



TECHNIK
HOCHSCHULE MAINZ
UNIVERSITY OF
APPLIED SCIENCES

Module Descriptors for Units Taught in English

Level 3 Bachelor

Faculty of Technology

International Civil Engineering and

International Built Environment

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Module Name	Study Skills	Course			Compulsory	Optional	
Level	3						
Cycle	B	Civil Engineering					
Abbreviation	SKILLS	Bachelor					
Subject Thread	International Civil Engineering and Built Environment	Construction Management					
Semester	Semester 5	Structures					
Frequency	On demand	Planning and the Environment					
Duration	1 Semester	Master					
Language	English	Construction Management					
ECTS / Weighting	1 / 1	Structures					
Student Workload	20 h at University = 8 SWS Lectures						
	40 h Independent Study						
	60 h Total						
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE						
Other lecturers	Visiting Lecturers						
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.						
Pre-requisites	To have passed ALL Level 1 and 2 Modules.						
Recommended Requirements	-						
Progress Control	-						
Progress Tests		Yes	No	Description			
	Pre-exam Test		X				
	Mid-term Test		X				
Examinations	100% coursework						

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Write an Academic Paper. 2. Use the Harvard APA referencing style.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - History of Academia. 2 Lecture - Teaching and Learning. 3 Lecture - History of English. 4 Lecture - Effective Report writing. 5 Lecture - Literature Search and Critique.
Recommended Reading	<p>Davies, J.W. (2001), <i>Communication Skills</i>, New Jersey: Prentice-Hall.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>




Module Name	Applied Facilities Management	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	AFM	Bachelor				
Subject Thread	International Built Environment	Construction Management				
		Structures				
		Planning and the Environment				
Semester	Semester 5	Master				
Frequency	On demand	Construction Management				
		Structures				
Duration	1 Semester	International Civil Engineering				
Language	English	Bachelor				
		Master				
ECTS / Weighting	6 / 6	Facilities Management				
		Bachelor				
Student Workload	60 h at University = 4 SWS Lectures					
	120 h Independent Study					
	180 h Total					
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Other lecturers	Visiting Lecturers					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements						
Progress Control	Conceptual Design Presentation.					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework or 2.5 hr Examination					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Determine the Facilities of a Project to be managed. 2. Write an Operation Plan. 3. Cost, schedule and resource an Operation Plan.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - Applied Facilities Management Introduction. 2 Lecture - Contracts and the Stakeholders in FM 3 Lecture – Carbon Accounting. 4 Lecture – Zero Carbon. 5 Lecture – Building Services Space and Weight 6 Lecture - Bills of Quantities and Scope Management (WBS). 7 Lecture – Renewable Energy 8 Lecture – Mechanical and Electrical Building Services. 9 Lecture – Cooling, Heating and Ventilation Loads. 10 Lecture – Building Services Design (Elec) 11 Lecture – Building Services Design (Water) 12 Lecture - Internal and External Design Criteria 13 Lecture - Sustainability Certificates as a Value Driver. 14 Lecture – Energy and Carbon 15 Lecture - FM Costs. 16 Lecture – Repair and Maintenance. 17 Lecture – Repair and Maintenance Planning. 18 Lecture - Sustainability/Feasibility/Carbon Reporting.
Recommended Reading	<p>Hawkins, G. (2011). <i>Rules of Thumb Guidelines for building services (5th-edition)</i>. Bracknell: BSRIA.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>Littlefield, D. (2007). <i>Metric Handbook Planning and Design Data, 3rd Edition</i>. London: Routledge.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Applied Substructure Engineering	Course			Compulsory	Optional	
Level	3						
Cycle	B	Civil Engineering					
Abbreviation	SUB	Bachelor					
Subject Thread	International Civil Engineering	Construction Management					
Semester	Semester 5	Structures					
Frequency	On demand	Planning and the Environment					
Duration	1 Semester	Master					
Language	English	Construction Management					
ECTS / Weighting	6 / 6	Structures					
Student Workload	60 h at University = 4 SWS Lectures						
	120 h Independent Study						
	180 h Total						
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE						
Other lecturers	Visiting Lecturers						
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.						
Pre-requisites	To have passed ALL Level 1 and 2 Modules.						
Recommended Requirements							
Progress Control	Conceptual Design Presentation.						
Progress Tests		Yes	No	Description			
	Pre-exam Test		X				
	Mid-term Test		X				
Examinations	100% coursework or 2.5 hr Examination						

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Appraise and evaluate soil reports and design shallow or deep foundations and excavations supported by retaining walls. 2. Identify failure mechanisms of soil slopes and compute slope stability analysis for granular or cohesive slopes with regard to short and long term slope behaviour. 3. Apply Theoretical, Scaled Physical or Computational Hydraulic Models to analyse hydraulic engineering problems. 4. Differentiate between the removal processes that operate at different stages of water treatment.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - Introduction to Applied Substructure Engineering. 2 Lecture - Limit State Design Philosophy and Introduction to Eurocodes. 3 Lecture - In Situ Soil Classification and Testing. 4 Lecture - Hydrology. 5 Lecture - Earthworks (Excavation Support). 6 Lecture - Earthworks. 7 Lecture - Embedded Retaining Wall Design. 8 Lecture - Groundwater Control. 9 Lecture - Shallow Foundations. 10 Lecture – Infiltration and Hydrographs. 11 Seminar - Shallow Foundations and Road Pavements 12 Lecture - Deep (Piled) Foundations. 13 Lecture - Infiltration Trenches, Soakaways and Basins. 14 Seminar - Deep (Piled) Foundations. 15 Lecture - Conveyance Swales and Pipe Systems. 16 Laboratory - Geotechnics 17 Lecture - Ponds and Wetlands, Water Treatment Removal Mechanisms. 18 Lecture - Outlets and Sludge. 19 Lecture - Slope Stability. 20 Software - Slope Stability Limit State Geo. 21 Seminar – Substructure Reports
Recommended Reading	<p>Bond, A.J., Harrison, T., Narayanan R.S., Brooker O., Moss R.M., Webster, R., Harris, A.J. (2006). <i>How to Design Concrete Structures Using Eurocode 2</i>. London: The Concrete Centre.</p> <p>Ciria. (2007). <i>The SUDS Manual</i>. London: Ciria.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>Craig R.F. (1997), <i>Soil Mechanics</i>, London, Spon Press.</p> <p>Eurocode 7: (2007), <i>Geotechnical Design, Ground Investigation and Testing</i>, CEN.</p> <p>Smith, G.N. & Smith, I.G.N, (1998) <i>Elements of Soil Mechanics</i>, New Jersey, Blackwell Scientific.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>

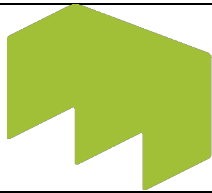
 TECHNIK HOCHSCHULE MAINZ UNIVERSITY OF APPLIED SCIENCES		Version: Sept 2020		
Module Name	Applied Infrastructure Engineering/Management	Course	Compulsory	Optional
Level	3			
Cycle	B	Civil Engineering		
Abbreviation	AIE	Bachelor		
Subject Thread	International Civil Engineering & Built Environment	Construction Management		
Semester	Semester 5	Structures		
Frequency	On demand	Planning and the Environment		
Duration	1 Semester	Master		
Language	English	Construction Management		
ECTS / Weighting	6 / 6	Structures		
Student Workload	60 h at University = 4 SWS Lectures			
	120 h Independent Study			
	180 h Total			
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE			
Other lecturers	Visiting Lecturers			
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.			
Pre-requisites	To have passed ALL Level 1 and 2 Modules.			
Recommended Requirements				
Progress Control	Conceptual Design Presentation.			
Progress Tests		Yes	No	Description
	Pre-exam Test		X	
	Mid-term Test		X	
Examinations	100% coursework or 2.5 hr Examination			

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Design: the horizontal and vertical alignment, the associated pavement, drainage and lighting for a Project and develop an appreciation of the maintenance requirements. 2. Design Sustainable Urban Drainage Source Control for a Project. 3. Assess the Environmental Impact of a Project.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - Introduction to Applied Infrastructure Engineering 2 Lecture – Architecture and Urbanisation. 3 Lecture - Road Networks 4 Lecture - Road Safety 5 Lecture - SUDs Selection 6 Lecture - SUDs Design Criteria 7 Lecture - SUDs Source Control 8 Lecture - SUDs Inlets and Pre Treatment 9 Lecture - Road Traffic Analysis. 10 Lecture - Road Traffic Design. 11 Lecture - Road Alignment (Vertical) 12 Lecture - Road Alignment (Horizontal) 13 Exkursion 14 Lecture - Road and SUDs Construction and Maintenance 15 Lecture - Natural Hazard Management 16 Lecture - Urban Risk Management 17 Lecture - Sustainable Transport Systems 18 Lecture - Sustainable Transport Infrastructure 19 Lecture - Environmental Impact Assessment Framework 20 Lecture - Environmental Impact Assessment Methods 21 Seminar – Infrastructure Reports
Recommended Reading	<p>Ciria. (2007). <i>The SUDS Manual</i>. London: Ciria</p> <p>Danish Road Directorate. (2002). <i>Beautiful Roads - A Handbook of Road Architecture</i>. Copenhagen: Danish Road Directorate.</p> <p>FGSV. (2012). <i>Directives for the Design of Urban Roads RAS06</i>. Cologne: FGSV Verlag GmbH.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>Littlefield, D. (2007). <i>Metric Handbook Planning and Design Data, 3rd Edition</i>. London: Routledge.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>



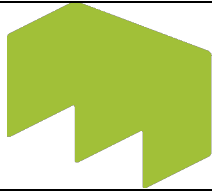
Module Name	Applied Superstructure Engineering	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	SUPER	Bachelor				
Subject Thread	International Civil Engineering	Construction Management				
		Structures				
		Planning and the Environment				
Semester	Semester 5	Master				
Frequency	On demand	Construction Management				
		Structures				
Duration	1 Semester	International Civil Engineering				
Language	English	Bachelor				
		Master				
ECTS / Weighting	6 / 6	Civil Engineering with Business Studies				
		Bachelor				
Student Workload	60 h at University = 4 SWS Lectures					
	120 h Independent Study					
	180 h Total					
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Other lecturers	Visiting Lecturers					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements						
Progress Control	Conceptual Design Presentation.					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework or 2.5 hr Examination					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Undertake the quantitative design and detailing of reinforced concrete frames (Winter Semester). 2. Undertake the quantitative design and detailing of steel framed buildings with composite floors (Summer Semester).
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - Applied Superstructure Engineering Introduction. 2 Lecture - Limit State Design Philosophy and Introduction to Eurocodes. 3 Lecture – Structural Design Concepts 4 Seminar - Structural Concept Brainstorm 5 Lecture - Preliminary Structural Design Initial Sizing. 6 Seminar – BIM Modelling 7 Lecture - Frame Analysis. 8 Seminar - Rstab Modelling 9 Lecture - Final Design of Slabs ULS. 10 Seminar - Spreadsheets/Load Tables Slabs 11 Lecture - CAD Output. 12 Lecture - Reinforced Concrete Construction. 13 Lecture - Final Design of Frame – Beams. 14 Seminar - Spreadsheets/Buckling – Beams. 15 Seminar - Structural Detailing. 16 Lecture - Structural Frame Construction. 17 Lecture - Composite Frame Construction. 18 Lecture - Final Design of RC Frame - Columns and Stability 19 Seminar - Columns Spreadsheet/Stability 20 Lecture - Connections. 21 Seminar - Structural Detailing. 22 Seminar - Superstructure Report 23 Lecture - Design of Reinforced Concrete Water Retaining Tanks.
Recommended Reading	<p>Bond A J, T Harrison, R S Narayanan, O Brooker, R M Moss, R Webster, A J Harris, (2006). <i>How to Design Concrete Structures Using Eurocode 2</i>, London: The Concrete Centre.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>Littlefield, D. (2007). <i>Metric Handbook Planning and Design Data, 3rd Edition</i>. London: Routledge.</p> <p>Owens, G.W., Knowles, P.R., (2016) <i>Steel Designers Manual</i>. UK: Wiley-Blackwell.</p>
Notes	Industry Standard software will be used for analysis and detailing.



Module Name	Bachelor Thesis (Bachelorarbeit)	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	BT	Bachelor				
Subject Thread	International Civil Engineering and Built Environment	Construction Management				
Semester	Semester 6	Structures				
Frequency	On demand	Planning and the Environment				
Duration	1 Semester	Master				
Language	English	Construction Management				
ECTS / Weighting	14 / 14	Structures				
Student Workload	0 h at University					
	360 h Independent Study					
	360 h Total					
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Other lecturers	Visiting Lecturers					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements	-					
Progress Control	-					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework (Written Report 70%, Colloquium 30%).					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Prepare and execute a scientific Investigation, 2. Orally present the substantial completion of a scientific investigation. 3. Produce a report on the findings of a scientific investigation.
Syllabus Content	<p>This unit provides an opportunity for the students to undertake individual investigative work with an ultimate aim of solving a research problem. Typically the project will involve identification and analysis of the problem and the related parameters and issues. A critical analysis of relevant literature and past experience would lead to proposals for solving the problem. The investigative efforts related to all aspects of the project will then be presented in a final report. The investigative component of the project could be related to analytical parametric study and /or laboratory or field based activities.</p>
Recommended Reading	<p>Fellows, R. R. and Liu, A. (2003), <i>Research Methods for Construction</i>, New Jersey: Blackwell.</p> <p>Davies, J.W. (2001), <i>Communication Skills</i>, New Jersey: Prentice-Hall.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Construction Project Management		Course		Compulsory	Optional
Level	3					
Cycle	B		Civil Engineering			
Abbreviation	CPM		Bachelor			
Subject Thread	International Civil Engineering and Built Environment		Construction Management			
Semester	Semester 5		Structures			
Frequency	On demand		Planning and the Environment			
Duration	1 Semester		Master			
Language	English		Construction Management			
ECTS / Weighting	6/ 6		Structures			
Student Workload	60 h at University = 4 SWS Lectures		International Civil Engineering			
	120 h Independent Study		Bachelor			
	180 h Total		Facilities Management			
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE		Bachelor			
Other lecturers	Visiting Lecturers		Master			
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.		Civil Engineering with Business Studies			
Pre-requisites	To have passed ALL Level 1 and 2 Modules.		Bachelor			
Recommended Requirements	-					
Progress Control	-					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework or 2.5hr Examination					

<p>Learning Outcomes</p>	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Describe the construction techniques employed by specialist sub-contractors such as demolition, earthworks, piling, etc. 2. Distinguish between types of structures, their method of construction and the appropriateness of different materials. 3. Assess the Time, Cost, Quality, Health & Safety and Environmental consequences of construction site activities.
<p>Syllabus Content</p>	<ol style="list-style-type: none"> 1 Lecture - Construction Project Management Introduction. 2 Lecture – Demolition. 3 Lecture - Temporary Works Construction. 4 Lecture - Scope Plan, Budget Costing and Life cycle Durations. 5 Lecture - Earthworks (Excavation Support). 6 Lecture - Bills of Quantities and Scope Management (WBS). 7 Lecture - Groundwater Control. 8 Lecture - Shallow Foundations and Road Pavements. 9 Lecture - Deep (Piled) Foundations. 10 Lecture - Take of Quantities, Gantt Resources Charts and PMBok HRM 11 Lecture - Reinforced Concrete Construction. 12 Lecture - Project Decision Analysis, Method Statements and Risk Identification 13 Lecture - Structural Frame Construction. 14 Lecture - Composite Frame Construction. 15 Lecture - Road Pavement + Sustainable Urban Drainage Construction 16 Lecture - Time Management CPA and Project Management Software 17 Lecture - Cladding and the Building Envelope 18 Lecture - Risk Management. 19 Lecture - Cost Management. 20 Lecture - Quality Management and Sustainable Material Specification. 21 Lecture - Repair and Maintenance. 22 Seminar- Construction Plan Reports
<p>Recommended Reading</p>	<p>Hawkins, G. (2011). <i>Rules of Thumb Guidelines for building services (5th-edition)</i>. Bracknell: BSRIA.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>PMBok, (2008). <i>A Guide to the Project Management Body of Knowledge: PMBoK Guide. 4rd Edition</i>. Pennsylvania: Project Management Institute Inc.</p>
<p>Notes</p>	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Integrated Design Project (Incl Natural Hazards Management)	Course		
Level	3		Compulsory	Optional
Cycle	B	Civil Engineering		
Abbreviation	IDP	Bachelor		
Subject Thread	International Civil Engineering and Built Environment	Construction Management		
Semester	Semester 6	Structures		
Frequency	On demand	Planning and the Environment		
Duration	1 Semester	Master		
Language	English	Construction Management		
ECTS / Weighting	16 / 16	Structures		
Student Workload	0 h at University	International Civil Engineering		
	480 h Independent Study	Bachelor		
	480 h Total	Facilities Management		
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE	Bachelor		
Other lecturers	Visiting Lecturers	Master		
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.	Civil Engineering with Business Studies		
Pre-requisites	To have passed ALL Level 1 and 2 Modules.	Bachelor		
Recommended Requirements	-			
Progress Control	-			
Progress Tests		Yes	No	Description
	Pre-exam Test		X	
	Mid-term Test		X	

Examinations	100% coursework.
Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Apply the design process in a civil engineering or building project. 2. Write a Natural Hazard Management Plan. 3. Write a Sustainability Plan.
Syllabus Content	<p>The unit is based on an undergraduate competition brief for a reinforced concrete structure, a steel bridge structure or a steel building structure, with associated infrastructure, substructure, construction, facilities and project management requirements.</p> <p>If the Integrated Design Project is taken in the Winter Semester the Construction Material will be Reinforced Concrete if in the Summer Semester Structural Steel. The brief for both Semesters remains the same therefore a sustainability analysis can be performed comparing the two designs.</p>
Recommended Reading	<p>Bond, A.J., Harrison, T., Narayanan R.S., Brooker O., Moss R.M., Webster, R., Harris, A.J. (2006). <i>How to Design Concrete Structures Using Eurocode 2</i>. London: The Concrete Centre.</p> <p>ICE, (201x). <i>CESSM3 Price Database, Edited by Franklin and Andrews</i>, Institution of Civil Engineers, London: Thomas Telford.</p> <p>Ciria. (2007). <i>The SUDS Manual</i>. London: Ciria</p> <p>Hawkins, G. (2011). <i>Rules of Thumb Guidelines for building services (5th-edition)</i>. Bracknell: BSRIA.</p> <p>Owens, G.W., Knowles, P.R., (2016) <i>Steel Designers Manual</i>. UK: Wiley-Blackwell.</p> <p>Littlefield, D. (2007). <i>Metric Handbook Planning and Design Data, 3rd Edition</i>. London: Routledge.</p>
Notes	Industry Standard software will be used for analysis and detailing.



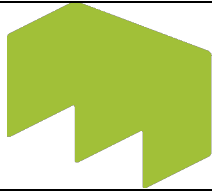
Module Name	International Project Management	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	IPM	Bachelor				
Subject Thread	International Civil Engineering and Built Environment	Construction Management				
Semester	Semester 5	Structures				
Frequency	On demand	Planning and the Environment				
Duration	1 Semester	Master				
Language	English	Construction Management				
ECTS / Weighting	6 / 6	Structures				
Student Workload	60 h at University = 4 SWS Lectures					
	120 h Independent Study					
	180 h Total					
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Other lecturers	Visiting Lecturers					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements	-					
Progress Control	-					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework or 2.5 hr Examination					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Assess the contractual, economic and social impacts of International Projects during their life cycle. 2. Investigate reasons for failure of some International Projects and suggest alternative modern methods of procurement. 3. Write a Business Plan.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - International Project Management Introduction. 2 Lecture - History of Management. 3 Lecture - Modern Management. 4 Lecture – Culture. 5 Lecture - Oral Presentations. 6 Lecture – Society. 7 Lecture – Basis of the Law and Land Law 8 Lecture - Traditional Contracts. 9 Lecture - Classification of Contracts. 10 Lecture – FIDIC. 11 Lecture - Latham Report. 12 Lecture - Egan Report. 13 Lecture - Modern Contracts and Procurement Management. 14 Lecture - PMBoK Procurement Management. 15 Lecture - Handover. 16 Lecture - World Politics 21st Century. 17 Lecture - Macro Economics. 18 Lecture - Micro Economics. 19 Lecture - Accountancy 20 Lecture – Depreciation and Property Valuation 21 Lecture – Whole Life Cycle Costs 22 Lecture - Social Benefit Analysis. 23 Seminar – Business Plan Reports
Recommended Reading	<p>Audit Scotland. (2004). <i>Management of the Holyrood Building Project</i>. Edinburgh: Audit Scotland.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Project Management		Course		Compulsory	Optional
Level	3					
Cycle	B		Civil Engineering			
Abbreviation	PM		Bachelor			
Subject Thread	International Civil Engineering and Built Environment		Construction Management			
Semester	Semester 5		Structures			
Frequency	On demand		Planning and the Environment			
Duration	1 Semester		Master			
Language	English		Construction Management			
ECTS / Weighting	6 / 6		Structures			
Student Workload	60 h at University = 4 SWS Lectures		International Civil Engineering			
	120 h Independent Study		Bachelor			
	180 h Total		Facilities Management			
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE		Bachelor			
Other lecturers	Visiting Lecturers		Master			
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.		Civil Engineering with Business Studies			
Pre-requisites	To have passed ALL Level 1 and 2 Modules.		Bachelor			
Recommended Requirements						
Progress Control	Conceptual Design Presentation.					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework or 2.5 hr Examination					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Apply the 5 Project Management Process Groups. Initiating, Planning, Executing, Controlling and Closing to a Project. 2. Apply the 9 Project Management Knowledge Areas. Integration, Scope, Time, Cost, Quality, Human Resource, Communications, Risk, and Procurement to a Project. 3. Write a Project Plan.
Syllabus Content	<ol style="list-style-type: none"> 1 Lecture - Project Management Introduction. 2 Lecture - Demolition 3 Software - PMBoK Communication Management 4 Lecture - Scope Plan, Budget Costing and Life cycle Durations. 5 Supervisor Meeting 6 Lecture - Bills of Quantities and Scope Management (WBS). 7 Supervisor Meeting 8 Lecture - Take of Quantities, Gantt and Resources Charts 9 Supervisor Meeting 10 Supervisor Meeting 11 Lecture - Method Statements and Risk Identification. 12 Supervisor Meeting 13 Lecture - Time Management CPA. 14 Supervisor Meeting 15 Lecture - Risk Management. 16 Supervisor Meeting 17 Lecture - Cost Management. 18 Lecture - Quality Management and Material Specification. 19 Supervisor Meeting 20 Lecture - PMBoK Procurement Management. 21 Software - Earned value Analysis. 22 Supervisor Meeting 23 Lecture – Sustainability/Feasibility Reporting.
Recommended Reading	<p>PMBoK, (2008). <i>A Guide to the Project Management Body of Knowledge: PMBoK Guide. 4rd Edition</i>. Pennsylvania: Project Management Institute Inc.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Research Methods	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	RM	Bachelor				
Subject Thread	International Civil Engineering and Built Environment	Construction Management				
Semester	Semester 5	Structures				
Frequency	On demand	Planning and the Environment				
Duration	1 Semester	Master				
Language	English	Construction Management				
ECTS / Weighting	6 / 6	Structures				
Student Workload	International Civil Engineering					
Module Co-ordinator	Bachelor					
Other lecturers	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements	-					
Progress Control	-					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework.					

<p>Learning Outcomes</p>	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Write an Academic Paper. 2. Use the Harvard APA referencing style. 3. Poster Present a Research Proposal.
<p>Syllabus Content</p>	<ol style="list-style-type: none"> 1 Lecture - History of Academia. 2 Lecture - Teaching and Learning. 3 Lecture - History of English. 4 Lecture - Effective Report writing. 5 Lecture - Research Methods Introduction and Principles of Research 6 Lecture - Project Supervision and Meetings. 7 Lecture - Literature Search and Critique. 8 Supervisor Meeting 9 Lecture - Research Methodology and Ethics. 10 Supervisor Meeting 11 Lecture - Research Design. 12 Supervisor Meeting 13 Lecture - Data Analysis. 14 Lecture - Research Proposals. 15 Supervisor Meeting 16 Lecture - Poster Presentations. 17 Lecture - Laboratory Resources. 18 Supervisor Meeting 19 Supervisor Meeting 20 Supervisor Meeting 21 Lecture - Discussion of Results. 22 Lecture - Oral Research Presentations. 23 Lecture - Writing the Final Thesis. 24 Supervisor Meeting
<p>Recommended Reading</p>	<p>Fellows, R. R. and Liu, A. (2003), <i>Research Methods for Construction</i>, New Jersey: Blackwell.</p> <p>Davies, J.W. (2001), <i>Communication Skills</i>, New Jersey: Prentice-Hall.</p>
<p>Notes</p>	<p>Industry Standard software will be used for analysis and detailing.</p>



Module Name	Professional Skills	Course			Compulsory	Optional
Level	3					
Cycle	B	Civil Engineering				
Abbreviation	PROSKILLS	Bachelor				
Subject Thread	International Civil Engineering and Built Environment	Construction Management				
		Structures				
		Planning and the Environment				
Semester	Semester 5	Master				
Frequency	On demand	Construction Management				
		Structures				
Duration	1 Semester	International Civil Engineering				
Language	English	Bachelor				
		Master				
ECTS / Weighting	1 / 1	Civil Engineering with Business Studies				
		Bachelor				
Student Workload	20 h at University = 8 SWS Lectures					
	40 h Independent Study					
	60 h Total					
Module Co-ordinator	Prof. Dr. A. K. Petersen BSc, PhD, CEng, MICE					
Other lecturers	Visiting Lecturers					
Learning and Teaching Strategy	Formal lectures, tutorials, student led seminars and on-line learning resources will provide theoretical and practical underpinning for the Learning Outcomes.					
Pre-requisites	To have passed ALL Level 1 and 2 Modules.					
Recommended Requirements	-					
Progress Control	-					
Progress Tests		Yes	No	Description		
	Pre-exam Test		X			
	Mid-term Test		X			
Examinations	100% coursework					

Learning Outcomes	<p>On successful completion of this unit, students should be able, at Level 3 threshold level, to:</p> <ol style="list-style-type: none"> 1. Apply Professional ethics to decisions.
Syllabus Content	<p>History of the Construction Professions. International similarities and differences in Professional Practice. The breadth versus depth of Professions. Interdisciplinary and intercultural Professional Projects. Team Working, Collaborative Working and Leadership. Role of Industry Standard Software in Professional Practice.</p>
Recommended Reading	<p>Clark, J., Pratt, N. and Muirhead, O. (2018) <i>Bricks and Water</i>, London: Policy Connect. Edexcel (2011) <i>Structure of the Construction Industry</i>. London: Pearson.</p>
Notes	<p>Industry Standard software will be used for analysis and detailing.</p>