



MASTER'S DEGREE IN CIVIL ENGINEERING

DEGREE PROGRAMME 2015/2016

Course contents are available at this [link](#)

Common courses

1st year – 1st semester

Teaching course	SSD*	TAF*	Credits	h
Mathematical Models and Methods in Engineering	MAT/09	C	6	60
Spatial Planning	ICAR/20	C	6	60
Integrated Course: Construction Theory 2 and Testing, Monitoring and Inspection of Structures - Module: Construction Theory 2	ICAR/08	B	6	60
<i>Alternative courses (*)</i>				
Integrated Course: Construction of Road, Railways and Airport 2 and Transportation Planning - Module: Construction of Road, Railways and Airport 2	ICAR/04	B	6	60
Integrated Course: Road, Airfield and Railway Pavements and Transportation Planning - Module: Road, Airfield and Railway Pavements	ICAR/04	B	6	60
Total Credits 1 st year – 1 st semester			24	

1st year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Construction Theory 2 and Testing, Monitoring and Inspection of Structures - Module: Testing, Monitoring and Inspection of Structures	ICAR/09	B	6	60
<i>Alternative courses (*)</i>				
Integrated Course: Construction of Road, Railways and Airport 2 and Transportation Planning - Module: Transportation Planning	ICAR/05	B	6	60
Integrated Course: Road, Airfield and Railway Pavements and Transportation Planning - Module: Transportation Planning	ICAR/05	B	6	60
Total Credits 1 st year – 2 nd semester			12	

(*) Integrated Course: Road, Airfield and Railway Pavements and Transportation Planning is available only for students that passed the exam of Construction of Road, Railways and Airport 2 during the bachelors' degree (ex D.M. 509/99)



2nd year – 1st semester

Teaching course	SSD	TAF	Credits	h
Foundations and Earth Retaining Structures	ICAR/07	C	6	60
Integrated Course: Computational Structural Analysis and Design and Theory and Technology of Structures 2 - Module: Computational Structural Analysis and Design	ICAR/09	B	6	60
Watershed and Stream Restoration Engineering	ICAR/02	B	6	60
Total Credits 2 nd year – 1 st semester			18	

2nd year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Computational Structural Analysis and Design and Theory and Technology of Structures 2 - Module: Theory and Technology of Structures 2	ICAR/09	B	6	60
Total Credits 2 nd year – 2 nd semester			6	

Hydraulics Curriculum courses

1st year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Hydraulics 2 and Maritime Hydraulics - Module: Hydraulics 2	ICAR/01	B	6	60
- Module: Maritime Hydraulics	ICAR/01	B	6	60

2nd year – 1st semester

Teaching course	SSD	TAF	Credits	h
Hydrological Models	ICAR/02	B	6	60

2nd year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Water Systems Planning and Management	ICAR/02	B	6	60
Littoral Dynamics and Coastal Structures	ICAR/02	B	6	60

Structures Curriculum courses

1st year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Theory and Design of Steel Construction	ICAR/09	B	6	60



2nd year – 1st semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Dynamics of Structures and Strengthening and Safety of Structures - Module: Dynamics of Structures	ICAR/08	B	6	60
Theory and Design of Bridges	ICAR/09	B	6	60

2nd year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Dynamics of Structures and Strengthening and Safety of Structures - Module: Strengthening and Safety of Structures	ICAR/08	B	6	60
<i>Alternative courses:</i> Advanced Solid and Structural Mechanics (1 st year -2 nd semester)	ICAR/08	B	6	60
Sismic Dynamics of Structures	ICAR/08	B	6	60

Transportations Curriculum

1st year – 2nd semester

Teaching course	SSD	TAF	Credits	h
Integrated Course: Transport System Design and Theory and Technology Traffic Flow - Module: Transport System Design	ICAR/05	B	6	60
- Module: Theory and Technology Traffic Flow	ICAR/05	B	6	60

2nd year – 1st semester

Teaching course	SSD	TAF	Credits	h
Road, Airfield and Railway Pavements	ICAR/04	B	6	60

2nd year – 2nd semester

Teaching course	SSD	TAF	Credits	h
<i>Choose between:</i> Air Transport	ICAR/05	B	6	60
Logistic and Freight Transportation	ICAR/05	B	6	60
<i>Choose between:</i> Urban and Metropolitan Transport	ICAR/05	B	6	60
Rail Transport	ICAR/05	B	6	60



Additional credits to be acquired	TAF	Credits
Other activities	F	4
Elective activities ¹	D	12
Final Exam	E	14

Total credits 120

Other optional activities:

Laboratories	SSD	Credits	Semester
Traffic Simulation Model Laboratory	ICAR/05	2	1
Structures Finite Element Modeling	ICAR/09	2	1
Design of Coastal Structures and Shore Protection	ICAR/02	2	2
Laboratory of Integrated Design of Roads, Railways and Airports	ICAR/04	2	2
Watershed and Stream Restoration Engineering Laboratory	ICAR/02	2	2
Structural Reconditioning: Analysis, Diagnosis, Retrofitting	ICAR/09	2	2

***Abbreviations**

SSD	Scientific Disciplinary Sector
TAF	Type of Educational Activity

- (1) The elective activities must be consistent with the personal educational plan and they need approval by the Degree Programme Board.