

## **APPENDIX I: SCHEDULE FOR COURSE MODULES**

Postgraduate course modules offered by the Department of Civil Engineering, University of Stellenbosch

- The table below indicates when modules are scheduled to be presented over the 3 year period from January 2018 through December 2020. **Provisional dates** are indicated where available. These are updated regularly in the electronic version of this Brochure on the Civil Engineering website (p.1), under Programmes/Postgraduate and must be confirmed with the Secretary of the hosting division.
- In the table below course modules are listed alphabetically, firstly according to field and secondly to course module title. Notes regarding the content of course modules are provided in Appendix II in the same order. (Please note that a list of 'Forthcoming M Eng (R) Block Courses' arranged according to date, is also available on the website.)
- **Compulsory and recommended combinations for the respective fields of specialisation are indicated in Section 6 of the Brochure.**
- Unless indicated otherwise (refer to numbered footnotes) all the courses below are presented on the Campus of Stellenbosch University at the Faculty of Engineering.
- Enquiries and registration regarding the courses below can generally be made by e-mail to the reference provided with each field or by default to the Secretary of every division indicated in the Table below.
- Full time students must complete four semesters of Mentorships or Assistantships during the period of Postgraduate Studies.
- **Candidates may be required to pay for course notes, lunches, handbooks or other study material with regard to block courses or studies in general. These fees are paid directly to the Secretary of the relevant division and do not form part of your Tuition Fees.**

This schedule was last updated on 8/11/2017

All Course Enquiries: Ms Janine Myburgh and Ms Tsholo Seraolo  
E-mail: [civilcourses@sun.ac.za](mailto:civilcourses@sun.ac.za)

Course Module Title and Number	Previous Code	SAQA Credits	Format	Availability per Semester					
				2018		2019		2020	
<b>Civil Engineering Informatics:</b>				<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>
Software techniques for graphs and networks 811	MT09	15	Semester	As required / On demand					
System design of an open engineering platform	MT15	15	Semester	As required / On demand					
Development of applications based on an open engineering platform	MT16	15	Semester	As required / on demand					
<b>Construction Engineering and Management:</b>				<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>
<sup>1</sup> Construction Management Programme 811		30	Block	x					
Construction Management		15	Block		22-24 Aug 25-26 Oct				
Construction contract law		15	Block						
Construction Risk Management		15	Block	21-23 Feb 10-11 May					
Infrastructure Asset Management		15	Block						
Construction Contract Law		15	Block	19-20 Feb 7-9 May					
Financial & Economic Management		15	Block						
Leadership and the Environment (Engineering Management (51373-842))		15	Block						
Project Management (Engineering Management (51373-812))		15	Block						

<sup>1</sup> The CMP is an extremely intensive high level management course of 4 weeks, offered annually. A substantial course fee applies also to registered postgraduate students. Admittance for Degree purposes subject to special selection criteria.

Course Module Title and Number	Previous Code	SAQA Credits	Format	Availability per Semester					
				2018		2019		2020	
<b>Geotechnical Engineering :</b>				1	2	1	2	1	2
Applied Geo mechanics 811	G03	15	Block		9-13 July				
Advanced Geotechnics 811	G04	15	Block	14-18 May					
Foundation Design 811	G01	15	Block	5-9 March					
Soil Behaviour 841	G02	15	Block	19-23 March					
<b>Pavement Engineering :</b>				1	2	1	2	1	2
Advanced Bitumen Technology 811	P08	15	Block						
Flexible Pavement Design 841	P02	15	Block						
Pavement Construction 841	P03	15	Block	3-6 April					
Pavement Evaluation & Rehabilitation 811	P06	15	Block	29 Jan–2 Feb					
Pavement Management Systems 841	P05	15	Block						
Pavement Materials I 811 (Granular & Cemented)	P01	15	Block						
Pavement Materials II 811 (Asphalt)	P04	15	Block						
Pavement Materials III 811 (BSM-foam/emulsion)	P09	15	Block						
Rigid Pavement Design 811	P07	15	Block		17-21 Sept				
<b>Structural Engineering :</b>				1	2	1	2	1	2
Probability and Risk Analysis in Civil Engineering 811	MT02	15	Block	To be confirmed				As required / On demand	
Continuum mechanics and finite element methods 841	MT04	15	Semester	x					
Structural Dynamics 811	MT11	15	Semester		x				
Advanced Structural Steel Design 811	MT12	15	Semester	x					
Advanced Structural Concrete Design 811	MT13	15	Semester		x				
Seismic Design of building structures	MT14	15	Block						
Advanced Mechanics of Materials and Modelling	MT05	15	Semester		As required / On demand				
Structural Optimization		8	Block						
Cement-based Materials		15	Semester						

Course Module Title and Number	Previous Code	SAQA Credits	Format	Availability per Semester					
				2018		2019		2020	
				1	2	1	2	1	2
<b>Transportation Engineering :</b>									
Geometric Road Design 811	T01	15	Block		5-9 Nov				X
Public Transport 841	T02	15	Block			X			
Traffic Engineering 841	T03	15	Block			X			
Traffic Flow Theory 811	T05	15	Block	26 May- 1 Jun				X	
Transport Economics 811	T07	15	Block			X			
Transportation Planning 811	T06	15	Block	12-16 March				X	
Transportation Safety 811	T04	15	Block		13-17 Aug				X
Intelligent Transport Systems 811	T08	15	Block				X		
Human Factors in Traffic Collisions		15	Block				X		
<b>Water Engineering :</b>									
Hydraulic Structures	W01	15	Block*						
Storm Water Hydraulics		15	Block			X			
Water and Drainage systems	W02	15	Block						
Flood Hydrology	W05	15	Block*		4-8 June				X
Water Resources Analysis and Management	W06	15	Block*				X		
Pipeline Hydraulics & Pump station design	W07	15	Block*						
Sewer Systems		15	Block*						
Water Networks and Services Planning	-	15	Block*						
Water and Wastewater Treatment	W08	15	Block			X			
Special Hydraulics	-	15	Block*						
Special Hydrology	-	15	Block*						
Introduction to Port Engineering (short courses)	W04	15	Block						
Introduction to Coastal Engineering (short courses)	W03	15	Block		27-31 Aug				
Numerical simulation of fluids		15	Semester						

YEAR					2018				2019				2020			
TNPA PORT & COASTAL ENGINEERING POSTGRADUATE PROGRAMME					Semester		Semester		Semester		Semester		Semester		Semester	
Module		Code	SAQA Credit	Type	1	2	3	4	1	2	3	4	1	2	3	4
Introduction: Coastal Eng. (Short Course)	B+C	W03-0	1	Block			W03-0								W03-0	
Coastal Processes & Field Data Collection	C	W03-1	1	Quarter	W03-1								W03-1			
Numerical and Physical Modelling	C	W03-2	1	Quarter		W03-2								W03-2		
Coastal & Port Structures	C	W03-3	1	Quarter			W03-3								W03-3	
Coasts & Ports and the Environment	C	W03-4	1	Quarter						W03-4						
Introduction: Port Eng. (Short Course)	B+C	W04-0	1	Block							W04-0					
Port Planning and Design	C	W04-1	1	Quarter		W04-1								W04-1		
Port Management	E	W04-2	1	Quarter						W04-2						
Port Infrastructure and Equipment	E	W04-3	1	Quarter	W04-3								W04-3			
Dredging and Port Maintenance	E	W04-4	1	Quarter					W04-4							
Numerical Simulation of Fluids	E	App.M.	1	Semester	App.M.				App.M.				App.M.			

LEGEND:

C = Compulsory Module, E = Elective Module, B = Block

Block course: 1 week full time attendance within the Semester (Port & Coastal students do not attain credits with Block Courses but must attend them)

Module: 2.5 weeks with two 4-hour lectures/week normally on Tuesday and Thursday mornings followed by exam in the next week.

Modules from other Departments or Faculties

- Full timers and part timers have same module load (no compulsory extra courses for full timers)

- M Eng. (Research) need to pass 5 modules minimum (5 of which are compulsory) + attendance of both Block Courses as prerequisite for submitting thesis.

- M Eng. (Structured) need to pass all 8 modules (4 coastal & 4 port modules) + attendance of both Block courses as prerequisite for submitting a project report.