



YAŞAR UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
DOCTOR OF PHILOSOPHY IN COMPUTER ENGINEERING
DEPARTMENT
COURSE SYLLABUS

Course Title	Course Code	Semester	Course Hour/Week		Local Credit	ECTS
SPATIAL SEMANTIC WEB	CENG 503	Fall	Theory 3	Practice 0	3	8
CourseType		Elective				
Language of Instruction		English				
Level of Course		Graduate Degree(Second Cycle)				
Prerequisites Course(s) (compulsory)		None				
Special Pre-Conditions of the Course(recommended)		Basic Geographic Information Systems (GIS) Knowledge, Dat				
Course Coordinator						
Name Surname	Mail	Web				
Assist. Prof. Dr. MURAT KOMESLİ	murat.komesli@yasar.edu.tr					
Course Instructor(s)						
Name Surname	Mail	Web				
Assist. Prof. Dr. MURAT KOMESLİ	murat.komesli@yasar.edu.tr					
Course Assistant(s)/Tutor(s)						
Name Surname	Mail	Web				
Course Web Site						
Aim(s) of Course						
Within the context of this lecture, semantic geographic information system, based on semantic web technology will be introduced. The semantic web technologies and ontology modeling techniques will also be explained. Sharing the geographic data among the heterogeneous geographical information systems' databases is becoming more important in GIS technology. By achieving interoperability between systems, systems are managed to understand and exchange the geographic information between each other. The exchange of geographic data can be basically considered as a first integration step of geographic information systems.						
Course Content						
The course includes the following subjects: GIS Basics, Types of geographic data, Spatial analysis, Semantic Web, Modeling, Semantics, XML and XML Schema, GML, RDF and RDF Schema, OpenGIS Consortium, Ontology and OWL, Ontology Development Tools, Semantic GIS / Spatial Semantic Web.						
Learning Outcomes of the Course						
Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences:						
1	Identify GIS basics and types of geographic data					
2	Describe Spatial analysis					
3	Identify Semantic Web, Modeling, Semantics					

4	Describe XML and XML Schema
5	Describe GML, RDF and RDF Schema
6	Identify OpenGIS Consortium
7	Describe Ontology, OWL, and Ontology Development Tools
8	Describe Semantic GIS / Spatial Semantic Web

COURSE OUTLINE/SCHEDULE (Weekly)

Week	Topics	Preliminary Preparation	Methodology and Implementation(Theory, practice, assignment etc.)
1	GIS Basics	.	.
2	Types of geographic data	.	.
3	Spatial analysis	.	.
4	Semantic Web	.	.
5	Modeling	.	.
6	Semantics	.	.
7	Midterm Examination	.	.
8	XML and XML Schema	.	.
9	GML	.	.
10	RDF and RDF Schema	.	.
11	OpenGIS Consortium	.	.
12	Ontology and OWL	.	.
13	Ontology Development Tools	.	.
14	Ontology Development Tools	.	.
15	Review	.	.
16	Final Examination	.	.

Resources

Required Course Material(s)/Reading(s)/Text Book(s)

Michael C. Daconta, Leo J. Obrst and Kevin T. Smith, "The Semantic Web: A Guide to the Future of XML, Web Services and Knowledge Management", Wiley, 2003, ISBN-10: 0471432571, ISBN-13: 978-0471432579.

Recommended Course Material(s)/Reading(s)/Other

1. Peter van Oosterom, Sisi Zlatanova, "Towards the Spatial Semantic Web: Creating Spatial Information Infrastructures", Taylor and Francis, ISBN 978-1-4200-7068-2.
2. Timothy Ross, "XML Managing Data Exchange", Global Media, 2007, ISBN 978 81 89940 88 1.
3. Vladimir Geroimenko and Chaomei Chen, "Visualizing the Semantic web", Springer-Verlag London Limited, 2006, ISBN-10: 1-85233-976-4.
4. David Green and Terry Bossomaier, "Online GIS and Spatial Metadata", Taylor Francis, 2002, ISBN 0-203-30605-8.

ASSESSMENT

Semester Activities/ Studies	NUMBER	WEIGHT in %
Mid-Term	1	25
Attendance	14	10
Quiz	1	5
Assignment(s)	1	10
Project	2	30

Field Studies(Technical Visits)		0	0	
Presentation/Seminar		2	20	
Practice(Laboratory, Virtual Court,Studio Studies etc.		0	0	
Other(Placement/Intership etc.)		0	0	
TOTAL		21	100	
Contribution of Semester Activities/Studies to the Final Grade			60	
Contribution of final Examination/final Project/Dissertation to the final Grade			40	
TOTAL			100	
CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME OUTCOMES				
Fakülte		Bölüm		
No	Programme Outcomes	Level of Contribut 1- lowest 5- highest		
		1	2	3
		4	5	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ECTS /STUDENT WORKLOAD				
ACTIVITIES		NUMBER	UNIT	Hour
Total WorkLoad		195		
Total Workload/ 25		7,80		
ECTS		8		
ETHICAL RULES WITH REGARD TO THE COURSE (IF AVAILABLE)				
ASSESSMENT and EVALUATION METHODS:				
Final Grades will be determined according to the Yaşar University Associate Degree, Bachelor Degree and Graduate Degree				
PREPARED BY	Assist. Prof. Dr. MURAT KOMESLİ			
UPDATED	01.06.2011 17:55:03			
APPROVED				



YÜBİS
YAŞAR UNIVERSİTESİ BELGE SİSTEMİ

**YAŞAR UNIVERSITY
FACULTY OF ENGINEERING
SOFTWARE ENGINEERING
DEPARTMENT
COURSE SYLLABUS**

Course Title	Course Code	Semester	Course Hour/Week		Local Credit	ECTS
GEOGRAPHICAL INFORMATION SYSTEMS	SENG 464	Spring	Theory 2	Practice 2	3	5
CourseType	Elective					
Language of Instruction	English					
Level of Course	Undergraduate Degree (First Cycle)					
Prerequisites Course(s) (compulsory)	None					
Special Pre-Conditions of the Course(recommended)	Basic database knowledge					
Course Coordinator						
Name Surname	Mail	Web				
Assist. Prof. Dr. MURAT KOMESLİ	murat.komesli@yasar.edu.tr					
Course Instructor(s)						
Name Surname	Mail	Web				
Assist. Prof. Dr. MURAT KOMESLİ	murat.komesli@yasar.edu.tr					
Course Assistant(s)/Tutor(s)						
Name Surname	Mail	Web				
Course Web Site						
Aim(s) of Course						
This course aims to provide a common understanding of GIS: Its meaning, usage, related terminology, and development of a GIS both web-based and stand-alone.						
Course Content						
This course provides students with both the theoretical and the practical concepts of GIS. The course requires group projects which students are going to develop application software (GIS) by utilizing Visual Basic/Map Basic languages and MapExtreme on MS Visual Studio.						
Learning Outcomes of the Course						
Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences:						
1	Describe the evolution of GIS and GIS roots.					
2	Analyze and determine maps as numbers.					
3	Identify map into the computer.					
4	Describe spatial and statistical analysis.					
5	Identify how to pick and choose a GIS.					
6	Design and implement GIS analysis.					

7	Identify future of GIS
8	Implement a stand-alone GIS
9	Implement a web-based GIS.

COURSE OUTLINE/SCHEDULE (Weekly)

Week	Topics	Preliminary Preparation	Methodology and Implementation(Theory, practice, assignment etc.)
1	Introduction to GIS: Definition, Applications		Data View Map WindowLayers
2	GIS Roots Group-1 Project Assignments		SelectionsData Files, Coding
3	Maps as Numbers		Creating Points, Searching
4	Getting the Map into the ComputerProject Groups Initial Presentations		Labeling, Buffer and OLEStructured Query Language
5	What Is Where? Basic Database Management		Using MapBasic Tools.
6	Why Is It There? Spatial and Statistical Analysis		Group Project Final Presentations/ Evaluations
7	Midterm Examination		
8	Making Maps with GIS. Project-2 Project Assignments		Using MapExtreme on MS Visual Studio
9	How to Pick a GIS: Organizational Issues		Using MapExtreme on MS Visual Studio
10	Choosing GIS: Technical Issues		Using MapExtreme on MS Visual Studio
11	GIS Analysis II, andProject-2 Initial Presentations		Using MapExtreme on MS Visual Studio
12	Standards and Access to Data		Using MapExtreme on MS Visual Studio
13	Future of GIS and its Applications		Using MapExtreme on MS Visual Studio
14	Making Maps with GIS.		Using MapExtreme on MS Visual Studio
15	Review		Group Project-2 Final Presentations/ Evaluations
16	Final Examination		

Resources

Required Course Material(s)/Reading(s)/Text Book(s)

“Getting Started with Geographic Information Systems”, K. Clarke, Prentice Hall,5th Edition, 2009. ISBN: 013-016829-7

Recommended Course Material(s)/Reading(s)/Other

“Geographic Information Systems”, C.Jones, Longman, 1998. ISBN: 0 582 04439 1

MapInfo Professional and MapXtreme User Manuals

ASSESSMENT

Semester Activities/ Studies	NUMBE	WEIGHT in %
	R	
Mid-Term	1	40
Attendance	14	10
Quiz	2	10
Assignment(s)	0	0
Project	2	20
Field Studies(Technical Visits)	0	0

Presentation/Seminar	0	0
Practice(Laboratory, Virtual Court,Studio Studies etc.	14	20
Other(Placement/Intership etc.)	0	0
TOTAL	33	100
Contribution of Semester Activities/Studies to the Final Grade		60
Contribution of final Examination/final Project/Dissertation to the final Grade		40
TOTAL		100
CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME OUTCOMES		
Fakülte	Bölüm	
FACULTY OF ENGINEERING	SOFTWARE ENGINEERING	
No	Programme Outcomes	Level of Contribut 1- lowest 5- highest
		1 2 3 4 5
1	To identify, formulate, and solve software engineering problems by applying knowledge of mathematics, science and engineering	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
2	To design and conduct scientific and engineering experiments; analyze and interpret data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
3	To identify, formulate and validate user needs and system requirements	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
4	To develop large and complex software systems as applying software engineering principles and techniques	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
5	To use modern engineering techniques for analysis and design	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
6	To recognize the importance of abstraction and modeling	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7	To use the efficient software engineering background for being able to follow up most recent developments in the field	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8	To collect data regarding the special domain of knowledge in other fields and disciplines besides the computing discipline for the purpose of supporting software development	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9	To demonstrate efficient communications in written and oral forms and work effectively individually and in teams	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10	To adopt the ethical and professional responsibility and use them in professional life	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
ECTS /STUDENT WORKLOAD		
ACTIVITIES	NUMBER	UNIT
HOURLY	HOUR	Total WorkLoad
Course Teaching Hours(14 weeks*total course hours	14	Week
Preliminary Preparation and finalizing of course notes, further self-study(ışma, pekiştirme)	14	Week
Assignment(s)	0	Number
Presentation/Seminar	0	Number
Quiz	2	Number
Mid-Term	1	Number
Project	2	Number
Field Studies(Technical Visits)	0	Number
Practice(Laboratory, Virtual Court,Studio Studies etc.	14	Number
Final Examination/ Final Project/ Dissertation andPreparation	1	Number
Other(Placement/Intership etc.)	0	Number
Total WorkLoad		126
Total Workload/ 25		5,04
ECTS		5

ETHICAL RULES WITH REGARD TO THE COURSE (IF AVAILABLE)**ASSESSMENT and EVALUATION METHODS:**

Final Grades will be determined according to the Yaşar University Associate Degree, Bachelor Degree and Graduate Degree

PREPARED BY	Assist. Prof. Dr. MURAT KOMESLİ
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UPDATED	01.06.2011 17:56:33
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APPROVED	02.06.2011 10:46:11
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