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STUDY VISIT AT AALBORG UNIVERSITY
April 25th to 30th, 2017

DEVELOPED DRM&FSE MPS CURRICULA *(task 1.3)*
&
EQUIPPING EDUCATION ICT BASED LABORATORIES *(task 1.4)*

EPOKA UNIVERSITY

EPOKA UNIVERSITY

DEVELOPED DRM&FSE MPS CURRICULA

Newly developed curricula

Professional Master Program in DRM&FSE

60 ects

EPOKA UNIVERSITY

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

EPOKA UNIVERSITY

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

EPOKA UNIVERSITY

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

FS

DRM&FSE PM COURSES

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 Office Hours							
Teaching and Assistants Office Hours							
Language			English				
Compulsory/Elective			Elective				
Classroom and 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
Objectives	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 grade		**40**
Contribution of final examination to overall grade	**1**	**60**
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 Load			**187.5**
Total Work Load / 25 (h)			**7.50**
ECTS Credit of the Course			**7.5**

Earthquake Disaster Mitigation

Course Name	Code	Course Type	Regular Semester	Credit/ECTS	Lecture (hour/week)	Seminaries (hour/week)	Laboratory (hour/week)
Earthquake Disaster Mitigation	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Dr. Hüseyin Bilgin (hbilgin@epoka.edu.al)
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	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	- To create interest in earthquake disaster mitigation and management - To present the range of available preparedness and mitigation measures, consider their appropriateness, opportunities, limitations of implementation in the regional context
Aim	To develop an awareness in the civil engineering professional on its role in mitigating the effects of earthquakes

COURSE CONTENT

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 Preparedness; Seismic Vulnerability & Risk Assessment; (Cases from different countries)
6	Rapid Visual Screening of Buildings (FEMA154)
7	Case Studies on Seismic Vulnerability & Risk Assessment of Buildings
8	Earthquake Damage and Seismic Vulnerability Assessment of Bridges
9	Disaster Response; Post-Earthquake Assessment
10	Rehabilitation and Reconstruction; Public buildings (School, hospitals..etc)
11	Disaster Mitigation Structural Retrofitting & Strengthening
12	Case Studies on Seismic Rehabilitation, Retrofitting & Strengthening
13	Technologies and Research on Earthquake Damage & Mitigation
14	Social Impacts; Earthquake Education

Prerequisite(s)	Earthquake Engineering; Structural Design Concepts
Textbook	There are no assigned textbooks for this class. Lecture notes will be assigned in class. The textbooks listed below provide useful reference material for the class.
Computer Usage	Excel, PowerPoint, Mathcad, Matlab, Sap2000

Course Evaluation Method

	Number	Ratio %
Term Project	1	60
Final Exam	1	40

Fire Evacuation Design

Course Name	*Code*	*Course Type*	*Regular Semester*	*Credit/ECTS*	*Lecture* (hour/week)	*Seminaries* (hour/week)	*Laboratory* (hour/week)
Fire Evacuation Design	CE 6..	Elective	Spring	3/6	3	-	-

Department	Architecture
Lecturer and Office Hours	Dr. Sokol Dervishi (sdervishi@epoka.edu.al)
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	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	- Review trends in human behavior and factors which affect the behavior of people in fire situations. - To create interest in fire safety risk management - To present the range of available preparedness and mitigation measures, consider their appropriateness, opportunities, limitations of implementation in the regional context
Aim	To develop an awareness in the civil engineering professional on its role in mitigating the effects of earthquakes

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-based design concepts
12	FDS+Evac tutorial
13	FDS+Evac tutorial
14	FDS+Evac tutorial

Prerequisite(s)	Building Simulation; performance-based Design Concepts
Textbook	SFPE Handbook of Fire Protection Engineering, 4th Edition, P.J. DiNenno (ed.), Quincy: NFPA, 2008.
Computer Usage	Building Simulation models

Course Evaluation Method

	Number	Ratio %
Term Project	1	60
Final Exam	1	40

Techniques and Tools in Risk Management

Course Name	Code	Course Type	Regular Semester	Credit/ECTS	Lecture	Seminaries	Laboratory
					(hour/week)		
Project Planning, Management And Coordination	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Ms. Julinda Keci
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	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 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 aims to provide the student with an understanding of the concepts and practices of project planning, management and coordination used to provide value added services to clients.

COURSE CONTENT

No.	Topic
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
5	Stages of a Project Development
6	Work Breakdown Structure; Application
7	Stochastic Network Techniques in Project Planning
8	Midterm Exam
9	Critical Path Method
10	Program Evaluation and Review Technique
11	Project Cost Plan
12	Resource Handling , Leveling and Constrained Scheduling
13	Project Cash Flows; Project Funding
14	Application; Final Review

Prerequisite(s)	-
Textbook	Project Management: Planning and Control Techniques, Rory Burke, Wiley-Blackwell, 2013 Project Management: A Systems Approach to Planning, Scheduling, and Controlling, Harold Kerzner, Wiley-Blackwell, 201
Computer Usage	

Course Evaluation Method

	Number	Ratio %
Midterm	1	30
Assignments, presentations	1	30
Final Exam		40

Project Planning, Management and Coordination

Course Name	Code	Course Type	Regular Semester	Credit/ECTS	Lecture (hour/week)	Seminaries (hour/week)	Laboratory (hour/week)
Project Planning, Management And Coordination	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Ms. Julinda Keci
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	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 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 aims to provide the student with an understanding of the concepts and practices of project planning, management and coordination used to provide value added services to clients.

COURSE CONTENT

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6	Work Breakdown Structure; Application
7	Stochastic Network Techniques in Project Planning
8	Midterm Exam
9	Critical Path Method
10	Program Evaluation and Review Technique
11	Project Cost Plan
12	Resource Handling , Leveling and Constrained Scheduling
13	Project Cash Flows; Project Funding
14	Application; Final Review

Prerequisite(s)	-
Textbook	Project Management: Planning and Control Techniques, Rory Burke, Wiley-Blackwell, 2013 Project Management: A Systems Approach to Planning, Scheduling, and Controlling, Harold Kerzner, Wiley-Blackwell, 201
Computer Usage	

Course Evaluation Method

	Number	Ratio %
Midterm	1	30
Assignments, presentations	1	30
Final Exam		40

Hydraulic Structure

Course Name	Code	Course Type	Regular Semester	Credit/ECTS	Lecture	Seminaries	Laboratory
					(hour/week)		
Flood Risk Assessment	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Dr. Miriam Ndini (mndini@epoka.edu.al)
Language	English
Compulsory/Elective	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	The goal of the class is to learn the basic principles behind a W ireless 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.
Aim	The aim of the course is the identification of the risk from flooding, the assessment of flood risk and development of strategies and measures to reduce that risk, and the creation of policies and programs to put these measures into effect.

COURSE CONTENT

No.	Topic
1	Introduction to flood risk management. Types of floods and their processes, Characteristics of flood and their causes;
2	Definition of flood, events driven by rainfall/runoff processes and by different natural or anthropic factors.
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;
5	Measuring flood processes- Delineation of the flood-prone area- Floodway and flood plain- Monitoring River Hydraulic parameters. Vulnerability analysis.
6	Floods in a changing world. Changes in Flow regimes, Changes in water resources Climate Change and its impact in Flood.
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 forecast.
11	Flood management plans, and operation rules of the structural measures.
12	Flood disaster management (Pre-, post- and during flood). Flood emergency response and flood preparedness
13	EU framework directive on floods
14	European experience in managing floods.

Prerequisite(s)	Fluid dynamics and Hydraulics; Hydrology
Textbook	There are no assigned textbooks for this class. Lecture notes will be assigned in class. The textbooks listed below provide useful reference material for the class.
Computer Usage	-

Course Evaluation Method

	Number	Ratio %
Term Project	1	60
Final Exam	1	40

Flood Risk Assessment

Course Name	*Code*	*Course Type*	*Regular Semester*	*Credit/ECTS*	*Lecture*	*Seminaries*	*Laboratory*
					(hour/week)		
Flood Risk Assessment	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Dr. Miriam Ndini (mndini@epoka.edu.al)
Language	English
Compulsory/Elective	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	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.
Aim	The aim of the course is the identification of the risk from flooding, the assessment of flood risk and development of strategies and measures to reduce that risk, and the creation of policies and programs to put these measures into effect.

COURSE CONTENT

No.	Topic
1	Introduction to flood risk management. Types of floods and their processes, Characteristics of flood and their causes;
2	Definition of flood, events driven by rainfall/runoff processes and by different natural or anthropic factors.
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;
5	Measuring flood processes- Delineation of the flood-prone area- Floodway and flood plain- Monitoring River Hydraulic parameters. Vulnerability analysis.
6	Floods in a changing world. Changes in Flow regimes, Changes in water resources Climate Change and its impact in Flood.
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 forecast.
11	Flood management plans, and operation rules of the structural measures.
12	Flood disaster management (Pre-, post- and during flood). Flood emergency response and flood preparedness
13	EU framework directive on floods
14	European experience in managing floods.

Prerequisite(s)	Fluid dynamics and Hydraulics; Hydrology
Textbook	There are no assigned textbooks for this class. Lecture notes will be assigned in class. The textbooks listed below provide useful reference material for the class.
Computer Usage	-

Course Evaluation Method

	Number	Ratio %
Term Project	1	60
Final Exam	1	40

Structural Fire Safety

Landscape Perspectives in DRM & FS	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Artan Luga (ahysa@epoka.edu.al)
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	The 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	a) Define Disaster phenomenon as a process rather than an unexpected occurrence b) Becoming familiar with the methods of assessing the processes of landscapes in order to predict and manage landscape scale disasters. c) Discussion of Social-Ecological dimensions of DRM in Landscape scale d) Introducing various software applications used for Disaster Risk Assessment in Landscape scale; ex. ArcGIS, QGis, etc. e) Applying the knowledge into sample exercises on real life cases of Disasters in Landscape scale.

COURSE CONTENT

No.	Topic
1	Introducition to Landscape Implications of FS-DRM Practice_ QGis Introduction
2	Theory_ System Thinking in FS-DRM at Landscape scale Practice_ QGis / basic tools
3	Theory_ Management principles in Natural systems; Mitigation, Adaptation, Resilinency, Feedback loop, etc Practice_ QGis / editing tools
4	Theory_ Resilient Human systems as DRM framework Practice_ QGis / analysis tools
5	Theory_ Wildfires Practice_ QGis / analysis tools II
6	Theory_ Floods and Coastal Disaster Risk Management 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]
9	Practice _ Data Collection and Study area Analysis
10	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
11	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
12	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
13	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
14	Practice_ Literature Review [Case study Analysis presentations] / Final Remarks

Prerequisite(s)	NO
Textbook	Serre, D., Barroca, B., & Laganier, R. (2013). Resilience and urban risk management: Proceedings of the conference 'How the concept of resilience is able to improve urban risk management? : A temporal and a spatial analysis', Paris, France, 3-4 November 2011. Boca Raton, FL: CRC Press. Paolo Gasparini, Gaetano Manfredi, Domenico Asprone (2014). *Resilience and Sustainability in Relation to Natural Disasters: A Challenge for Future Cities*.
Computer Usage	Microsoft Word, Excel

Course Evaluation Method	**Number**	**Ratio %**
Midterm	1	20
Projects , quizzes, term projects	1	80

Durability of Concrete

Course Name	*Code*	*Course Type*	*Regular Semester*	*Credit/ECTS*	*Lecture*	*Seminaries*	*Laboratory*
					(hour/week)		
Durability of Concrete	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Dr. Erion Luga (eluga@epoka.edu.al)
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	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
Objectives & Aim	The objective of this course is to provide advanced information about develop a basic understanding of key durability of concrete, requirements and related behavior characteristics of concrete durability.
COURSE CONTENT	

No.	**Topic**
1	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

Prerequisite(s)	NO
Textbook	Neville AM. Properties of concrete. Harlow (Essex, England): Pearson; 2008
Computer Usage	Microsoft Word, Excel

Course Evaluation Method		**Number**	**Ratio %**
	Midterm	1	30
	Projects and Term projects	1	70

Landscape Perspectives in DRM & FS

Course Name	*Code*	*Course Type*	*Regular Semester*	*Credit/ECTS*	*Lecture*	*Seminaries*	*Laboratory*
					(hour/week)		
Landscape Perspectives in DRM & FS	CE 6..	Elective	Spring	3/6	3	-	-

Department	Civil Engineering
Lecturer and Office Hours	Artan Luga (ahysa@epoka.edu.al)
Language	English
Compulsory/Elective	Elective
Classroom and MeetingTime	Epoka Rinas Campus
Course Description	The 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	a) Define Disaster phenomenon as a process rather than an unexpected occurrence b) Becoming familiar with the methods of assessing the processes of landscapes in order to predict and manage landscape scale disasters. c) Discussion of Social-Ecological dimensions of DRM in Landscape scale d) Introducing various software applications used for Disaster Risk Assessment in Landscape scale; ex. ArcGIS, QGis, etc. e) Applying the knowledge into sample exercises on real life cases of Disasters in Landscape scale.

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2	Theory_ System Thinking in FS-DRM at Landscape scale Practice_ QGis / basic tools
3	Theory_ Management principles in Natural systems; Mitigation, Adaptation, Resilinency, Feedback loop, etc Practice_ QGis / editing tools
4	Theory_ Resilient Human systems as DRM framework Practice_ QGis / analysis tools
5	Theory_ Wildfires Practice_ QGis / analysis tools II
6	Theory_ Floods and Coastal Disaster Risk Management 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]
9	Practice _ Data Collection and Study area Analysis
10	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
11	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
12	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
13	Practice_ Literature Review [Case study Analysis presentations] / Research supervision
14	Practice_ Literature Review [Case study Analysis presentations] / Final Remarks

Prerequisite(s)	NO
Textbook	Serre, D., Barroca, B., & Laganier, R. (2013). Resilience and urban risk management: Proceedings of the conference 'How the concept of resilience is able to improve urban risk management? : A temporal and a spatial analysis', Paris, France, 3-4 November 2011. Boca Raton, FL: CRC Press. Paolo Gasparini, Gaetano Manfredi, Domenico Asprone (2014). *Resilience and Sustainability in Relation to Natural Disasters: A Challenge for Future Cities*.
Computer Usage	Microsoft Word, Excel

Course Evaluation Method	**Number**	**Ratio %**
Midterm	1	20
Projects , quizzes, term projects	1	80

Wireless Sensor Network

Course Name	*Code*	*Course Type*	*Regular Semester*	*Credit/ECTS*	*Lecture* (hour/week)	*Seminaries* (hour/week)	*Laboratory* (hour/week)
Wireless Sensor Network	CE 6..	Elective	Spring	3/6	3	-	-

Department	Computer Engineering
Lecturer and Office Hours	Dr. Elton Domnori (edomnori@epoka.edu.al)
Language	English
Compulsory/Elective	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.
COURSE CONTENT	

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	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

Prerequisite(s)	-
Textbook	Protocols and Architectures for Wireless Sensor Networks, H. Karl and A. Willig, Wiley Publishers, 2005.
Computer Usage	Excel, PowerPoint,

Course Evaluation Method		**Number**	**Ratio %**
	Midterm	1	40
	Projects	1	60

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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
EPOKA University	Albania	Outdoor Handheld GPS GIS Mapping Data Collector 2-5m x 1	2,000.00
EPOKA University	Albania	LED Video projector x 3	1,200.00
EPOKA University	Albania	Router	400.00
EPOKA University	Albania	TeleConference Room Equipments (Camera + Microphones) x 1 pcs	1,000.00

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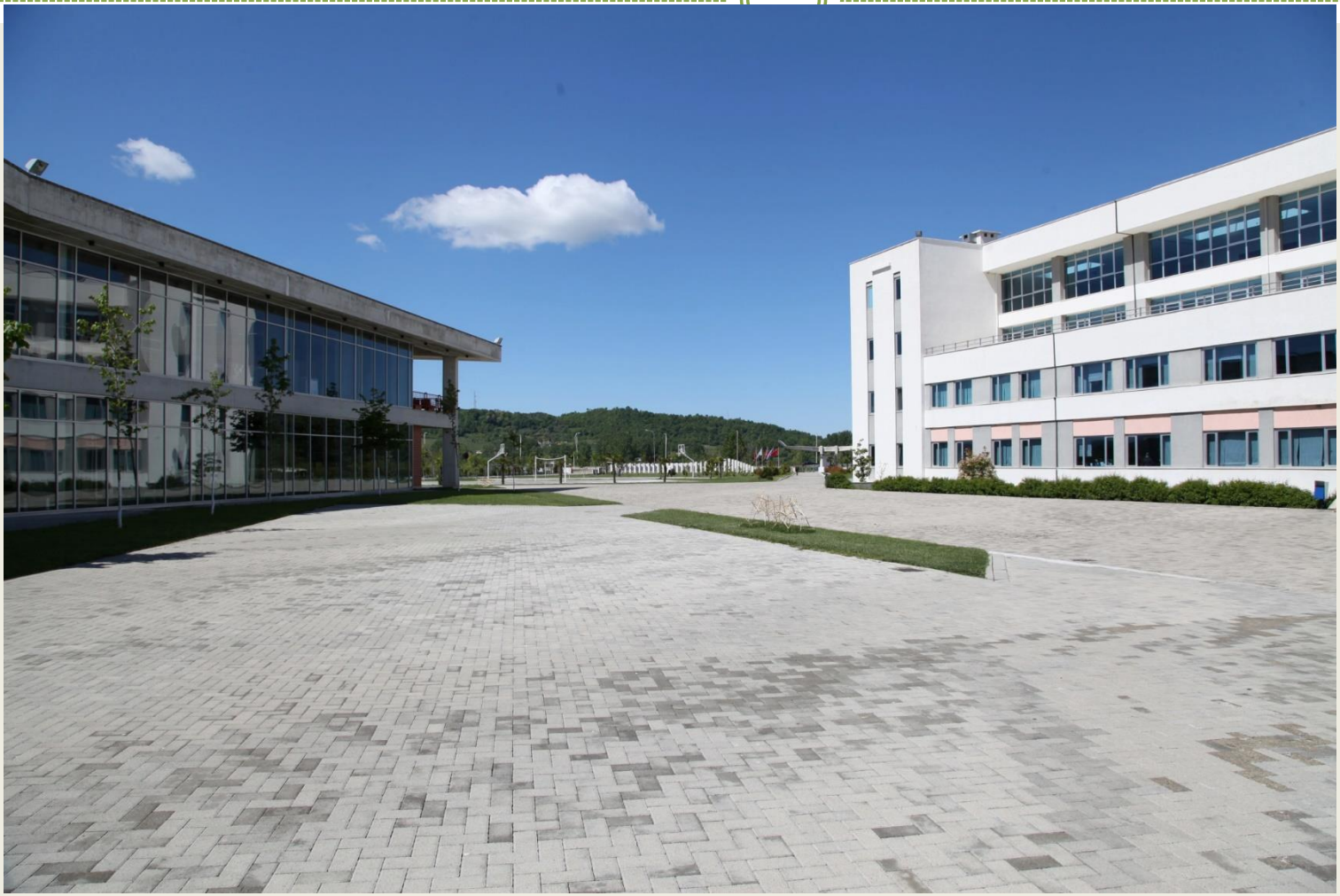

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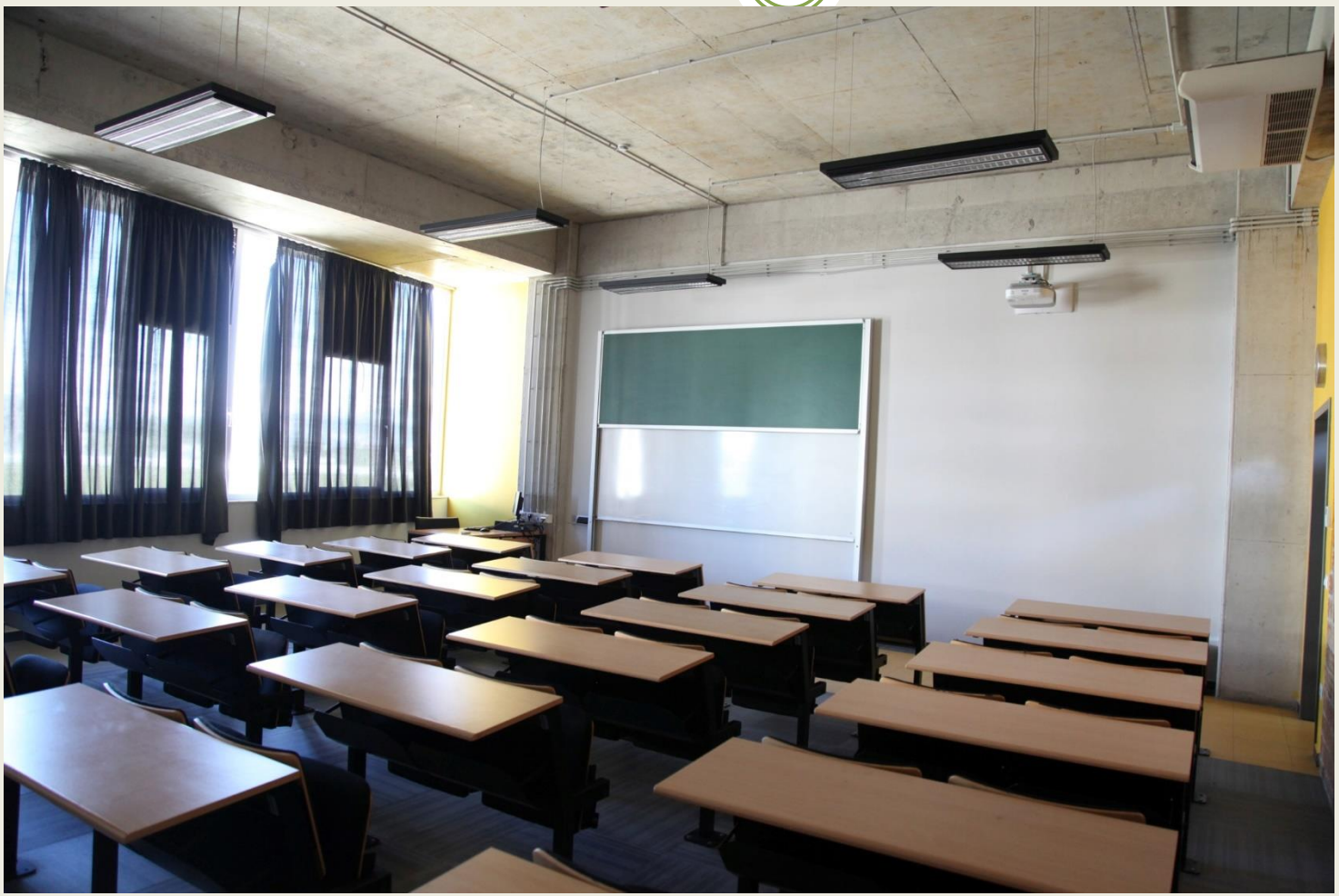

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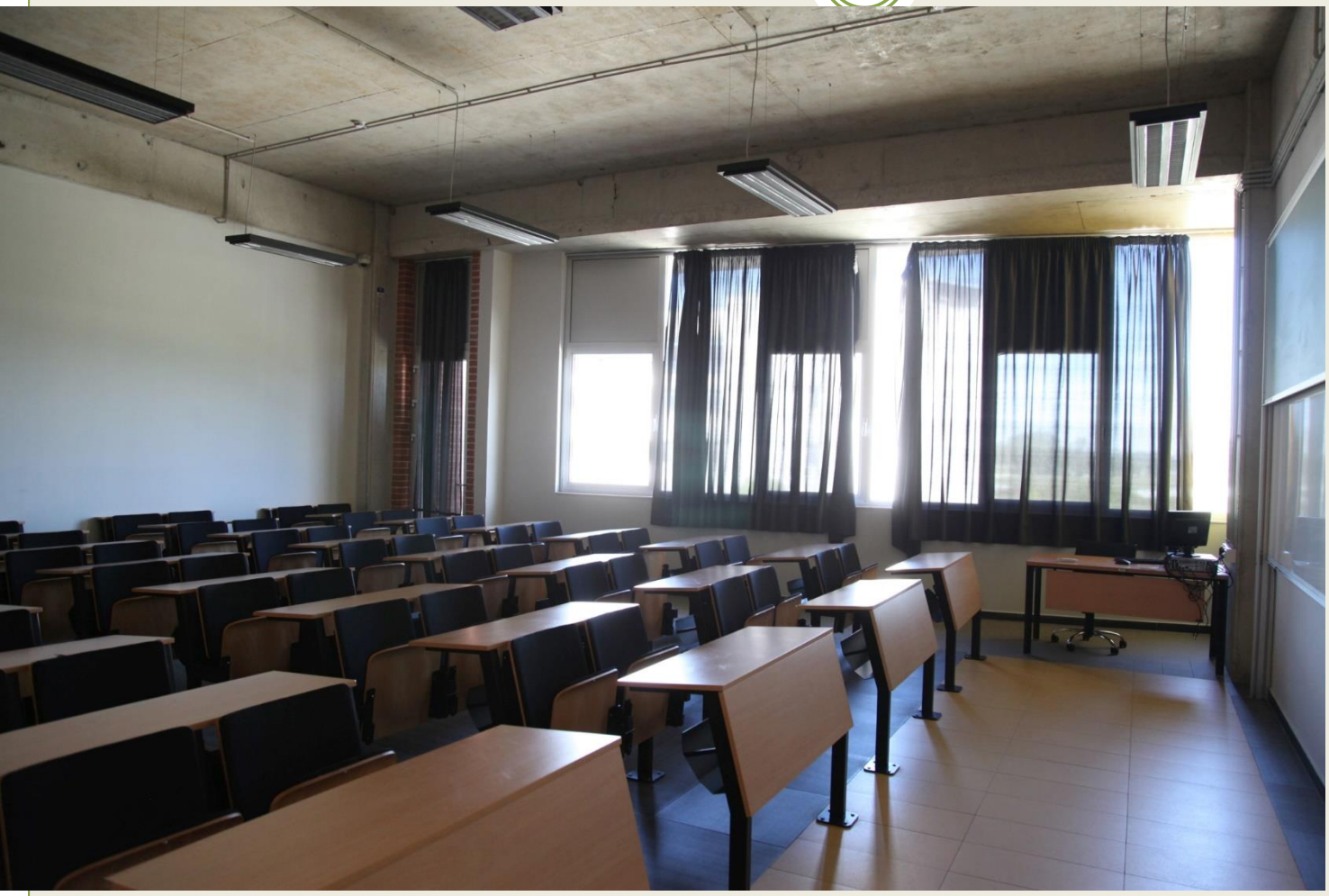

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Thank you!