact details see ESB-website	NN
Teaching language	English
Credits (ECTS)	2
Total work load	60 hours
Contact hours per week	2 HPW
Learning outcomes	Upon successful completion, students will have developed the following competencies: • **Subject-specific competencies**: Students have developed the basic competencies in project management such as project definition and evaluation; planning and scheduling; resource selection, communication and feedback issues and cultural considerations. • **Methodological competencies:** Students have the ability to analyse project processes and use methods and systems to plan, schedule and monitor projects. • **Specialised and practical competencies, skills and abilities:** Students deepen their practical skills in the field of project management by applying all subject specific competencies in a project example in small teams in the lecture. • **Social competencies:** Students perform effectively as a team member while having also developed basic project leadership skills within a project team. • **Normative competencies:** Students increase personal and work effectiveness in communication and interaction in teams as well as become aware of complexity of working within a project team.
Graded/ungraded	Graded
Course-specific contribution to AoL Competence Goals	• **Competence Goal 1.1:** reinforced (Students get familiar with specific terms from the field of project management. They are constantly able to practice their written and oral language skills in English). • **Competence Goal 2.1:** reinforced (Students get familiar with specific aspects of international project management to understand different management approaches and team developing strategies.) • **Competence Goal 3.1:** introduced (Students learn that project management also means to discuss ethical issues depending on the project subject. In addition they learn that the management of projects is influenced by ethical conventions of the company and the project environment.)

	• **Competence Goal 4.1:** reinforced (Students get the ability to analyse processes, methods and systems used to plan, schedule and monitor projects. They will have developed the basic competencies in project management such as project definition and evaluation, planning and scheduling, resource selection and communication.)
Contents/ Indicative syllabus	• Introduction to Project Management • Project Selection • Project Life Cycle and Organisation • Project Goals and the Project Manager • Develop Project Charter and A3 • Project Integration Management • Project Scope Management • Project Time Management • Project Cost Management • Project Quality Management • Project Human Resource Management • Project Communication Management • Project Procurement Management • Project Executing • Project Monitoring & Controlling • Project Closing
Teaching and learning methodology	Lecture with interactive workshops
Miscellaneous	---
Indicative reading list	Basics: – Project Management Institute (Hrsg.) (2017): A guide to the project management body of knowledge: PMBOK® guide. Newtown Square, PA: PMI, 6. ed., 2017. ISBN 978-1-935589-67-9 – DIN 69900 Netzplantechnik (critical path method) – DIN 69901-1 Grundlagen (basics) – DIN 69901-2 Prozesse, Prozessmodell (processes, process model) – DIN 69901-3 Methoden (methods) – DIN 69901-4 Daten, Datenmodell (data, data model) – DIN 69901-5 Begriffe (terms) – DIN-Fachbericht ISO 10006 Leitfaden für Qualitätsmanagement in Projekten – Köster, Kathrin (2009): International Project Management. London: Sage Publications. ISBN 978-1412946216 Further readings: – Bruno, Jenny (2016): Projektmanagement, Zürich: vdf Hochschulverlag, 5. Auflage. – Braehmer, Uwe (2009): Projektmanagement für kleine und mittlere Unternehmen: Das Praxisbuch für den Mittelstand. München: Hanser Verlag, 2. Auflage. ISBN 978-3-446-42160-8, eBook

	– Drees, Joachim / Conny Lang / Marita Schöps (2014): Tipps, Tools und Tricks aus der Praxis für die Praxis. München: Hanser. ISBN 978-3-446-44225-2, eBook – Drews, Günter (2014): Praxishandbuch Projektmanagement. Freiburg; München: Haufe-Lexware. ISBN 978-3-648-05090-3 – Jakoby, Walter (2010): Projektmanagement für Ingenieure: Gestaltung technischer Innovationen als systemische Problemlösung in strukturierten Projekten. Wiesbaden: Vieweg + Teubner. ISBN 978-3-8348-0918-6, eBook – Meredith, Jack R. / Samual A. Mantel (2015): Project Management: A Managerial Approach. Hoboken, NJ: Wiley, 10th edition. ISBN 978-0470533024 – Rad, Parviz F. / Ginger Levine (2006): Metrics for project management: formalized approaches. Vienna, VA: Management Concepts. ISBN 1-56726-166-3 – Wanner, Roland (2007): Earned Value Management: so machen Sie Ihr Projektcontrolling noch effektiver. Norderstedt: Books on demand. ISBN 978-3-8370-0657-5

5.7. Module: English 2 and Intercultural Competencies

Limited number of places available

Module number	
Semester	3
Duration of module	1 semester
Type of module	Compulsory
Courses included in the module	English 2 Intercultural competencies
How frequently is the module offered	Each semester
Level	Undergraduate
Responsible professor/ module coordinator	Prof. Dr. Niamh O'Mahony
Total number of ECTS	3 ECTS
Total workload and breakdown	90h
Learning outcomes of the module	See below for the specific learning outcomes for each subsection
Examination/ type of assessment	Continuous Assessment, project work

5.7.1. English 2

Name(s) of lecturer(s); see ESB website for contact details	Mark Hyland
Language of instruction	English
Contact hours per week	2 SWS
Learning outcomes of the course	The students will develop and deepen their language skills through individual and group work, discussions, and role-plays with a focus on extending their business vocabulary and particularly improving their written English skills. • **Professional competencies:** Students will be able to communicate spontaneously and fluently. Communication with a native speaker should be possible without any strain from both sides. This level corresponds to B2 of the Common European Framework. • **Methodological competencies:** Students will be able analyze, synthesize, argue, conclude, and write freely in the English language. • **Multidisciplinary skills:** At this level, students are able to grasp the main ideas of a complex text on topics relevant to their studies. They are able to create a clear, detailed text on a wide range of subjects related to their field, and explain their point of view and present the advantages and disadvantages of different options. Students are capable of critical, analytical, and creative thinking. • **Personal skills:** Students will develop greater self-confidence through improved self-expression in English.
Course-specific contributions to AoL competency goals (CG 1-6)	**CG 1 reinforced:** In order to successfully cope with typical business situations, students will learn new vocabulary, grammatical structures and expressions relevant to communicating particularly in written form. **CG 2 reinforced:** Topics covered will be drawn from a wide-range of English-speaking countries, providing intercultural insights into these countries and the differences to Germany.
Content/ indicative syllabus	Thorough preparation for an efficient and confident application of the English language in the technical-commercial area. Subject-specific grammar and vocabulary are repeated and new vocabulary is practiced. Students writing skills are honed to ensure clear written business communication.
Teaching and learning methods	Seminar lecture with practical role-playing, simulations, and intensive andinteractive language training with a focus on transferable skills
Miscellaneous	
Indicative reading list	All the necessary documents are provided during the course. Further reading: Regular reading of English magazines or newspapers, for example: The Economist, Time, Business Spotlight.

5.7.2. Intercultural Competencies

Name(s) of lecturer(s); see ESB website for contact details	Prof. Dr. Hazel Grünewald
Language of instruction	English
Contact hours per week	1 SWS
Learning outcomes of the course	Raising awareness of foreign cultures and behaviour patterns is the primary aim of the class. After this class students should be in the position to: • Evaluate the influence of intercultural differences in international business relationships and adapt their behaviour according to these differences. • Prepare themselves appropriately in advance for new intercultural situations. After successful completion of this course the students should have gained the following knowledge and developed the following competencies: • Professional competencies: knowledge and application of current intercultural management concepts and approaches; competence to analyse the influence and the consequences of cultural differences in specific international business situations • **Methodological competencies:** problem-solving skills (how to use theoretical concepts to solve problems in case studies) • **Social competencies:** advanced presentation and teamworking skills (through group discussions and group presentations). Basic competence to interact successfully in an intercultural business environment. • **Personal competencies:** awareness of their own cultural profile, the individual strengths, and weaknesses in intercultural business situations
Course-specific contributions to AoL competency goals (CG 1-6)	**CG 1 reinforced:** Students become familiar with specific terms from the field of culture in an international context. They are constantly able to practice their written and oral language skills in English. **CG 2 assessed:** Students evaluate the influence of intercultural differences in international business relationships and adapt their behaviour according to these differences. They prepare themselves appropriately in advance for new intercultural situations. **CG 3 reinforced:** Students gain an awareness of the own cultural profile, ethical behaviour, the individual strecaneaknesses in intercultural business situations. They seek advice, integrate suggestion, and reflect on what they are doing. The learn how to cope with conflict situations.
Content/ indicative syllabus	Fundamentals of intercultural communication; approaches to intercultural management, culture-specific examples, intercultural communication and management in practice

Teaching and learning methods	Lecture, discussions, case studies, videos, E-Learning, simulations and exercises.
Miscellaneous	
Indicative reading list	Basics: – Bennett, M.J. (Ed.) (1998. Basic Concepts of Intercultural Communication. Intercultural Press. – Browaeys, M.-J. & Price, R. (2015). Understanding Cross-Cultural Management (3rd ed.). Pearson – Deardorff, Darla K. (2009). The SAGE Handbook of Intercultural- – Competence. Sage. – Chhokar, J.S., Brodbeck, F.C., & House, R.J. (Eds.) (2008): Culture and Leadership Across the World: The GLOBE Book of In-Depth Studies of 25 Societies. Lawrence Erlbaum. – Haller, P.M., Naegele, U. & Berger, S. (2019). Bridging Cultural Barriers: How to Overcome Preconceptions in Cross-Cultural Relationships. Springer. – Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and – Organizations –Software of the Mind, McGrawHill – Meyer, E. (2016). The Culture Map. Decoding How People Think, Lead, and Get Things Done across Cultures. Public Affairs.

5.8. Business Processes and ERP Systems

Limited number of places available

Module number	
Semester	3
Duration of module	1 semester
Courses included in the module	Business Processes and ERP Systems – lecture and laboratory
How frequently is the module offered	Every semester
Admission requirements	
Level	Undergraduate
Transferability of the module to other programmes	
Responsible professor/ module coordinator	Prof. Dr. Manfred Estler
Total number of ECTS	5 ECTS
Total workload and breakdown	150hrs

Learning outcomes of the module	The students learn to design a business process using a state-of-the-art ERP system and understand the basic ideas of business process management. They also become familiar with the theoretical basis of modern quality management and will be able to apply a wide range of quality management methods within an enterprise context. Since both aspects are closely connected with various kinds of processes within a company, students gain a comprehensive understanding of all these processes. Furthermore, it will be discussed how the two topics of Enterprise Resource Planning and quality management can contribute to the implementation of the Sustainable Development Goals of the United Nations.In order to be able to master major aspects of a comprehensive process understanding in an international context, one part of the module will be held in English, the other in German.
Examination/ type of assessment	Exam (1 hr), Continuous Assessment

5.8.1. Business Processes and ERP Systems

Name(s) of lecturer(s); see ESB website for contact details	Prof. Dr. Manfred Estler
Language of instruction	English
Contact hours per week	3 HPW
Learning outcomes of the course	At the end of the course, students will have gained the following competencies: • **Professional competencies:** Acquirement of theoretical basic knowledge of modern ERP systems as well as knowledge about its essential functions and typical application within companies. • **Methodological competencies:** At the end of the course, students will be able to describe the relationship between business process management and the applied ERP system.
Course-specific contributions to AoL competency goals (CG 1-6)	**CG 1 reinforced:** Students will gain skills in using in subject-specific technical terms in two languages. **CG 3 reinforced:** Students reflect the issues of sustainability and carbon foot printing in production and supply chain management **CG4 reinforced:** Students will acquire basic principles of modern integrated information systems and their application within a company. Here it is of special importance to develop the overall context between business process management and the supporting task of integrated information systems for the business processes. **CG6 reinforced:** Students learn the integrational aspects of integrated information systems regarding all business functions, especially the integration of logistics aspects with accouting issues.

Content/ indicative syllabus	• Business processes and business process modelling • Fundamentals of modern ERP systems • Introduction to the ERP system SAP ERP with special focus on important logistics processes • Introduction to selected topics in information technology (e.g. Advanced Planning and Scheduling for Supply Chain Management, Customer Relationship Management, e-Business, etc.) • New trends: service oriented architectures, web services, SAP Netweaver, SAP S4/HANA, etc. • Introduction to sustainable Supply Chain Management and green logistics In addition, the lecture will discuss two aspects with regard to sustainability: 1) How do ERP software vendors support their customers in developing their business model towards sustainability and CO2 neutrality? 2.) How can the operation of the required IT components be made more environmentally friendly, e.g. through appropriate energy-saving measures?
Teaching and learning methods	Lecture
Indicative reading list	– Kurbel, K.: Enterprise Resource Planning and Supply Chain Management. Springer Verlag, Berlin, 2013 – Weske, M.: Business Process Management, Springer Verlag, Berlin, 2019 – Dickersbach, J., Keller. G., Weihrauch, K.: Production Planning and Control with SAP, Galileo Press, 2007 – Laudon, K.C., Laudon, J.P.: Management Information Systems, Pearson Studium, 2019 – Bouchery, Y., Corbett, C.J., Fransoo, J.C., Tan.T: (Eds.): Sustainable Supply Chains, Springer Verlag, Berlin, 2017

5.8.2. Laboratory ERP Systems

Name(s) of lecturer(s); see ESB website for contact details	Prof. Dr. Manfred Estler
Language of instruction	English
Contact hours per week	1 HPW
Learning outcomes of the course	At the end of the lab sessions, students will have gained the following competencies: • **Practical competencies:** During a detailed case study, students will learn the comprehensive application skillset for the SAP ERP system
Course-specific contributions to AoL	**CG 1 reinforced:** Students will gain skills in using in subject-specific technical terms in two languages.

competency goals (CG 1-6)	**CG4 reinforced:** During this lab session, students learn to use the SAP ERP system for executing important logistic business processes. **CG 6 reinforced:** Practical case studies on the bases of the SAP ERP system help students to undertand the digital processing of central department crossing business processes within companies.
Content/ indicative syllabus	• Business processes and business process modelling • Fundamentals of modern ERP systems • Introduction to the ERP system SAP ERP with special focus on important logistics processes • Introduction to selected topics in information technology (e.g. Advanced Planning and Scheduling for Supply Chain Management, Customer Relationship Management, e-Business, etc.) • New trends: service oriented architectures, web services, SAP Netweaver, SAP S4/HANA, etc. • Introduction to sustainable Supply Chain Management and green logistics In addition, the lecture will discuss two aspects with regard to sustainability: 1) How do ERP software vendors support their customers in developing their business model towards sustainability and CO_2 neutrality? 2.) How can the operation of the required IT components be made more environmentally friendly, e.g. through appropriate energy-saving measures?
Teaching and learning methods	Lecture
Indicative reading list	– Kurbel, K.: Enterprise Resource Planning and Supply Chain Management. Springer Verlag, Berlin, 2013 – Weske, M.: Business Process Management, Springer Verlag, Berlin, 2019 – Dickersbach, J., Keller. G., Weihrauch, K.: Production Planning and Control with SAP, Galileo Press, 2007 – Laudon, K.C., Laudon, J.P.: Management Information Systems, Pearson Studium, 2019 – Bouchery, Y., Corbett, C.J., Fransoo, J.C., Tan.T: (Eds.): Sustainable Supply Chains, Springer Verlag, Berlin, 2017

5.9. Industrial Engineering

Limited number of places available

Module number	
Semester	3
Duration of module	1 semester
Courses included in the module	• Industrial Engineering • Laboratory Industrial Engineering
How frequently is the module offered	Every semester
Admission requirements	• Fundamentals of Engineering • Fundamentals of Business

	• Higher Mathematics and Statistics
Level	Undergraduate
Transferability of the module to other programmes	
Responsible professor/ module coordinator	Prof. Dr. Jochen Hartung
Total number of ECTS	4 ECTS
Total workload and breakdown	120h
Learning outcomes of the module	
Examination/ type of assessment	Written exam (1h), project

5.9.1. Class: Industrial Engineering

Name(s) of lecturer(s); see ESB website for contact details	Prof. Dr. Jochen Hartung
Language of instruction	English
Contact hours per week	3 HPW
Learning outcomes of the course	Students learn to design, realize and optimize industrial work systems for different enterprise environments. Upon successful completion, students will have developed the following competencies: • **Subject-specific competencies:** Understanding foundations of work place and work system design and systematically develop production and work systems. Understand the interconnections of economic, organizational and technical aspects of work systems as well as chances and risks of innovative methods and tools of advanced industrial engineering and the digitalisation. • **Methodological competencies:** Applying typical methods and tools of industrial engineering. • **Specialised and practical competencies, skills and abilities:** Students focus at work place and work system design on sustainable and social aspects, e. g. inclusion of handicapped people in the work environment. • **Social competencies:** The social competence is developed in small projects during the semester in which the students work together. • **Normative competencies:** Students recognize the importance of human-centred and sustainable forms of work systems.

Course-specific contributions to AoL competency goals (CG 1-6)	**CG 1 reinforced:** Students deepen their language proficiency in the field of industrial engineering. They are constantly able to practice their written and oral language skills in English. **CG 3 reinforced:** Students get to know that industrial engineering also means to discuss sustainable and ethical issues. Therefore, students also must reflect the integration of handicapped people in the production workforce. **CG 4 reinforced:** Students build on their available domain knowledge and learn to systematically develop production and work systems, understand foundations of work place and work system design. They apply the typical methods and tools of industrial engineering. **CG5 reinforced:** Students learn to integrate workplace design in the product developement and realisation process in terms of Simultaneous Engineering. **CG 6 reinforced:** Students learn about digital tools for workplace and work system design, their application and linking in terms of a digital process chain. They will also learn about digital tools for use in the workplace and how people interact with supporting digital tools.
Content/ indicative syllabus	Design, planning and optimization of changeable work systems • Introduction • Production and work systems • Time determination and measurement systems • Part lists and working plan • Work place design, ergonomics and environmental influences • Physical work load and stress • Work place analysis • Motivation • Industry 4.0 • Hybrid working systems • Technical assistance systems • Digital Engineering – holistic approach, overview, examples and demonstrations, digital twin at work place design
Teaching and learning methods	Lecture and small project work
Indicative reading list	– Bullinger, Hans-Jörg (2013): Ergonomie (Technologiemanagement - Wettbewerbsfähige Technologieentwicklung und Arbeitsgestaltung). Vieweg+Teubner Verlag. – Bundesanstalt für Arbeitsschutz (Hrsg.) (2017): Kleine ergonomische Datensammlung. 16. Aufl. – Schlick, Christopher / Ralph Bruder / Holger Luczak (2018): Arbeitswissenschaft. 4. Aufl., München: Springer Vieweg.

5.9.2. Class: Laboratory Industrial Engineering

Name(s) of lecturer(s); see ESB website for contact details	Prof. Dr. Jochen Hartung
Language of instruction	English
Contact hours per week	1 HPW
Learning outcomes of the course	Students learn to design, realize and optimize industrial work systems with specific hands-on methods, e. g. cardboard engineering and digital twins. Upon successful completion, students will have developed the following competencies: • **Subject-specific competencies:** Students design work spaces and systems with hands-on-methods and on digital twins. • **Methodological competencies:** Applying specific methods and tools of industrial engineering to test and assess different solution for the same planning purpose. • **Specialised and practical competencies, skills and abilities:** Students focus at work place and work system design on sustainable and social aspects, e. g. inclusion of handicapped people in the work environment. • **Social competencies:** The social competence is developed in small lab projects during the semester in which the students work together. • **Normative competencies:** Students recognize the importance of human-centred and sustainable forms of work systems.
Course-specific contributions to AoL competency goals (CG 1-6)	**CG 1 reinforced:** Students deepen their language proficiency in the field of industrial engineering. They are constantly able to practice their written and oral language skills in English. **CG 3 reinforced:** Students get to know, that industrial engineering also means to discuss sustainable and ethical issues Therefore, students also must reflect the integration of disabled people in the production workforce. **CG 4 reinforced:** Students build on their available domain knowledge and learn to systematically develop production and work systems, understand foundations of work place and work system design. They apply typical methods and tools of industrial engineering. They test and assess different design solutions with hands-on-methods and the digital twin. **CG5 reinforced:** Students learn to integrate workplace design in the product developement and realisation process in terms of Simultaneous Engineering, especially by analoge and digital prototyping of workplace processes. **CG 6 reinforced:** The students work in the laboratory with digital tools on concrete tasks of workplace and work system design and apply the basics learned in the lecture in the digital planning and application context.

Content/ indicative syllabus	• Cardboard Engineering. • Digital twin for work place and ergonomic design. • Digital tools for workplace ergonomics improvement.
Teaching and learning methods	Laboratory
Miscellaneous	
Indicative reading list	– Handbooks and supporting material for laboratory are supplied on laboratory workspace.

5.10. International Transport Logistics

Limited number of places available

Module Number	
Lecturers name; contact details see ESB-website	Yuanita Handayati
Teaching language	English
Credits (ECTS)	6
Contact hours per week	4 SWS

Learning outcomes of the course	The students are enabled to assess the relevance, advantages, and disadvantages of different transportation modes in international transport logistics and learn to design transportation networks purposefully.
	After successful completion of this course the students should have gained the following knowledge and developed the following competencies:
	• **Professional competencies:**
	  ○ Know and understand different transportation modes, traffic infrastructures and –systems that have relevance for the design of cross-company transportation networks. This concerns especially the foundations of forwarding and business models in international transport logistics
	  ○ Assess relevance of future aspects of reverse logistics
	  ○ Plan logistical- and transport networks, assess their economic consequences and organize forwarding processes
	• **Methodological competencies:** Apply acquired knowledge in a simulation game on transport logistics
	• **Social competencies:** Interact with fellow students in small teams to resolve simulated problems
	• **Personal competencies:** Experience and reflect own performance in a simulated problem environment

Module-specific contribution to AoL learning objectives	**CG 4.1. (Reinforced)** Students build on their know-how gained in previous semesters. After successfully attending the module, students know and understand different transportation modes, traffic infrastructures and –systems that have relevance for the design of cross-company transportation networks. They are able to assess the relevance of reverse logistics aspects and can plan logistical and transport networks.

Content/ Indicative syllabus	Road-, rail-, air- and sea freight transport • Requirements and KPIs for logistical service providers and actors in road, rail, air and sea freight transport • Transport carriers, traffic infrastructure and its systems; targets and target conflicts of transport logistics • Services and business models of forwarding companies, shipping companies and ocean carriers • Intermodal and multimodal transport • Production factors, performance and service provision of forwarders and shipping companies • Essential standards and guidelines for the international transport of goods, also compared to the national transport. • Reverse logistics: processes, carriers, players and systems • Entsorgungslogistik: Prozesse, Verkehrsträger, Akteure und Systeme Transport simulation game with the transport modes: road, air and sea
Teaching and learning methodology	Lectures and simulation game
Miscellaneous	None
Indicative reading list	Verkehrs- und Transportlogistik (VDI-Buch) by Uwe Clausen and Christiane Geiger, Springer Vieweg (7. Oktober 2013); ISBN-13: 978-3540342984 | Auflage: 2. Aufl. 2013
Contact hours per week	4 SWS
Examination/ Type of assessment	CA + Written Examination (2hrs.)

5.11. Distribution and Retail Logistics

Limited number of places available

Module Number	
Type of course	Compulsory
Lecturers name; contact details see ESB-website	Prof. Dr. Wolfgang Echelmeyer
Teaching language	English
Credits (ECTS)	6
Contact hours per week	4 SWS
Learning outcomes of the course	After successful completion of this course the students should have gained basic knowledge, concepts and methods in Distributions- und Retail Logistics
Course-specific contribution to AoL learning objectives	**CG 4.1.** (Reinforced) Students build on their know-how gained in previous semesters. After successfully attending the module, students know and understand concepts and methods distribution and retail logistics.

Content/ Indicative syllabus	1. Basics of Distribution logistics; 2. Technical Logistics for distribution processes; 3. Supply Chain in retail logistics; Use cases from the retail logistics
Teaching and learning methodology	Lecture, group work and scientific paper
Miscellaneous	None
Indicative reading list	Specht: Distributionsmanagement; Kohlhammer 2005
Examination/ Type of assessment	CA + Written Examination (2hrs.)

5.12. Maritime Logistics

Limited number of places available

Module Number	223121
Lecturers name; contact details see ESB-website	Prof. Dr. Wolfgang Echelmeyer
Teaching language	English
Contact hours per week	2 SWS
Learning outcomes	After successful completion of this course the students should have gained basic knowledge, concepts and methods in maritime Logistics
Contents/ Indicative syllabus	• Harbour logistics Autonomous material handling systems • Handling of cargo at the seaport and transport technology • Maritime Supply Chain • Use cases
Teaching and learning methology	Lecture, group work
Miscellaneous	None
Indicative reading list	– Jahn: Maritime Logistik; Springer 2015 – Dong-Wook Song: Maritime Logistics: A Guide to Contemporary Shipping and Port Management; Kogan Page2015

5.13. Operations Research

Limited number of places available

Module Number	223141
Type of Class	
Lecturers name; contact details see ESB-website	Prof. Dr. Volker Reichenberger
Teaching language	English

Contact hours per week	2 SWS
Learning outcomes	Students are able to build elementary mathematical models for optimization problems and to apply established solution methods to these problems. They can apply their knowledge for scientific research as well as for practical purposes in engineering applications. They are able to judge the qualitiy of mathematical models and of solutions provided by computer programs. They know about the possibilities of modelling as well as their shortcomings.
Contents/ Indicative syllabus	• Linear problems and linear programming • Special linear problems (transportations problems, ...) • Graph-based problems • Simulation methods
Teaching and learning methology	Lecture and computer lab excercises
Miscellaneous	None
Indicative reading list	– Hillier, Liebermann: Introduction to Operations Research. McGrawHill 2020