Co-funded by the Erasmus+ Programme of the European Union



### STUDY VISIT AT AALBORG UNIVERSITY April 25<sup>th</sup> to 30<sup>th</sup>, 2017

### DEVELOPED DRM&FSE MPS CURRICULA (task 1.3) &

### EQUIPPING EDUCATION ICT BASED LABORATORIES (task 1.4)

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**EPOKA UNIVERSITY** 



### DEVELOPED DRM&FSE MPS CURRICULA

### Newly developed curricula

# **Professional Master** Program in DRM&FSE 60 ects



### DEVELOPED DRM&FSE MPS CURRICULA

- Two semesters (30 ects for each semester)
- 4-5 courses for each semester
- Lecturers defined for each course
- Compulsory & Elective



### MPS CURRICULA STRUCTURE

- Course Description
- Objectives & Aim
- Course Outline (each week topics, textbook, laboratory work, computer usage)
- Learning Outcomes And Competencies
- Course's Contribution to Program Outcomes
- Course Evaluation Method
- ECTS Workload



### DRM&FSE PM COURSES

- Flood Risk Assessment
- Hydraulic Structure
- Techniques and Tools in Risk Management
- Project Planning, Management And Coordination
- Landscape Perspectives in DRM & FS
- Earthquake Disaster Mitigation
- Structural Fire Safety
- Durability of Concrete
- ✤ Fire Evacuation Design
- Wireless Sensor Network
- Research Methods

DRM

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### DRM&FSE PM COURSES

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Name of the course	Lecturer		
Flood Risk Assessment	Miriam Ndini		
Hydraulic Structure	Miriam Ndini		
Techniques and Tools in Risk Management	Julinda Keci		
Project Planning, Management And Coordination	Julinda Keci		
Landscape Perspectives in DRM & FS	Artan Hysa		
Earthquake Disaster Mitigation	Huseyin Bilgin		
Structural Fire Safety	Erion Luga		
Durability of Concrete	Erion Luga		
Fire Evacuation Design	Sokol Dervishi		
Wireless Sensor Network	Elton Domnori		
Research Methods	Albana Halili		

DRM&FSE	PM COURSES
First semester	Second semester
Flood Risk Assessment	Hydraulic Structure
Techniques and Tools in Risk Management	Fire Evacuation Design
Structural Fire Safety	Wireless Sensor Network
Durability of Concrete	Earthquake Disaster Mitigation
Structural Fire Safety	Wireless Sensor Network
Research Methods	

### MPS CURRICULA STRUCTURE- Sample

	COURSE INFORMATON								
Course Title: Wireless Sensor Network									
Code	Course Type	Regular Semester	Lecture	Recit.	Lab.	Credits	ECTS		
CEN 6xx			3			3	7.5		
Lecturer and	d Office Ho	urs							
Teaching an	d Assistants	s Office							
Hours									
Language			English						
Compulsory	/Elective		Elective						
Classroom a	nd Meeting	Time							

Description	This course will cover the latest application in Wireless Sensor Networks. The course will cover all aspects of these unique and important systems, from the hardware and radio architecture through protocols and software to applications. Topics will include sensor network architectures, hardware platforms, physical layer techniques, medium access control, routing, topology control, quality of service (QoS) management, localization, time synchronization, security, storage, and other advanced topics. Each student must complete a semester-long course project related to wireless sensor networks
Objective	The goal of the class is to learn the basic principles behind a Wireless Sensor Network. Following the ISO Open Systems Interconnection (OSI) model, the class presents the particular challenges of designing network protocols, services and applications for WSNs composed of large numbers of constrained devices. Moreover, the class provides an introduction to Network Simulator 3 (ns-3), a well-know and widely adopted network simulator, focusing in particular on the simulation of wireless networks.
	COURSE OUTLINE
Week	Topics
1	Introduction to Wireless Sensor Networks – Course Informations, Introduction to Wireless Sensor Networks: Motivations, Applications, Performance metrics, History and Design factors
2	Network Architecture – Traditional layered stack, Cross-layer designs, Sensor Network Architecture
3	Hardware platforms: motes, hardware parameters
4	Introduction to Network Simulator 3 (ns-3)
5	Medium Access Control – Protocol design Fixed Access, Random Access, WSN protocols: synchronized, duty-cycled
6	MAC Protocol Analysis – Asynchronous duty-cycled. X-MAC Analysis (Markov Chain)
7	Routing protocols: MANET protocols
8	Midterm
9	Routing protocols for WSN – Resource-aware routing, Data-centric, Geographic Routing, Broadcast, Multicast
10	Opportunistic Routing Analysis (Markov Chain)
11	Clustering goals, types, high-level overview, clustering in WSNs
12	QoS management Basic functions, centralized solution, Topology control, Sensor mode selection
13	Security Possible attacks, countermeasures, SPINS, Static and dynamic key distribution
14	Course overview

Textbook	Protocols and Architectures for Wireless Sensor Networks, H. Karl and A. Willig, Wiley Publishers, 2005.
Other References	
Laboratory Work	No
Computer Usage	No
Others	

#### LEARNING OUTCOMES AND COMPETENCIES

1	Learn how to analyze data
2	Understand Data Mining
3	Learn how to get information from raw data
4	

#### COURSE EVALUATION METHOD

In-term studies	Quantity	Percentage
Mid-terms	1	40
Quizzes		
Projects	1	60
Term Projects		
Laboratory		
Others- Attendance		
Total		100
Contribution of in-term studies to overall		40
grade		
Contribution of final examination to overall	1	60
grade	1	00
Total		100

#### ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	16	3	48
Hours for off-the-classroom study (Pre-study, practice)	16	3	48
Assignments			
Mid-terms	1	10	10
Final examination	1	20	20
Other			61.5
Total Work Loa	ıd		187.5
Total Work Load /	25 (h)		7.50
ECTS Credit of the	7.5		

#### Earthquake Disaster Mitigation

Course Name	Code Course Type Regu	Regular	Credit/ECTS	Lecture	Seminaries	Laboratory						
			Semester			(hour/week)						
Earthquake Disaster Mitigation	CE 6	Elective	Spring	3/6	3	-	-					
Department	Civil Engineer	Civil Engineering										
Lecturer and Office Hours	Dr. Hüseyin B	ilgin (hbilgin@ep	oka.edu.al)									
Language	English	inglish										
Compulsory/Elective	Elective	Elective										
Classroom and MeetingTime	Epoka Rinas Campus											
Course Description	Earthquake Bridges; Po Preparednes	Earthquake Damage; Disaster Management; Seismic Vulnerability and Risk Assessment of Buildings and Bridges; Post-Earthquake Assessment; Retrofitting and Strengthening of Structures; Earthquake Awareness, Preparedness and Education; Social and Economic Issues.										
Objectives	- Toc - Tor oppo	preate interest in present the range prtunities, limita	earthquake di of available tions of imple	saster mitigation an preparedness and m mentation in the reg	d management itigation measur gional context	es, consider their ap	opropriateness					
Aim	To develop a	n awareness in t	he civil engin	eering professional	on its role in mit	igating the effects of	of earthquakes					
	No. Topic											
	1 Video showing about Earthquakes; Overview of the course requirements and references											
	2 Overview of Disaster Management											
	3 Earthquakes and Earthquake Hazard Analysis											
	4 Review of Seismic Design Concepts and Building Code Requirements 5 Disaster Preparadness, Saismia Vulnerability & Dial Assessment (Conceptrant Vife unit											
COURSE	5 Disaster Preparedness; Seismic Vuinerability & Kisk Assessment; (Cases from different countries)											
CONTENT	6	6 Rapid Visual Screening of Buildings (FEMA154)										
	/	7 Case Studies on Seismic Vulnerability & Risk Assessment of Buildings										
	0	Disaster Resp	onse: Post-Fai	rthquake Assessment	Assessment of I	Singes						
	10	Rehabilitation	and Reconstr	uction: Public build	lings (School he	spitals etc)						
	10	Disaster Mitig	ation Structur	al Retrofitting & St	rengthening	(spruisee)						
	12	Case Studies	on Seismic Re	habilitation, Retrof	itting & Strength	ening						
	13	Technologies	and Research	on Earthquake Dan	nage & Mitigatio	on						
	14	Social Impact	s; Earthquake	Education								
Prerequisite(s)	Earthquake E	Ingineering; Stru	ctural Design	Concepts								
Textbook	There are no below provid	assigned textboo e useful referend	oks for this cla ce material for	ass. Lecture notes w	vill be assigned in	n class. The textboo	ks listed					
Computer Usage	Excel, PowerP	oint, Mathcad, Ma	atlab, Sap2000									
		·		Numbe	r	Ratio	%					
Course Evaluation	Term Project			1		60						
m ein oa	Final Exam			1		40						

	Course Name	Code	Code Course Type Regular Semester		Credit/ECTS	Lecture	Seminaries	Laboratory	
				Semester			(hour/week)		
	Fire Evacuation Design	CE 6	Elective	Spring	3/6	3	-	-	
	Department	Architecture	Architecture						
	Lecturer and Office Hours	Dr. Sokol Derv	Dr. Sokol Dervishi (sdervishi@epoka.edu.al)						
	Language	English	English						
	Classroom and	Elective	LIECTIVE						
	MeetingTime	Epoka Rinas C	Epoka Rinas Campus						
	Course Description	examination approaches models.	Provide a review of the mechanisms whereby people are affected by exposure to toxic effluent and heat in fires, including toxicology of fire effluent components, common fire scenarios to building occupants, examination of individual incidents through fire investigation, standard small and large scale experimental approaches and standards. In addition the course aims to review the formulation and application of evacuation models.						
	Objectives	- Revi - To c - To p oppo	<ul> <li>Review trends in human behavior and factors which affect the behavior of people in fire situations.</li> <li>To create interest in fire safety risk management</li> <li>To present the range of available preparedness and mitigation measures, consider their appropriateness, opportunities, limitations of implementation in the regional context</li> </ul>						
	Aim	To develop a	n awareness in t	he civil engine	ering professional	on its role in mi	tigating the effects of	f earthquakes	
Fire Evacuation Design	COURSE CONTENT	No.         Topic           1         Introduction to life safety concepts           2         Human behavior in fire theories: decision-making, response to alarm systems, information and environmental cues           3         Characteristics of people movement through smoke           4         Evacuation time analysis: Components of evacuation time, Transitions, Queues           5         Design of evacuation alarms           6         Panic           7         Social Impacts; Fire safety Education           8         General concepts of evacuation modelling part 1           9         General concepts of evacuation modelling part 2           10         Review of evacuation models           11         Use of evacuation models: Case studies; Uncertainties, Model defaults; Performance-design concepts           12         FDS+Evac tutorial           13         FDS+Evac tutorial				mation,			
	Prerequisite(s)	Building Sim	ulation; perform	nance-based D	esign Concepts				
	Textbook	SFPE Handbo	ook of Fire Prot	ection Enginee	ering, 4 <sup>m</sup> Edition, F	P.J. DiNenno (ed	.), Quincy: NFPA, 2	008.	
	Computer Usage	Building Simu	lation models					<b>A</b> /	
	Course Englished				Numbe	er	Ratio	%	
	Course Evaluation Method	<b>Term Project</b>			1		60		
		Final Exam			1		40		

Techniques and
Tools in Risk
Management

Course Name	Code	Course Type	Regular	Credit/ECTS	Lecture	Seminaries	Laboratory				
			Semester			(hour/week)					
Project Planning, Management And Coordination	CE 6	Elective	Spring	3/6	3	-	-				
Department	Civil Engineering										
Lecturer and	Ms. Julinda Keci										
Office Hours											
Language Compulsory/Elective	English										
Classroom and											
MeetingTime	Epoka Kinas Campus										
Course Description	Planning, r processes t the nine kn Time, Cost Tools/ tech to TQM an	Planning, management and coordination of projects. Application and integration of project management processes to the typical project lifecycle (initiating, planning, executing, monitoring, and closing). Studies in the nine knowledge areas defined by the Project Management Institute (PMI): Project Integration, Scope, Time, Cost, Quality, Human Resources, Communications, Risk and Procurement Management. Tools/ techniques for construction project planning and control of costs, time, risk and quality; Issues relating to TQM and health and safety; teamwork and leadership roles.									
Objectives	The course of their needs of to occupation sustainability	levelops understa an be coordinate n and maintenand y, health and safe	anding of the i d, managed ar ce within the c ety manageme	ssues related to the ad delivered from the context of overarchint.	management of ne project's conc ng project const	project stakeholder eptual stages throu raints of time, cost,	s and how gh production quality				
4 <i>im</i>	This course management	and coordinatio	n used to prov	ide value added ser	vices to clients.	and practices of pi	oject plannin				
	No.			То	pic						
	1 Introduction to Program Planning										
	2 Project Management Knowledge Areas; Project Management Process Groups										
	3 Discussion of Project Delivery Methods, Contract Terms, Project Documentations and										
	Quality Assurance Systems										
	4	Discussion of	Project Deliv	ery Methods, Contr	act Terms, Proje	ct Documentations	and				
		Quality Assur	ance Systems		-						
COURSE	5 Stages of a Project Development										
CONTENT	6	Work Breakdo	own Structure	; Application							
	7	Stochastic Ne	twork Technic	ques in Project Plan	ning						
	8	Midterm Exar	n								
	9	Critical Path N	Method								
	10	Program Eval	uation and Re	view Technique							
	11	Project Cost P	lan	10 1	<u></u>						
	12	Resource Han	dling , Leveli	ng and Constrained	Scheduling						
	13	Project Cash I	lows; Project	Funding							
<b>n</b>		Application; I	inal Review								
Prerequisite(s)	-		10		D 1 1071 D	1 11 2012					
Textbook	Project Man Project Man Blackwell, 2	agement: Plannir agement: A Syst 01	ng and Contro tems Approac	Techniques, Rory h to Planning, Sch	Burke, Wiley-Bl eduling, and Co	ackwell, 2013 ntrolling, Harold K	erzner, Wile				
Computer Usage											
				Numbe	r	Rati	0 %				
ourse Evaluation Method	Midterm			1		3	)				
	Assignments,	presentations		1		3	)				

#### Project Planning, Management and Coordination

Course Name	Code	Course Type	Regular Som optor	Credit/ECTS	Lecture	Seminaries	Laboratory					
		56	Semester		(hour/week)							
Project Planning, Management And Coordination	CE 6	Elective	Spring	3/6	3	-	-					
Department	Civil Engineer	ing										
Lecturer and Office Hours	Ms. Julinda Ke	As. Julinda Keci										
Innounge	Fnolish	netish										
Compulsory/Elective	Elective	lective										
Classroom and	Englis Dings C	teolo Dinco Commun										
MeetingTime	Epoka Kinas C	zpoka Rinas Campus										
Course Description	Planning, m processes to the nine kno Time, Cost, Tools/ techr to TQM and	anagement and o the typical proj owledge areas do Quality, Human niques for constr l health and safe	coordination of ect lifecycle ( efined by the F n Resources, C ruction project ty; teamwork	of projects. Applica initiating, planning Project Managemen Communications, R planning and contra and leadership role	tion and integrat , executing, mon at Institute (PMI) isk and Procurer rol of costs, time es.	ion of project manag itoring, and closing) :: Project Integration, nent Management. -, risk and quality; Ise	gement . Studies in , Scope, sues relating					
Objectives	The course de their needs ca to occupation sustainability	The course develops understanding of the issues related to the management of project stakeholders and how their needs can be coordinated, managed and delivered from the project's conceptual stages through production to occupation and maintenance within the context of overarching project constraints of time, cost, quality sustainability, health and safety management.										
Aim	This course a management	and coordinatio	he student wit n used to prov	h an understanding ide value added sei	g of the concepts rvices to clients.	and practices of pro	ject planning,					
	No	1		То	nio							
	1	1 Introduction to Program Planning										
	2. Project Management Knowledge Areas: Project Management Process Groups											
	3 Discussion of Project Delivery Methods, Contract Terms, Project Documentations and											
	Quality Assurance Systems											
	4 Discussion of Project Delivery Methods, Contract Terms, Project Documentations and											
	Quality Assurance Systems											
COURSE	5	Stages of a Pr	oject Develop	ment								
CONTENT	6	Work Breakde	own Structure:	Application								
	7	Stochastic Ne	twork Technic	ues in Project Plan	ning							
	8	Midterm Exar	n	- •	*							
	9	Critical Path N	Method									
	10	Program Eval	uation and Re	view Technique								
	11	11 Project Cost Plan										
	12	Resource Han	dling , Levelii	ng and Constrained	Scheduling							
	13	Project Cash I	Flows; Project	Funding								
	14	Application; I	Final Review									
Prerequisite(s)	Τ_											
	-											
	Project Mana	gement: Plannir	ng and Control	Techniques, Rory	Burke, Wiley-B	lackwell, 2013						
Textbook	Project Mana Project Mana	gement: Plannir gement: A Syst	ng and Control tems Approact	Techniques, Rory h to Planning, Sch	Burke, Wiley-B eduling, and Co	lackwell, 2013 ntrolling, Harold Ke	erzner, Wiley-					
Textbook	Project Mana Project Mana Blackwell, 20	gement: Plannir Igement: A Syst	ng and Control tems Approact	Techniques, Rory h to Planning, Sch	Burke, Wiley-B eduling, and Co	lackwell, 2013 ntrolling, Harold Ke	erzner, Wiley-					
Textbook Computer Usage	Project Mana Project Mana Blackwell, 20	gement: Plannir gement: A Syst )1	ng and Control tems Approac	Techniques, Rory h to Planning, Sch	Burke, Wiley-B eduling, and Co	lackwell, 2013 ntrolling, Harold Ke	erzner, Wiley-					
Textbook Computer Usage	Project Mana Project Mana Blackwell, 20	gement: Plannir gement: A Syst )1	ng and Control tems Approac	Techniques, Rory h to Planning, Sch Numbe	Burke, Wiley-B eduling, and Co er	lackwell, 2013 ntrolling, Harold Ke Ratio	erzner, Wiley- %					
Textbook Computer Usage Course Evaluation Method	Project Mana Project Mana Blackwell, 20 Midterm	gement: Plannir gement: A Syst )1	ng and Control eems Approac	Techniques, Rory h to Planning, Sch Numbe	Burke, Wiley-B eduling, and Co er	lackwell, 2013 ntrolling, Harold Ke Ratio 30	erzner, Wiley-					
Textbook Computer Usage Course Evaluation Method	Project Mana Project Mana Blackwell, 20 Midterm Assignments, J	gement: Plannir gement: A Syst )] oresentations	ag and Control	Techniques, Rory h to Planning, Sch Numbe 1 1	Burke, Wiley-B eduling, and Co er	lackwell, 2013 ntrolling, Harold Ke Ratio 30 30	erzner, Wiley- %					

### Hydraulic Structure

Course Name	Code	Course Type	Regular Semester	Credit/ECTS	Lecture	Seminaries	Laboratory				
			Semester			(hour/week)					
Flood Risk Assessment	CE 6	Elective	Spring	3/6	3	-	-				
Department	Civil Engineer	Civil Engineering									
Lecturer and Office Hours	Dr. Miriam No	Dr. Miriam Ndini (mndini@epoka.edu.al)									
Language	English	English									
Compulsory/Elective	Elective	Elective									
Classroom and MeetingTime	Epoka Rinas C	Epoka Rinas Campus									
······································	This course	will cover the l	atest applicati	on in Wireless Sens	or Networks. The	e course will cover	all aspects of				
	these uniqu	e and important	systems, fron	n the hardware and i	adio architecture	through protocols	and software				
Course Description	to application	ons. Topics will	include sense	or network architectu	ares, hardware pla	atforms, physical la	iyer				
	localization	time synchroni	control, routh	ty storage and othe	r advanced topic	s Each student mu	ent, st complete a				
	semester-lo	ng course projec	ct related to w	ireless sensor netwo	orks	5. Each student mu	st complete u				
	The goal of the	he class is to lea	rn the basic p	rinciples behind a W	ireless Sensor N	etwork. Following	the ISO Open				
	Systems Inter	rconnection (OS	I) model, the	class presents the pa	rticular challenge	es of designing netv	vork				
Objectives	protocols, ser	protocols, services and applications for WSNs composed of large numbers of constrained devices. Moreover,									
	simulator for	cusing in particu	lar on the sim	ork Simulator 5 (ns - ulation of wireless i	o), a well-know a betworks	and widely adopted	network				
	The aim of	The aim of the course is the identification of the risk from flooding, the assessment of flood risk and									
Aim	development	of strategies an	nd measures t	to reduce that risk,	and the creation	of policies and pr	ograms to put				
	these measure	these measures into effect.									
	N			Τ-							
	NO.	1 Introduction to flood risk management. Types of floods and their processes. Characteristics of									
		flood and their causes;									
	<sup>2</sup> Definition of flood, events driven by rainfall/runoff processes and by different natural or anthropic factors.										
	3	3 Quantifying flood risk – probabilistic and statistical approaches.									
	4	Design floods - and estimation of peak flows methods, catchment characteristics method,									
		storm hydrographs and unit hydrograph methods;									
COURSE	5	Measuring flood processes- Delineation of the flood-prone area- Floodway and flood plain- Monitoring River Hydraulic parameters. Vulnerability analysis.									
CONTENT	6	Floods in a changing world. Changes in Flow regimes, Changes in water resources Climate									
	7	Evaluation of Meteorological and Hydrologic Drought. Drought in water management									
	8	Implications of water management "Bridging" DRM with climate change adaptation									
	9	Flood Control Mechanisms. Structural measures for flood control (dams. dikes. diversions).									
	10	Non-structural measures. Informational system of flood warning and forecasting. Updating									
		the flood fore	cast.								
	11	Flood manage	ement plans, a	nd operation rules of	of the structural m	easures.	as and				
	12	flood prepare	dness	(Fie-, post- and du	ning 1100d). Flood	emergency respon	ise and				
	13	EU framewor	k directive on	floods							
	14	European exp	erience in ma	naging floods.							
Prerequisite(s)	Fluid dynami	ics and Hydrauli	ics; Hydrolog	y							
Textbook	There are no below provid	assigned textbo le useful referen	oks for this cl ce material fo	ass. Lecture notes w r the class.	ill be assigned in	class. The textboo	ks listed				
Computer Usage											
-				Numbe	r	Ratio	%				
Course Evaluation	Term Project			1		60	1				
Method	Final Exam			1		40	1				
							_				

Course Name	Code	Course Type	Regular	Credit/ECTS	Lecture	Seminaries	Laboratory
			Semester			(hour/week)	
Flood Risk Assessment	CE 6	Elective	Spring	3/6	3	-	-
Department Lecturer and Office Hours	Civil Engineer	ing ini (mndini@epol	ka.edu.al)				
 Language Compulsory/Electing	English						
Classroom and	Epoka Rinas C	ampus					
MeetingTime Course Description	This course these unique to application techniques, localization, semester-lon	will cover the la e and important ons. Topics will medium access , time synchroni ng course projec	atest application systems, from include sensor control, routin zation, securit et related to wi	n in Wireless Sens the hardware and r network architectt g, topology control y, storage, and othe reless sensor netwo	or Networks. The adio architectur ures, hardware p l, quality of server advanced topi orks	the course will cover a e through protocols a latforms, physical la ice (QoS) manageme cs. Each student mus	all aspects of and software ayer ent, st complete a
Objectives	The goal of th Systems Inter protocols, ser the class prov simulator, foc The aim of development	the class is to lear connection (OS vices and applic ides an introduc using in particu the course is in of strategies ar	In the basic pri I) model, the c ations for WS tion to Networ lar on the simu the identificat ad measures to	nciples behind a W lass presents the pa Ns composed of lar rk Simulator 3 (ns - llation of wireless r ion of the risk fr o reduce that risk,	rireless Sensor 1 articular challeng rge numbers of c 3), a well-know networks. rom flooding, t and the creation	Network. Following ges of designing netwo constrained devices. and widely adopted he assessment of f n of policies and pr	the ISO Open work Moreover, network lood risk and ograms to put
	these measure	es into effect.		То	pic		
	Introduction to flood risk management. Types of floods and their processes, Characteristics of flood and their causes;						cteristics of
	2 Definition of flood, events driven by rainfall/runoff processes and by different natural or anthropic factors.						
	Quantifying flood risk – probabilistic and statistical approaches.     Design floods - and estimation of peak flows methods, catchment characteristics method,						
	storm hydrographs and unit hydrograph methods;           5         Measuring flood processes- Delineation of the flood-prone area- Floodway and flood plain- Measuring in Understand Vederstellitzenership.						
COURSE CONTENT	Monitoring River Hydrautic parameters: Vulneraonity analysis.     Floods in a changing world. Changes in Flow regimes, Changes in water resource Change and its impact in Flood.						s Climate
	7	Evaluation of	Meteorologic	al and Hydrologic	Drought. Droug	ht in water managem	nent
	8	Implications of Flood Control	of water manage Mechanisms	gement. "Bridging" Structural measure	DRM with clin	nate change adaptation	on versions)
	10	Non-structura the flood fore	l measures. Int	formational system	of flood warnin	g and forecasting. U	Updating
	11 12	Flood manage Flood disaster	ment plans, ar management	nd operation rules of (Pre-, post- and due	of the structural i ring flood). Floo	measures. d emergency respon	ise and
	13	flood prepared EU framework	Iness	floods		C , 11	
	13	European exp	erience in man	aging floods.			
Prerequisite(s)	Fluid dynami	cs and Hydrauli	cs; Hydrology				
Textbook	There are no a below provide	assigned textboo e useful reference	oks for this cla ce material for	ss. Lecture notes w the class.	vill be assigned i	n class. The textbool	ks listed
Computer Usage	-			Numba	r	Ratio	. %
Course Evaluation				runde	1	Katio	. /0
Method	Term Project			1		60	)
	rmai Exam			1		40	1

### Structural Fire Safety

Landscape										
Perspectives in DRM	CE 6	Elective	Spring	3/6	3	-	-			
Department	Civil Engineerin	וס								
Lecturer and		<u>15</u>	·····							
Office Hours	Artan Luga (ahy	trian Luga (anysa@epoka.edu.ai)								
Language	English	nglish								
Compulsory/Elective	Elective	lective								
Classroom and	Epoka Rinas Ca	mpus								
Meeunglime	The course is	s focusing in un	derstanding th	ne disaster nhenom	enon as a process	rather than an event	The			
Course Description	development	development processes of the landscape aims to give a strong background for this understanding.								
Objectives & Aim	<ul> <li>a) Define Disast</li> <li>b) Becoming far</li> <li>scale disasters.</li> <li>c) Discussion of</li> <li>d) Introducing v.</li> <li>e) Applying the</li> </ul>	<ul> <li>Define Disaster phenomenon as a process rather than an unexpected occurrence</li> <li>Becoming familiar with the methods of assessing the processes of landscapes in order to predict and manage landscape cale disasters.</li> <li>Discussion of Social-Ecological dimensions of DRM in Landscape scale</li> <li>Introducing various software applications used for Disaster Risk Assessment in Landscape scale; ex. ArcGIS, QGis, etc.</li> <li>Applying the knowledge into sample exercises on real life cases of Disasters in Landscape scale.</li> </ul>								
	N.			T.						
	NO. 1	Introducition to I	andaaana lmn	LO lightight of EC DDM	pic					
	1	I Introduction to Landscape Implications of FS-DRM								
	2 Theory System Thinking in ES-DRM at Landscape scale									
	Practice OGis / basic tools									
	3 Theory Management principles in Natural systems; Mitigation, Adaptation, Resilinency, Feedback									
	5	loop. etc			, magation, raapta	alon, recommency, rece				
	Practice_QGis / editing tools									
	4 Theory_Resilient Human systems as DRM framework									
	Practice_QGis / analysis tools									
COUDSE	5 Theory_Wildfires									
COURSE	Practice_QGis / analysis tools II									
CONTENT	6 Theory_Floods and Coastal Disaster Risk Management									
	Practice_QGis / applied statistics									
	7	7 Theory_Earthquakes and Landslides								
		Practice_QGis	/ Publishing							
	8	Mid-lerm week		m definition study a		oforable atudica/acces	1			
	0	Prostico Doto	Collection and	Study gros Applygic	ase, QGIS usage, I	elerable studies/cases	J			
	9	Practice Literat		Sluuy died Alidiysis	recentations] / Res	arch supervision				
	10	Practice Literat		ase study Analysis pl	resentations] / Rese	arch supervision				
	12	Practice Literat	ure Review [Ca	ase study Analysis p	resentations] / Rese	arch supervision				
	13	Practice Literat	ure Review [Ca	ase study Analysis p	resentations] / Rese	earch supervision				
	14	Practice Literat	ure Review [Ca	ase study Analysis p	resentations] / Final	Remarks				
Prerequisite(s)	NO									
	Serre, D., Barro	ca, B., & Lacanie	r, R. (2013). Re	esilience and urban r	isk management: P	roceedings of the conf	erence 'How			
	the concept of r	esilience is able to	o improve urba	n risk management?	: A temporal and a	spatial analysis', Paris	s, France, 3-4			
Textbook	November 2011	. Boca Raton, FL:	CRC Press.	J. J						
	Paolo Gasparini, Gaetano Manfredi, Domenico Asprone (2014). Resilience and Sustainability in Relation to Natural									
	Disasters: A Ch	allenge for Future	Cities.							
Computer Usage	Microsoft Wo	rd, Excel								
				Numbe	er	Ratio	%			
Course Evaluation	Midtorm			1		20				
Method	Projects ouizz	os torm projecto		I		20				
1	riojecis, quizz	co, term projects		1		80				

Durability	of
Concrete	

Code	Course Type	Regular	Credit/ECTS	Lecture	Seminaries	Laboratory				
		Semester			(hour/week)					
CE 6	Elective	Spring	3/6	3	-	-				
Civil Engineeri	ivil Engineering									
Dr. Erion Luga	r. Erion Luga (eluga@epoka.edu.al)									
English Elective	inglish Hective									
Epoka Rinas Ca	poka Rinas Campus									
Aspects of E Aspects of N soundness, h ion permeati Attack, Alka	Aspects of Environment; atmospheric environment, sea environment, soil environment, industry environment. Aspects of Material; corrosion of reinforcing bar, alkali-aggregate reaction, carbonation, fire damage, soundness, hydrate—chemical corrosion, fire, dimensional stability, pore structure—permeability, chlorine ion permeation, frost resistance. Frost Resistance, Shrinkage, Creep, Corrosion of Embedded Rebar, Sulphate Attack, Alkali Aggregate Reaction, Resistance to Heat and Fire, Acid Attack									
The objective durability of c	of this course i concrete, require	s to provide ac ements and rel	lvanced information ated behavior chara	n about develop acteristics of cor	a basic understanding termination of the second sec	ng of key				
No.         Topic           1         Aspects of Environment           2         Aspects of Material										
4     Shrinkage       5     Creep										
6 7	6     Corrosion of Embedded Rebar       7     Sulphate Attack									
<u>8</u> 9	Midterm Exam I Alkali Aggregate Reaction									
10	10 Resistance to Heat and Fire									
12	12 Carbonations									
13         Pore structure permeability, chlorine ion permeation           14         Project										
NO										
Neville AM. H	Properties of co	ncrete. Harlow	(Essex, England):	Pearson; 2008						
Microsoft Wo	rd, Excel									
			Numbe	r	Ratio	0%				
Midterm			1		30					
Projects and T	erm projects		1		70	)				
	Code CE 6 Civil Engineeri Dr. Erion Luga English Elective Epoka Rinas Ca Aspects of E Aspects of M soundness, H ion permeati Attack, Alka The objective durability of co No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 NO Neville AM, H Microsoft Wo	Code       Course Type         CE 6       Elective         Civil Engineering       Dr. Erion Luga (eluga@epoka.ed         English       Elective         Epoka Rinas Campus       Aspects of Environment; att         Aspects of Material; corrosi soundness, hydrate - chemi ion permeation, frost resist       Attack, Alkali Aggregate Ro         The objective of this course i durability of concrete, required       No.         1       Aspects of Material; corrosi soundness, hydrate - chemi ion permeation, frost resist         Attack, Alkali Aggregate Ro       The objective of this course i durability of concrete, required         1       Aspects of Ma         3       Frost Resistan         4       Shrinkage         5       Creep         6       Corrosion of H         7       Sulphate Attack         8       Midterm Exar         9       Alkali Aggreg         10       Resistance to         11       Acid Attack         12       Carbonations         13       Pore structure         14       Project         NO       Neville AM. Properties of con         Mictrerm       Projects and Term projects	CodeCourse TypeRegular SemesterCE 6ElectiveSpringCivil EngineeringDr. Erion Luga (eluga@epoka.edu.al)EnglishElectiveEpoka Rinas CampusAspects of Environment; atmospheric env Aspects of Material; corrosion of reinforc soundness, hydrate — chemical corrosion, ion permeation, frost resistance. Frost Red Attack, Alkali Aggregate Reaction, Resist The objective of this course is to provide ac durability of concrete, requirements and relNo.1Aspects of Environment 22Aspects of Material 33Frost Resistance4Shrinkage5Creep6Corrosion of Embedded Rel 77Sulphate Attack 88Midterm Exam I 99Alkali Aggregate Reaction 1010Resistance to Heat and Fire 1111Acid Attack 1213Pore structure permeability, 1414ProjectNONeville AM. Properties of concrete. Harlow Microsoft Word, Excel	Code       Course Type       Regular Semester       Credit/ECTS         CE 6.       Elective       Spring       3/6         Civil Engineering       Dr. Erion Luga (eluga@epoka.edu.al)       English         English       Elective       Epoka Rinas Campus         Aspects of Environment; atmospheric environment, sea envir       Aspects of Material; corrosion of reinforcing bar, alkali-aggr soundness, hydrate chemical corrosion, fire, dimensional ion permeation, frost resistance. Frost Resistance, Shrinkagg Attack, Alkali Aggregate Reaction, Resistance to Heat and F         The objective of this course is to provide advanced information durability of concrete, requirements and related behavior chara         No.       Too         1       Aspects of Environment         2       Aspects of Environment         3       Frost Resistance         4       Shrinkage         5       Creep         6       Corrosion of Embedded Rebar         7       Sulphate Attack         8       Midterm Exam I         9       Alkali Aggregate Reaction         10       Resistance to Heat and Fire         11       Acid Attack         12       Carbonations         13       Pore structure permeability, chlorine ion permeating         14       Project	Code       Course Type       Regular Semester       Credit/ECTS       Lecture         CE 6.       Elective       Spring       3/6       3         Civil Engineering       Dr. Erion Luga (eluga@epoka.edu.al)       English         English       Elective       Epoka Rinas Campus         Aspects of Environment; atmospheric environment, sea environment, soil en Aspects of Material; corrosion of reinforcing bar, alkali-aggregate reaction, c soundness, hydrate - chemical corrosion, fire, dimensional stability, pore si on permeation, frost resistance. Frost Resistance to Heat and Fire, Acid Attack The objective of this course is to provide advanced information about develop durability of concrete, requirements and related behavior characteristics of corrosion of Emvironment         2       Aspects of Environment         2       Aspects of Material         3       Frost Resistance         4       Shrinkage         5       Creep         6       Corrosion of Embedded Rebar         7       Sulphate Attack         8       Midterm Exam I         9       Alkali Aggregate Reaction         10       Resistance to Heat and Fire         11       Acid Attack         12       Carbonations         13       Pore structure permeability, chlorine ion permeation         14       Project <td< td=""><td>Code         Course Type         Regular Semester         Credit/ECTS         Lecture         Seminaries           CE         Elective         Spring         3/6         3         -           Civil Engineering         .         .         .         .         .           Dr. Erion Luga (eluga@epoka.edu.al)         .         .         .         .         .           English         .         .         .         .         .         .         .           Elective         .         .         .         .         .         .         .         .         .           Aspects of Environment; atmospheric environment, sea environment, soil environment, industry         .</td></td<>	Code         Course Type         Regular Semester         Credit/ECTS         Lecture         Seminaries           CE         Elective         Spring         3/6         3         -           Civil Engineering         .         .         .         .         .           Dr. Erion Luga (eluga@epoka.edu.al)         .         .         .         .         .           English         .         .         .         .         .         .         .           Elective         .         .         .         .         .         .         .         .         .           Aspects of Environment; atmospheric environment, sea environment, soil environment, industry         .				

# Landscape Perspectives in DRM & FS

Course Name	Code	Course Type	<b>Regular</b>	Credit/ECTS	Lecture	Seminaries	Laboratory				
		Semes			(hour/week)		-				
Landscape Perspectives in DRM & FS	CE 6	Elective	Spring	3/6	3	-	-				
Department	Civil Engineerin	Civil Engineering									
Lecturer and Office Hours	Artan Luga (ahy	ysa@epoka.edu.a	l)								
Language	English										
Compulsory/Elective	Elective										
Classroom and	Epoka Rinas Ca	umpus									
MeetingTime	The course is	fooning in m	donaton din o	the disector sheepen		nothan than an arran	t The				
Course Description	development	I ne course is focusing in understanding the disaster phenomenon as a process rather than an event. The development processes of the landscape aims to give a strong background for this understanding.									
Objectives & Aim	<ul> <li>a) Define Disas</li> <li>b) Becoming fai scale disasters.</li> <li>c) Discussion of d) Introducing v</li> <li>e) Applying the</li> </ul>	<ul> <li>a) Define Disaster phenomenon as a process rather than an unexpected occurrence</li> <li>b) Becoming familiar with the methods of assessing the processes of landscapes in order to predict and manage landscape scale disasters.</li> <li>c) Discussion of Social-Ecological dimensions of DRM in Landscape scale</li> <li>d) Introducing various software applications used for Disaster Risk Assessment in Landscape scale; ex. ArcGIS, QGis, etc.</li> <li>e) Applying the knowledge into sample exercises on real life cases of Disasters in Landscape scale.</li> </ul>									
	No			Та	nia						
	No. Topic										
	1	Practice_QGis Introduction									
	2	Theory_System Thinking in FS-DRM at Landscape scale									
		Practice_QGis / basic tools									
	3	3 Theory_Management principles in Natural systems; Mitigation, Adaptation, Resilinency, Feedback									
		loop, etc									
	Practice_QGis / editing tools										
	4	4 Ineory_ Kesilient Human systems as DKM framework Practice_OG is / analysis tools									
	5	5 Theory Wildfires									
COURSE	Practice OGis / analysis tools II										
CONTENT	6	6 Theory Floods and Coastal Disaster Risk Management									
	Ť	Practice_QGis / applied statistics									
	7	Theory_Earthquakes and Landslides									
		Practice_QGis / Publishing									
	8	Mid-Term week									
	Term Project Proposal [problem definition, study case, QGis usage, referable studies/cases]										
	Y Pridctice _ Data Collection and Study area Analysis										
	10	Practice Litera		ase study Analysis pl	resentations] / Rese						
	11	Practice Litera	iture Review [(	Case study Analysis pi	resentations] / Rese	arch supervision	{				
	13	Practice Litera	ture Review [	Case study Analysis pr	resentations] / Rese	arch supervision					
	14	14 Practice Literature Review [Case study Analysis presentations] / Final Remarks									
Prerequisite(s)	NO										
	Serre, D., Barro	ca, B., & Lagani	er, R. (2013). F	Resilience and urban r	isk management: P	roceedings of the con	ference 'How				
	the concept of r	esilience is able	to improve urb	an risk management?	: A temporal and a	spatial analysis', Paris	s, France, 3-4				
Textbook	November 2011	. Boca Raton, Fl	.: CRC Press.								
	Paolo Gasparini, Gaetano Mantredi, Domenico Asprone (2014). Resilience and Sustainability in Relation										
Computer Usage	Disasters: A Ch	allenge for Futur	e Cities.								
Computer Usage	wherosoft WO	iu, Excei		Numbe	er	Ratio	%				
Course Evaluation											
Method	Midterm			1		20					
	Projects , quizz	es, term project	s	1		80					
						1					

Wireless Sensor	
Network	

Course Name	Code	Course Type	Regular	Credit/ECTS	Lecture	Seminaries	Laboratory				
			Semester			(hour/week)	•				
Wireless Sensor Network	CE 6	Elective	Spring	3/6	3	-	-				
Department	Computer Engi	Computer Engineering									
Lecturer and Office Hours	Dr. Elton Dom	Dr. Elton Domnori (edomnori@epoka.edu.al)									
Language Compulsory/Elective	English Elective										
Classroom and MeetingTime	Epoka Rinas Campus /										
Course Description	This course will cover the latest application in Wireless Sensor Networks. The course will cover all aspects of these unique and important systems, from the hardware and radio architecture through protocols and software to applications. Topics will include sensor network architectures, hardware platforms, physical layer techniques, medium access control, routing, topology control, quality of service (QoS) management, localization, time synchronization, security, storage, and other advanced topics. Each student must complete a semester-long course project related to wireless sensor networks.										
Objectives & Aim	The goal of the class is to learn the basic principles behind a Wireless Sensor Network. Following the ISO Open Systems Interconnection (OSI) model, the class presents the particular challenges of designing network protocols, services and applications for WSNs composed of large numbers of constrained devices. Moreover, the class provides an introduction to Network Simulator 3 (ns-3), a well-know and widely adopted network simulator, focusing in particular on the simulation of wireless networks.										
	No.         Topic           1         Introduction to Wireless Sensor Networks – Course Informations, Introduction to Wireless Sensor Networks: Motivations, Applications, Performance metrics, History and Design factors										
	2 Network Architecture – Traditional layered stack, Cross-layer designs, Sensor Network Architecture										
	3	3 Hardware platforms: motes, hardware parameters									
	4	4 Introduction to Network Simulator 3 (ns-3)									
COURSE	5	5 Medium Access Control – Protocol design Fixed Access, Random Access, WSN protocols: synchronized, duty-cycled									
CONTENT	6	MAC Protoco	1 Analysis – A	synchronous duty-	cycled. X-MAC	Analysis (Markov (	Chain)				
	7	Routing proto	cols: MANET	protocols							
	8	Midterm	4 9	~	. –	. ~ · ·					
	9 Routing protocols for WSN – Resource-aware routing, Data-centric, Geographic Routing, Broadcast, Multicast										
	10	Opportunistic Routing Analysis (Markov Chain)									
	11	Clustering goa	als, types, high	-level overview, cl	ustering in WSN	s					
	12	QoS managem mode selection	nent Basic fun n	ctions, centralized s	solution, Topolog	y control, Sensor					
	13	Security Possi	ble attacks, co	untermeasures, SP	INS, Static and d	y namic key distrib	ation				
	14	Course overvi	ew								
Prerequisite(s)	-										
Textbook	Protocols and	Architectures f	or Wireless Se	ensor Networks, H.	Karl and A. Wil	lig, Wiley Publishe	rs, 2005.				
Computer Usage	Excel, PowerPo	oint,									
				Numbe	r	Ratio	%				
Course Evaluation	Midterm			1		40					
M ethoa	Projects			1		60					





EPOKA University	Albania	PC client + Monitors x 25 pcs	17,000.00
EPOKA University	Albania	Laptop computer x 6 pcs	4,800.00
EPOKA University	Albania	Digital camera (Semi Profesional) with Tripod x 1 pcs	2,000.00
EPOKA University	Albania	Books/Journals/E-books x 10	1,000.00
EDOKA University	Albania	Outdoor Handheld GPS GIS Mapping Data Collector 2-5m x	2,000.00
	Albania	I ED Video projector x 3	1 200 00
EPOKA University	Albania		.,
		Router	400.00
EPOKA University	Albania		
		TeleConference Room Equipments (Camera + Microphones)	1 000 00
EPOKA University	Albania	x 1 pcs	1,000.00



























# Thank you!