



**EASTERN MEDITERRANEAN UNIVERSITY**  
**SCHOOL OF COMPUTING AND TECHNOLOGY**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**MODULES HANDBOOK**

**Information Technology Master's Program (without Thesis)**  
**Curriculum**

<b>30 Credits</b>						
<b>95 ECTS</b>						
<b>Course Code</b>	<b>Ref. Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>ECTS</b>	<b>Category</b>	<b>Prerequisites</b>
ITEC511	3T5T1	IT Project Management	(3,0,0) 3	8	AC	-
ITEC514	3T5T2	Research Methods and Ethics in Information Technology	(3,0,0) 3	8	AC	-
REQ1	3T5T3	Area Elective I	(3,0,0) 3	8	AE	-
REQ2	3T5T4	Area Elective II	(3,0,0) 3	8	AE	-
REQ3	3T5T5	Area Elective III	(3,0,0) 3	8	AE	-
ITEC521	3T5T6	Computer Networking Applications	(3,0,0) 3	8	AC	-
ITEC513	3T5T7	Advanced Software Design and Development	(3,0,0) 3	8	AC	-
REQ4	3T5T8	Area Elective IV	(3,0,0) 3	8	AE	-
REQ5	3T5T9	Area Elective V	(3,0,0) 3	8	AE	-
REQ6	3T5TA	Area Elective VI	(3,0,0) 3	8	AE	-
ITEC599	3T5TP	Term Project	(0,0,0) 0	15	AC	-

**AC = Area Core    AE = Area Elective**



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	IT Project Management
<b>Course Code</b>	ITEC511
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Compulsory
<b>Workload</b>	240 Hours
<b>EMU Credit (Lec, Lab, Tut)</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="https://staff.emu.edu.tr/mustafailkan/en/teaching/itec511">https://staff.emu.edu.tr/mustafailkan/en/teaching/itec511</a>

<b>Instructors(s)</b>	Assoc. Prof. Dr. Mustafa Ilkan	<b>Office Tel</b>	1245
<b>e-mail</b>	Mustafa.ilkan@emu.edu.tr	<b>Office No.</b>	CT 204

<b>Course Description</b>
This course aims to provide a full understanding of the management roles, responsibilities and techniques required to successfully accomplish objectives of an information technology project.

<b>General Learning Outcomes</b>
On successful completion of this course students will have understanding of: <ul style="list-style-type: none"><li>▪ Project management importance in all industries.</li><li>▪ Project manager's role and responsibilities.</li><li>▪ Tools and methods used in managing an IT project.</li><li>▪ Awareness of essential IT standards.</li><li>▪ Team management, monitoring and controlling of project tasks, communication, time and cost planning.</li></ul>

<b>Teaching Methodology / Classroom Procedures</b>
<ul style="list-style-type: none"><li>▪ Class quizzes will be taken once in a month. The quizzes are from each chapter and are organized every month from the covered topics.</li><li>▪ Students are required to present any chapter from the course either individually or in a group. The aim is to create a collaborative medium and create discussions.</li><li>▪ Students will also be assign a technical project related to any IT project (chosen by students) e.g. system development, e-commerce we development, network implementation etc.<ul style="list-style-type: none"><li>○ Students are encouraged to use internet to search for more information.</li><li>○ Student must comply with all project management life cycle phases, standards and must use tools such as Microsoft project or excel to create a bigger picture of each and every steps, tasks assigned to each team member to complete the project.</li><li>○ The purpose to be to analyze students understanding and knowledge gained from the course as well as their capability to utilize this knowledge in the professional world.</li><li>○ Project report will be based on actual project management report format.</li><li>○ Project must be submitted before the deadline.</li></ul></li></ul>

- Final exam is conducted as a written exam that may contain multiple choice questions, true/false questions, fill in the blanks questions and essay questions.
- Make-up exam will be given after the final exams.
- Supplementary information for the course is available at <http://staff.emu.edu.tr/mustafaalkan/en/teaching/itec511>. The Web site contains class notes, class announcements, the course syllabus, exam dates, and other information for the course.

### Course Materials / Main References

**Text Book:**

Methods of IT Project Management, Jeffrey L. Brewer, Kevin C. Dittman

**Resource Books:**

1. IT Project Management, Sengage, Kathy Schwalde
2. Information Technology Project Management, 3rd Edition, John Wiley, Jack T. Marchewka
3. Information Systems Project Management, Pearson Prentice Hall, Mark A. Fuller Joseph S. Valacich Joey F. George

**Lecture Notes:**

All course materials are also available online in Adobe PDF (Portable Document Format).

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Introduction to Project Management
<b>Week 2</b>	A Systems View and Systems Methodology
<b>Week 3</b>	The Project Management Framework
<b>Week 4</b>	Project Initiation
<b>Week 5</b>	Project Scope and Human Resources Planning
<b>Week 6</b>	Project Time and Cost Planning
<b>Week 7</b>	Project Quality and Communications Planning
<b>Week 8</b>	Project Risk Management Planning
<b>Week 9</b>	Project Procurement Planning
<b>Week 10</b>	Project Execution
<b>Week 11</b>	Project Monitoring and Control
<b>Week 12</b>	Project Closure
<b>Week 13</b>	Advanced Topics in Project Management
<b>Week 14</b>	Final Exam

### Rules and Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

### Background Requirements

- Students are expected to be enrolled in Master's program.

- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

<b>Method of Assessment</b>			
<b>Evaluation and Grading</b>	<b>Quiz</b>	<b>Project / Presentation</b>	<b>Final Exam</b>
<b>Percentage</b>	20 %	40%	40%

**Grading Criteria :**

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Principles of Programming Languages
<b>Course Code</b>	ITEC512
<b>Type</b>	Full Time
<b>Semester</b>	Fall
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://lms.emu.edu.tr">http://lms.emu.edu.tr</a>

<b>Instructor(s)</b>	Asst. Prof. Dr. Hasan Oylum	<b>Office Tel</b>	+90 392 6301671
<b>E-mail</b>	hasan.oylum@emu.edu.tr	<b>Office No</b>	CT 106

**Course Description**

This course aims to introduce students to the key concepts of the software development fundamentals of programming languages. The types of programming languages including samples and the areas which they are most effective today, are going to be taught in the course. The content of the course is designed to give enough experience to the students to understand the similarities and the difference of the programming languages which are actively used today, and to select the most appropriate programming language - development environment for a specific need - project.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- Understand the syntax and semantics used in the development of programming languages.
- Differentiate the similarities and differences between different programming languages.
- Develop the solutions to real life problems using different programming languages.
- Interpret and modify program modules in different programming languages.
- Describe the significance of implementation.
- Adapt to the new languages.
- Express their ideas in terms of programming.
- Select the appropriate languages for a given problem.
- Use different programming languages.
- Understand the syntax and semantics of the programming languages.

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week.
- Class attendance is compulsory.
- Only one make-up exam will be given for the missing exams.
- Make-up exam will be given after the final exams.
- No make-up will be given for the project.
- Students are supposed to submit the assigned tasks on time.
- Home Page, <http://sct.emu.edu.tr/oylum> must frequently be visited for the course announcements, projects, etc.

### Course Materials / Main References

**Text Book:**

1. Robert W. Sebesta, Concepts of Programming Languages, 10th Edition, ISBN: 978-0-273-76910-1, Pearson Education, 2013.

**Resource Books:**

1. Allen B. Tucker, Robert E. Noonan, Programming Languages, Principles and Paradigms, Second Edition, McGraw-Hill, 2007.
2. Jan Skansholm, ADA 95 from the Beginning, Third Edition, Addison-Wesley, 1997.
3. C. Thomas Wu, an Introduction to OOP with Java, Second Edition, McGraw-Hill, 2001.

**Lecture Notes:**

Lecture notes are available on the course web site <http://sct.emu.edu.tr/oylum> (follow the button link for ITEC512)

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Introduction: Concepts of programming languages
<b>Week 2</b>	Evolution of the programming languages
<b>Week 3-4</b>	Lexical, syntax and semantics analysis
<b>Week 5-7</b>	Primary Constructs of Imperative Languages: Characteristics of Variables. (1 week) Data Types (1 week) Expressions, Assignment and Control Statements. (1 week)
<b>Week 7-8</b>	Midterm Examinations
<b>Week 9-10</b>	Primary Constructs of Imperative Languages: Subprograms and Their Implementation. (1 week) Data Abstraction Facilities. (1 week)
<b>Week 11</b>	Object Oriented Programming Languages
<b>Week 12</b>	Functional Programming Languages
<b>Week 13</b>	Logical Programming Languages
<b>Week 14-15</b>	Final Examinations

### Requirements

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

	Method of Assessment		
Evaluation and Grading	Project/Assignment	Midterm Exam	Final Exam
Percentage	35 %	30 %	35 %

**Grading Criteria :**

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Advanced Software Design and Development
<b>Course Code</b>	ITEC513
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Core
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/nazifedimililer">http://staff.emu.edu.tr/nazifedimililer</a>

<b>Instructor(s)</b>	Asst.Prof.Dr. Nazife Dimililer	<b>Office Tel</b>	+90 392 6301034
<b>E-mail</b>	nazife.dimililer@emu.edu.tr	<b>Office No</b>	CT215

**Course Description**

This course explores the practice as well as research in the field of software design and development. It builds on the knowledge and skills learnt in undergraduate Software Design and development course. The complete software design and development cycle is covered with latest methodologies and techniques including concepts such as change control, process management, and software development and testing.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- Discuss and explain central concepts and principles within selected software engineering topics.
- Discuss current research within the selected software engineering topics.
- Identify relevant research literature for the selected software engineering topics
- Work in a software development team of a realistic size
- Build a software product using software engineering principles and procedures to.

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week mainly held in the form of a seminar.
- This course will be an in-depth examination of the SWE concepts. In addition to the lectures, we will read and discuss various related research papers.
- The students will read the material posted on course website prior to class. Class participation, discussion of the readings and presentation of a research topic shall play a major role in the final grade.
- Teams of 4-5 students will work on small software design and development projects. There will be two presentations for the project. The first presentation will be performed when the OO Design is completed. The final working product will be presented and demonstrated at the end of the term. All students in the team will participate in the presentation. Students will get individual marks for the presentation and questions answered during presentation.
- Each student will choose a research topic in the field of software engineering and write a survey-paper on the topic.
- There will be one written exam in this course. It will cover all material discussed during the semester unless otherwise announced by the course instructor.

- The written exam mark, class participation, team project and research paper will be used in determining the final grade.
- Course related materials will be posted on the course web site (<http://staff.emu.edu.tr/nazifedimililer>)

### Course Materials / Main References

#### Books Used:

Roger S Pressman, Bruce R. Maxim, *Software Engineering: A Practitioner's Approach, 8/e*, McGrawHill 2015  
ISBN: 0078022126

Hans van Vliet, *Software Engineering: Principles and Practice*, 3rd Edition, Wiley 2008  
ISBN : 9780470031469

Ian Sommerville, *Software Engineering , 10th Edition*, Pearson 2016  
ISBN-13: 9780133943030

#### Lecture Notes:

Lecture notes are available on the course web site.

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Intro to Software Design and Development methodologies/Software Lifecycle,
<b>Week 2</b>	Requirements Engineering
<b>Week 3</b>	OO Design and Development
<b>Week 4</b>	Project Presentations
<b>Week 5</b>	Software Architecture
<b>Week 6</b>	UI Design, People and Team Management
<b>Week 7-8</b>	Verification/Validation, Testing Strategies
<b>Week 9</b>	Maintenance and Reengineering
<b>Week 10</b>	Component Based Software Engineering
<b>Week 11</b>	Service-Orientatation and Cloud Computing
<b>Week 12</b>	Search Based Software Engineering
<b>Week 13</b>	Aspect-oriented Software Development
<b>Week 14</b>	Configuration Management
<b>Week 15</b>	Project presentations
<b>Week 16-18</b>	Exam Week

### Rules and Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

### Background Requirements



- Students are expected to have taken a software engineering or software development or system analysis and design course at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

	Method of Assessment				
Evaluation and Grading	<b>Term Project</b>	<b>Presentation</b>	<b>Survey-Paper</b>	<b>Class Participation</b>	<b>Final Exam</b>
Percentage	20 %	10%	20 %	10%	40 %

Grading Criteria *											
<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>	<b>C+</b>	<b>C</b>	<b>C-</b>	<b>D+</b>	<b>D</b>	<b>D-</b>	<b>F</b>
90 -100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 – 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Research Methods and Ethics in Information Technology
<b>Course Code</b>	ITEC514
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Core
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/emreozen/en/teaching/itec514">http://staff.emu.edu.tr/emreozen/en/teaching/itec514</a>

<b>Instructor(s)</b>	Asst. Prof. Dr. Emre Özen	<b>Office Tel</b>	+90 392 6301358
<b>E-mail</b>	emre.ozen@emu.edu.tr	<b>Office No</b>	CT102

**Course Description**

Participants will learn the steps of conducting a research within the context of Information Technology. Research process starting from the formalization of problem, review of literature, theorizing, methodologies like qualitative, quantitative and mixed method approaches will be discussed. Writing strategies, co-authorship and role of ethics in research will also be among the topics covered.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- know the true nature of research in academic settings
- know how to choose and refine a research problem.
- conduct a literature review and understand how it can serve during the planning of a research project
- compare quantitative and qualitative research methods
- explain internal and external validity of a research
- know how to manage ethical issues related to protection from harm, voluntary and informed participation, right to privacy, and honesty with professional colleagues.
- describe general characteristics and purposes of observation studies, correlational research, development designs and survey research
- understand and recognize the examples of Experimental, Quasi-Experimental and Ex-post Facto designs
- identify situations in which mixed-methods designs are especially useful
- describe common sources of biases in a research
- plan and prepare a final research report

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week.
- Class attendance is compulsory.
- Only one make-up exam will be given for the missing exams.

- Make-up exam will be given after the final exams.
- No make-up will be given for the project.
- Students are supposed to submit the assigned tasks on time.
- Course related materials will be posted on the course web site.
- Presentation of topics by the instructor, followed by class discussion.
- Work on individual projects: research on a selected topic by the students: writing a paper and presenting in class via following strictly the rules discussed among the semester.
- Work on individual projects: Term project proposals will be prepared for ITEC599.
- Final exam will be conducted as a written exam that contains essay questions.

### Course Materials / Main References

#### Text Book:

Paul D. Leedy, Jeanne Ellis Ormrod, "Practical Research Planning and Design" 11th edition, Pearson Education, 2015. ISBN: 978-1-292-07689-8

Kenneth S. Bordens, Bruce B. Abbott, "Research Design and Methods A Process Approach", 9th edition, McGraw-hill Education, 2014. ISBN: 978-0-07-8035456

#### Reference Books:

•Gate T. Wang, Keumjae Park, "Research and Report Writing: From topic selection to the complete paper", John Wiley & Sons, 2016. ISBN:978-111-8963913

James D. Lester, "Writing Research Papers A Complete Guide", 15th edition, Pearson Education, 2016. ISBN:978-1-292-07689-8

Sharon M. Ravitch, Nicole M. Carl, "Qualitative Research Bridging The Conceptual, Theoretical and Methodological", Sage Publication, 2016. ISBN:978-1-4833-5174-2

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	What research is, philosophical assumptions underlying research methodologies, tools of research.
<b>Week 2</b>	Finding research project, identifying and describing the research problem, dividing the research problem into sub-problems.
<b>Week 3</b>	How to organize literature review, understanding when to quit.
<b>Week 4</b>	Research planning and methodologies, Quantitative and Qualitative approaches.
<b>Week 5</b>	Ethical Issues.
<b>Week 6</b>	How to write a project proposal.
<b>Week 7-8</b>	Midterm Examinations
<b>Week 9</b>	Quantitative research.
<b>Week 10</b>	Experimental, Quasi-Experimental, and Ex Post Facto Designs.
<b>Week 11</b>	Quantitative data analysis.
<b>Week 12</b>	Qualitative research.
<b>Week 13</b>	Qualitative data analysis.
<b>Week 14</b>	Mixed Method designs.
<b>Week 15</b>	Planning and preparing a final research report.
<b>Week 16-18</b>	Final Examinations

### Rules & Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

#### Background Requirement

- Students are expected to have a basic knowledge about what research & research tools is at minimum undergraduate level.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

	Method of Assessment		
Evaluation and Grading	Project	Midterm Exam	Final Exam
Percentage	40 %	-	60 %

#### Grading Criteria \*

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 -100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 - 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**SCHOOL OF COMPUTING AND TECHNOLOGY**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Computer Networking Applications
<b>Course Code</b>	ITEC521
<b>Type</b>	Full Time
<b>Semester</b>	Spring
<b>Category</b>	Area Core
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Online Lectures per week
<b>ECTS Credit</b>	8 <a href="#">What is ECTS? Why ECTS is needed? How does it work?</a>
<b>Workload</b>	240 Hours
<b>Course Web Site</b>	<a href="http://lms.emu.edu.tr">http://lms.emu.edu.tr</a>

<b>Instructor</b>	Assist. Prof. Dr. Hüsnü Bayramoğlu	<b>Office Tel</b>	+90 392 6302894
<b>E-mail</b>	husnu.bayramoglu@emu.edu.tr	<b>Office No</b>	CT 103

#### Course Description

The main aim of this course is to familiarize students with advanced topics on the newest wired networking technologies with a special emphasis on networking applications. It provides an in-depth introduction to a wide range of topics in the field of computer networks including the Internet. Rather than explain how protocols work in the abstract, the most important protocols are defined to discuss how networks work in practice. This allows to include real-world experiences in the discussion. Topics covered include network protocols, Internet routing, peer to peer networks, network security, congestion control, error detection & correction, and internetworking. It focuses both on the existing technologies and new trends or changes in fundamentals, to derive a set of requirements that a useful network must meet.

#### General Learning Outcomes

On successful completion of this course, students will be able to:

- explain fundamentals of network protocols and architectures
- discuss the most important protocols used in Internet today
- discuss various types of applications layer protocols for most used applications
- explain reliable data transfer over packet switched networks
- explain how error and flow control is implemented in Internet today
- discuss the use of Internet Protocol as the delivery mechanism at the network layer
- list different techniques to detect transmission errors
- explain the layered architecture behind the Internet
- explain how data is encoded and transmitted on a physical link
- explain the security issues, network vulnerabilities and security measures

#### Teaching Methodology / Classroom Procedures

- The course has three hours of online lectures in a week.
- There is no lab works or tutorials.
- There is one online midterm exam and one online final exam.
- Chapters included in the exams will be posted on the course web site during the semester.
- There is an individual term project.
  - You should find a recent conference/journal paper, published in the last 3 years, related to Computer Networking Applications.

- The selected paper should be sent as an e-mail to [husnu.bayramoglu@emu.edu.tr](mailto:husnu.bayramoglu@emu.edu.tr) for confirmation.
- Once the topic is confirmed, you can start studying on the topic, do a research and prepare a report.
- The report should be between 3500-4000 words with the format provided on the course web site.
- Turnitin plagiarism test result must be obtained before the final submission.
- An account will be created for you to make the plagiarism test through Turnitin.
- The plagiarism test result must be less than 20%.
- No reports are accepted for grading with higher plagiarism test results.
- The deadline for submitting the report will be posted on the course web site.
- Late submissions will not be accepted.
- Project grade is out of 20%.
- The work done for the project should be presented according to the schedule posted on the course web site.
- The duration of the presentation is about 10-15 minutes for each student.
- Presentation grade is out of 10%.
- Class attendance is compulsory.
- Lecture notes are available on the course web site.

### Course Materials / Main References

**Text Book:**

James F. Kurose and Keith W. Ross., Computer Networking: A Top-Down Approach, 7<sup>th</sup> Ed. (2016), Pearson, ISBN: 978-0133594140.

### Weekly Schedule / Summary of Topic

<b>Week 1</b>	Overview on Computer Networks: The Network Edge, The Network Core, Delay, Loss, and Throughput in Packet-Switched Networks
<b>Week 2</b>	Application Layer: The Web and HTTP, FTP, SMTP, DNS, Peer-to-Peer Applications
<b>Week 3-4</b>	Transport Layer: Multiplexing and Demultiplexing, UDP, TCP, SCTP, Congestion Control
<b>Week 5-6</b>	Network Layer: Virtual Circuit and Datagram Networks, Forwarding and Routing, IPv4, IPv6, Inside a Router
<b>Week 7</b>	Network Layer: Routing Algorithms, OSPF, BGP, ICMP, Multicast Routing, DHCP
<b>Week 8-9</b>	<b>Midterm Examinations</b>
<b>Week 10-11</b>	The Link Layer: Error Detection and Correction Techniques, Multiple Access Links and Protocols, Link Layer Addressing and ARP
<b>Week 12-13</b>	Security in Computer Networks: Principles of Cryptography, VPN, Securing E-mails, Securing TCP Connections: SSL, Securing Wireless LANs: WEP
<b>Week 14-15</b>	Term Project Presentations
<b>Week 16-17</b>	<b>Final Examinations</b>

### Rules and Obligations

- Each student can have only one make-up exam.
- One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and covers all the topics.
- Once the grades are announced, the students have only one week to do objection about their grades.
- Students who fail to attend the lectures regularly may be given NG grade.
- The student is responsible to check the course web site regularly and view the latest announcements.

### Background Requirements

- Students are expected to have a networking background at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

### Method of Assessment

<b>Evaluation and Grading</b>	<b>Term Project</b>	<b>Midterm Exam</b>	<b>Final Exam</b>
Percentage	30 %	30 %	40 %

<b>Grading Criteria *</b>											
<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>	<b>C+</b>	<b>C</b>	<b>C-</b>	<b>D+</b>	<b>D</b>	<b>D-</b>	<b>F</b>
90 - 100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 - 39

\* Letter grades will be decided after calculating the class average at the end of the semester and distribution of the grades will play a significant role in the evaluation.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Computer Security and Cryptography
<b>Course Code</b>	ITEC540
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://lms.emu.edu.tr/">http://lms.emu.edu.tr/</a>

<b>Instructor(s)</b>	Asst.Prof.Dr. Mustafa T. Babagil	<b>Office Tel</b>	+90 392 6302885
<b>E-mail</b>	mustafa.babagil@emu.edu.tr	<b>Office No</b>	CT116

**Course Description**

The course introduces fundamental principles and concepts in computer security and teaches cryptography as a leveraging tool for building secure computer systems. Topics on cryptography include simple ciphers, both symmetric and asymmetric encryption, hash functions, message authentication codes and digital signatures. Other main computer security issues such as authentication, access control, operating system security and secure programming are also given. Security standards are briefly presented.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- Discuss and explain meaning of secure computer systems.
- Discuss and learn how cryptography is effective on secure computer systems.
- Explain both symmetric and asymmetric encryption, hash functions.
- Understand message authentication codes and digital signatures.
- Understand main computer security issues such as authentication, access control, operating system security and secure programming briefly.
- Explain briefly the Security standards.

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week mainly held in the form of a seminar.
- The students will read the material posted on course website prior to class. Class participation, discussion of the readings and presentation of a research topic shall play a major role in the final grade.
- Students will have a presentation subject related on cryptography or computer security.
- Each student will choose a research topic in the field of cryptography and write a survey-paper on the topic.
- There will be one written exam in this course. The written exam mark, class participation, team project and research paper will be used in determining the final grade.
- Course related materials will be posted on the course web site (<http://lms.emu.edu.tr/>)

**Course Materials / Main References**



**Books Used:**

Cryptography and Network Security, William Stallings, 6<sup>th</sup> Edition, Pearson Education, 2013.

**Lecture Notes:**

Lecture notes are available on the course web site.

**Weekly Schedule / Summary of Topics**

<b>Weekly Schedule / Summary of Topics</b>	
<b>Week 1</b>	Fundamental concepts in computer security
<b>Week 2</b>	Computer and Network Security-Part 1
<b>Week 3</b>	Introduction to terminology.
<b>Week 4</b>	Cryptography
<b>Week 5</b>	Classical Encryption techniques - Substitution Techniques
<b>Week 6</b>	Caesar cipher (or) shift cipher - Playfair cipher Vigenere cipher - One Time Pad Cipher definition
<b>Week 7</b>	Transposition Techniques -Row Transposition Technique
<b>Week 8-9</b>	Midterm Exams weeks
<b>Week 10</b>	Feistel cipher structure - Block cipher principles
<b>Week 11</b>	Computer security - authentication, access control briefly
<b>Week 12</b>	Computer Security - operating system security and secure programming briefly
<b>Week 13</b>	Hash Functions definition
<b>Week 14</b>	Presentations and submissions of Term Project
<b>Week 15</b>	Presentations and submissions of Term Project
<b>Week 16-18</b>	Exam Week

### Requirements

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

	Method of Assessment			
Evaluation and Grading	<b>**Term Project</b>	<b>Home Works</b>	<b>Class Participation</b>	<b>Final Exam</b>
Percentage	10+10+10 = 30 %	20 %	10 %	40 %

### Grading Criteria \*

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 -100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 – 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.

\*\* Term project will have to be submitted as a REPORT word document + PRESENTATION file (power point) + PRESENTATION in class.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Information Technology and Instruction
<b>Course Code</b>	ITEC542
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://www.emu.edu.tr/bsonyel/course3.html">http://www.emu.edu.tr/bsonyel/course3.html</a>

<b>Instructor(s)</b>	Asst.Prof.Dr. Bengi Sonyel	<b>Office Tel</b>	+90 392 6302390
<b>E-mail</b>	bengi.sonyel@emu.edu.tr	<b>Office No</b>	Old Student affairs building 1 <sup>st</sup> floor

**Course Description**

Basic concepts related to instruction, principles of learning and instruction, the importance and utilities of planned steps in instruction, planning instruction (yearly, weekly lesson plans), learning and instruction strategies, instructional methods and techniques, making a linkage between these methods, techniques and the practice, instructional materials, the roles and responsibilities of the teachers in enhancing the quality of instruction, competencies of teacher in relation with instructional design and information technology; introducing instructional technology, application of instructional technology; evaluation of instructional technology; designing and implementation of instructional materials.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- identify with the basic concepts related to instruction.
- identify with the principles of learning and instruction, instructional strategies, methods and techniques.
- identify with the cognitive and behavioral approaches to teaching
- name some important cognitive and behavioral approaches to teaching in instructional technology
- discuss the purposes, characteristics, advantages and limitations of instructional methods, strategies and techniques.
- compare and contrast the purposes, characteristics, advantages and limitations of instructional methods, strategies and techniques in instructional technology
- evaluate the purposes, characteristics, advantages and limitations of instructional methods, strategies and techniques.
- develop a personal and individualized understanding towards instructional approaches, methods techniques and strategies in instructional technology and teaching.

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week.
- Students learn by doing in group activities.

- Students construct their own knowledge through the guidance of the instructor.
- Theoretical information is given to the students through group works or presentations.
- Class attendance is compulsory.
- Only one make-up exam will be given for the missing exams at the end of the semester.
- No make-ups will be given for the whole class activities.

### Course Materials / Main References

**Text Book:**

Instructional Technology and Media for Learning (5th ed) (2005) Smaldino, S.E. ; Russell J.D. ; Heinich, R. and Molenda, M. Prentice Hall, Inc. A Simon & Schuster Company, Englewood Cliffs, New Jersey.

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Meeting the students and overview of the course and Introduction to the basic concepts related to instruction
<b>Week 2</b>	Technology, Media, and Learning
<b>Week 3</b>	Technology, Media, and Learning
<b>Week 4</b>	Instructional Systems
<b>Week 5</b>	Instructional Systems
<b>Week 6</b>	The Assure Model: Creating the Learning Experience
<b>Week 7</b>	The Assure Model: Creating the Learning Experience
<b>Week 8</b>	<i>Mid-term Examination</i> <i>Discussion of exam questions</i>
<b>Week 9</b>	Visual Principles
<b>Week 10</b>	Visual Principles
<b>Week 11</b>	Online Learning
<b>Week 12</b>	Online Learning
<b>Week 13</b>	Instructional Materials and Displays
<b>Week 14</b>	Instructional Materials and Displays
<b>Week 15</b>	<i>Final Examination</i>

### Requirements

Students are required to:

- read about the subject that will be studied in class before coming to class,
- participate actively in the discussions and tasks,
- attend at least 80% of class hours in the semester.

### Method of Assessment

Evaluation and Grading	Class Reflection and Tasks	Midterm I	Midterm II	Final Exam
Percentage	15%	25 %	20 %	40 %

<b>Grading Criteria :</b>	90-100 = A	75-79 = B	60-64 = C	50-52= D
	85-89 = A-	70-74 = B-	56-59 = C-	40-49=D-
	80-84 = B+	65-69 = C+	53-55= D+	00-39= F
				I = incomplete

Not attending to the classes or applying the course requirements= NG

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For theoretical courses the required participation is 70% and for practical courses 80%. Students below these ranges will be given NG. Students who take NG are not allowed to sit for final and re-sit exams. Health reports are not valid for attendance.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Data Gathering & Recovery In Computer Systems
<b>Course Code</b>	ITEC543
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/husnubayramoglu">http://staff.emu.edu.tr/husnubayramoglu</a>

<b>Instructor(s)</b>	Asst.Prof.Dr. Hüsnu Bayramoğlu	<b>Office Tel</b>	+90 392 6302894
<b>E-mail</b>	husnu.bayramoglu@emu.edu.tr	<b>Office No</b>	CT100

#### Course Description

Data gathering and recovery in computer systems often involves a process of search and discovery of data. The process of search and discovery involves the analysis of data storage and communication systems. The analysis of data storage includes the retrieve of the deleted data in computer systems and constructs evidences of past actions.

Good backup and recovery strategies are key to the health of any organization. Designing realistic recovery solutions is very important. Medium- to very-large-scale systems administrators have to protect large amounts of critical data as well as design backup solutions that are scalable and optimized to meet changing conditions. The main of this course focuses on the implementation of 21st century architectures that provides the framework for meeting the requirements of data protection for the organization.

Continuous data protection and remote replication strategies are also addressed as they are integrated within backup strategies.

#### General Learning Outcomes

On successful completion of this course students should be able to:

- Describe the elements of a backup environment and applications of those elements
- Discuss new technologies within the backup technology area and their impact on design
- Identify combinations of both hardware and software configurations that are scalable from small to large environments
- Discuss designs that address physical and virtual backup environments
- Describe new media technologies
- Report requirements that will assist in maintaining application backup strategies
- Identify sample backup environments
- Have the necessary knowledge of related research literature

#### Teaching Methodology / Classroom Procedures

- The course has three hours of lectures in a week mainly held in the form of a seminar.

- There is no lab works or tutorials.
- There will be one written midterm exam and one written final exam.
- The exams are conducted as a written exam that may contain multiple choice, fill in the blanks, short answer and writing essay questions.
- There is an individual term project.
  - You should find a recent conference/journal paper (published in the last 5 years) related to Data Backup and Recovery in Computer Systems.
  - The selected paper should be sent as an e-mail to husnu.bayramoglu@emu.edu.tr and wait for the confirmation.
  - Once the topic is confirmed, you can start studying the topic and prepare a written report.
  - The printed report should be submitted before the announced deadline.
  - Late submissions will not be accepted.
  - Project grade is out of 20%.
  - The report should be between 3500-4000 words with the format provided in the report template on the web site.
  - Turnitin plagiarism test must be obtained before submission.
  - The plagiarism test result should be less than 20%.
  - No reports will be accepted for consideration with higher plagiarism test result.
  - An account will be created for you to make the plagiarism test through Turnitin.
  - The work done for the project should be presented.
  - The duration will be about 15 minutes for each student.
  - Presentation grade is out of 10%.
- Class attendance is compulsory.
- Course related materials will be posted on the course web site.

#### Course Materials / Main References

**Text Book:**

Steven Nelson, *Pro Data Backup and Recovery-Expert's Voice in Data Management*, Apress, 2011, ISBN-13: 978-1430226628

**Lecture Notes:**

Lecture notes are available on the course web site in PDF format.

#### Weekly Schedule / Summary of Topics

Weekly Schedule / Summary of Topics	
<b>Week 1</b>	Distinction Between Backup and Archive
<b>Week 2</b>	Backup Softwares: Commvault Simpana and Symantec BackupBackup
<b>Week 3</b>	Physical Backup Media: Tape Characteristics, RAID Implementations, Network Attached Storage
<b>Week 4</b>	Virtual Backup Media: Virtual Tape Libraries, Storage Virtualization
<b>Week 5</b>	New Media Technologies: Deduplication Techniques, Continuous Remote Replication, Cloud Storage
<b>Week 6</b>	Storage Policies for CommVault Simpana
<b>Week 7-8</b>	Midterm Exams
<b>Week 9</b>	Storage Policies for Symantec NetBackup
<b>Week 10-11</b>	Application Backup Strategies: File systems, Databases, Mail Servers
<b>Week 12</b>	Putting It All Together: Sample Backup Environments
<b>Week 13</b>	Remote Office Deployments
<b>Week 14</b>	Presentations for Term Projects
<b>Week 15</b>	Presentations for Term Projects
<b>Week 16-18</b>	Final Examinations

### Rules and Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

### Background Requirements

- Students are expected to have a basic computer hardware/software knowledge at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

	Method of Assessment		
Evaluation and Grading	<b>Term Project</b>	<b>Midterm Exam</b>	<b>Final Exam</b>
Percentage	30 %	30 %	40 %

### Grading Criteria \*

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 -100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 – 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.





**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Text Mining
<b>Course Code</b>	ITEC547
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/nazife.dimililer/itec547">http:// staff.emu.edu.tr/nazife.dimililer/itec547</a>

<b>Instructor(s)</b>	Asst.Prof.Dr. Nazife Dimililer	<b>Office Tel</b>	+90 392 6301034
<b>E-mail</b>	nazife.dimililer@emu.edu.tr	<b>Office No</b>	CT215

**Course Description**

This course presents a discussion of the development of NLP applications in the text mining/information extraction area from theoretical and practical perspectives. Machine learning architectures are applied to NLP text to mine required information. Topics discussed include overview of the nature of unstructured and semi-structured text, text classification, feature extraction, feature selection, evaluation of classification, tokenization, stemming, lemmatization, parsing, derivation of linguistic features, text categorization, text clustering, concept /entity extraction, sentiment analysis, document summarization, question answering. Machine language algorithms, probabilistic models, rule based models.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- Describe need and use for text mining
- Discuss the current text mining approaches and applications
- Design and implement text mining applications

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week.
- Topics will be covered during lecture hours.
- Research papers will be assigned as reading assignments and students are expected to read the papers and participate in discussions on these papers.
- One individual project will be assigned to each student to implement a small scale text mining solution based on a published research paper. The student will write a short report on the results and compare with published work. The results will be presented in class.
- Class attendance is compulsory.
- Both midterm and Final exam will be classical type.
- Assignments will mainly focus on writing text processing/cleansing programs.
- Only one make-up exam will be given for the missing exams.
- Make-up exam will be given after the final exams. No make-up will be given for the project.

- Students are supposed to submit the assigned tasks on time.
- Course related materials will be posted on the course web site (<http://staff.emu.edu.tr/nazife.dimililer/itec582>).

### Course Materials / Main References

This course does not use a traditional textbook. Instead, you will be reading from different websites, articles and e-books. The following books will be utilized throughout the semester

1. Data Mining, Iam H. Witten, Eibe Frank, Mark A. Hall, Morgan Kaufman
2. Modern Information Retrieval, Ricardo Baeza-Yates, Berthier Riberio-Neto, Addison-Wesley
3. Introduction to Information Retrieval by Christopher D. Manning, Prabhakar Raghavan and Hinrich Schutze . (available online).
4. Text Mining : Applications and Theory, M. W. Berry, J. Kogan, Wiley Press (e-book available)
5. Survey of Text Mining, Clustering, Classification, and Retrieval, Michael W. Berry (editor), Springer
6. Speech and Language Processing, DANIEL Jurafsky, James H. Martin, Prentice Hall

#### Lecture Notes:

Lecture notes are available on the course web site.

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Introduction, Overview of KDD, Data Mining, Text Mining, Natural Language Processing, Machine Learning.
<b>Week 2-3</b>	Exploring Text: tokenization, stemming, base words, patterns in Words and Letters, word-meaning, indexing document text
<b>Week 4-5</b>	Markov Models and POS tagging: HMM, POS taggers
<b>Week 6-7</b>	Machine learning
<b>Week 8</b>	Information Extraction
<b>Week 9</b>	Search Engines, Searching the Web
<b>Week 10-11</b>	Clustering Documents; Clustering Partitioning, Hierarchical, Agglomerative, Divisive, Grid based, Model based
<b>Week 12</b>	Text categorization/spam filtering
<b>Week 13-14</b>	Summarization , Question and Answer
<b>Week 15-17</b>	Selected topics/Paper discussion (Paper Discussion will be scheduled after Machine learning topics according to the main subject of the selected papers)
<b>Week 18</b>	Project Presentations

### Requirements

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

### Background Requirements

- Students are expected to have minimum undergraduate level programming background preferably in python

### Method of Assessment

Evaluation and Grading	<b>Assignments</b>	<b>Project/Presentation</b>	<b>Midterm Exam</b>	<b>Final Exam</b>
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Percentage	10%	25 %	30 %	35 %
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**Grading Criteria :**

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**SCHOOL OF COMPUTING AND TECHNOLOGY**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Computer Based Forecasting Related Data Analysis
<b>Course Code</b>	ITEC548
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	AE (Area Elective)
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/mustafababagil">http://staff.emu.edu.tr/mustafababagil</a>

<b>Instructor(s)</b>	Asst. Prof. Dr. Mustafa T. Babagil	<b>Office Tel</b>	+90 392 6302885 +90 392 6302870
<b>E-mail</b>	mustafa.babagil@emu.edu.tr	<b>Office No</b>	CT 123E

#### Course Description

In academic fields, data analysis is often important to verify that any collected data is biased or not. There are simple mathematical techniques to be applied easily on the collected data before being used. On a set of collected quantitative data, some simple mathematical tests should be applied to decide if the set of data has a correlation or not. This could be done via mathematics or using application programs such as Excel or SPSS. This course also includes some forecasting techniques which can be used with any unbiased set of data. This course is important especially for those who need to prepare questionnaires in their research fields. It is important to test any set of data which will be used in a research done by computers and application programs. Also, to write conference or journal papers using the studies in the course projects and master graduation project, the importance of the course is obvious.

#### General Learning Outcomes

On successful completion of this course students should be able to:

- Handle data for meaningful analysis.
- Analyze data to find out correlation coefficient to comment on gathered data.
- Analyze to understand if the data is biased or unbiased.
- Test and understand hypothesis. (What is Null hypothesis or how to accept or reject an hypothesis)
- Learn about regression analysis. (Linear Regression, Parabolic Regression (only definitions), Exponential Regression(only definitions) )
- Use the results in analysis to make predictions about future on the analyzed data. Simple forecasting
- Prepare their term projects according to ethical issues which will be specified clearly and neatly.

#### Teaching Methodology / Classroom Procedures

- The course has three hours of lectures in a week mainly held in the form of a seminar. Experimental data sets available to be analyzed to explain the related topics.
- There is one hour tutorial session per week which is organized for solving questions related to lectures and encourages students to voice their difficulties about solving these questions.

- Lecture notes and tutorials are posted via email and on the course web site.
- There are two written quizzes which are held one week before the midterm and final exam periods.
  - Quiz 1. (before first midterm)
  - Quiz 2. (before final exam)
  - The duration of the quizzes is 45 mins - 90 mins.
- There is a written-practical midterm exam using computers to analyze given data sets.
- There is a final exam (completely practical on computer, by using either SPSS or Excel) based on the term project given to students and students should have enough practical background based on term project so that they could do the similar analysis during the exam with different data set given.
- There will be term project. An analysis will be done according to different data set given each student individually and after analyzing the given data set according to the topics learnt, a presentation will be expected to finalize the projects results.
- Class attendance is compulsory.
- The student is responsible to check the course web site regularly and view the latest announcements. Also mails are important to follow sent by instructor during the whole semester.

### Course Materials / Main References

**Text Book:**

No Textbook. Lecture notes are prepared and will be refreshed every semester.

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Understanding data and how to use data as pairs.
<b>Week 2</b>	Correlation analysis of data (by using a software, Excel or SPSS)
<b>Week 3</b>	Correlation analysis of data (by using a software, Excel or SPSS), Use data to represent graphics (plot data pairs on coordinate axis)
<b>Week 4</b>	Analyzing correlation type by calculating a correlation coefficient (by using a software, Excel or SPSS), Table test to Correlation coefficient. t-test for Correlation Coefficient.
<b>Week 5</b>	t-test for Correlation Coefficient, Linear Regression via Excel, Understanding error in regression. Hypothesis Testing.
<b>Week 6</b>	Linear Regression via Excel, Residuals (errors), Using Regression Line (in Predictions, forecasting)
<b>Week 7</b>	Prediction Intervals, Total deviation, explained deviation, unexplained deviation. (via Excel or SPSS), ANOVA, Significance test
<b>Week 8-9</b>	<b>Midterm Examinations</b>
<b>Week 10</b>	Multiple regressions. Definitions and simple application. Time Series analysis and predictions on the data set.
<b>Week 11</b>	Preparing a proposal to a specific research to apply learnt aspects. (students will present their proposal)
<b>Week 12</b>	Presenting the collected and analyzed data. (students will present briefly)
<b>Week 13</b>	Documentation of the research done.(students should submit their documentation, as soft and hard copy)
<b>Week 14</b>	Preparing forecast on the research done and present the work done.
<b>Week 15</b>	Completing the research and prepare a conference paper. (Optional for each student. ** )
<b>Week 16-18</b>	<b>Final Examinations</b>

### Requirements

- Each student can have only one make-up exam.
- One who misses an exam should provide a medical report or a valid excuse within 3 days after the missed exam.

- The make-up exam is done at the end of the term and covers all the topics.
- No make-up exam is given for the quizzes or term project.
- Students who fail to attend the lectures regularly may be given NG grade.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site and mails sent by instructor during the semester.

#### Background Requirements

- Students are expected to have a mathematical (basic mathematics) background at minimum undergraduate level for registering the course. No need to have a background related to SPSS.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

#### Method of Assessment

Evaluation and Grading	2 Quizzes	Term Project	Midterm Exam	Final Exam
<b>Percentage</b>	20 %	%20	30 %	30 % **

\*\* If the term project **have an acceptance to a related** conference then a student **do not need to sit for** the Final Exam.

#### Grading Criteria \*

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 -100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 – 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.



**EASTERN MEDITERRANEAN UNIVERSITY  
MASTER OF TECHNOLOGY  
COURSE POLICY SHEET**

<b>Course Title</b>	Neural Computations
<b>Course Code</b>	ITEC560
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Core
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://sct.emu.edu.tr/mtit/itec560">http://sct.emu.edu.tr/mtit/itec560</a>

<b>Instructor(s)</b>	Assoc. Prof. Dr. Ahmet Rizaner	<b>Office Tel</b>	+90 392 6302480
<b>E-mail</b>	Ahmet.rizaner@emu.edu.tr	<b>Office No</b>	CT112

<b>Course Description</b>
This course introduces the basic concepts and techniques of neural computation, and cover basic neural network architectures and learning algorithms, for applications in pattern recognition, image processing, and computer vision. This course also provides practical experience of designing and implementing a neural network for a real world application.

<b>General Learning Outcomes</b>
On successful completion of this course students should be able to: <ul style="list-style-type: none"><li>• Describe what a neural network is;</li><li>• Describe the relation between real brains and simple artificial neural network models;</li><li>• Discuss the main factors involved in achieving good learning and generalization performance in neural network systems;</li><li>• Identify the main implementation issues for common neural network systems;</li><li>• Evaluate the practical considerations in applying neural networks to real classification problems.</li></ul>

<b>Teaching Methodology / Classroom Procedures</b>
<ul style="list-style-type: none"><li>• The course has three hours of lectures in a week.</li><li>• A small, focused project will be done over an approximately one-month period at the end of the semester. Students will form groups of 1, 2 or 3 by self-organization.</li><li>• The purpose of the project is to enable the students to get some hands-on experience in the design, implementation and evaluation of neural network algorithms by applying them to real-world problems. The project will be an implementation / examination of some particular aspect of a neural network algorithm, or it will show the application of an algorithm on a particular problem.</li><li>• Projects will be presented to the class. The presentation will be approximately 10-15 minutes, with 5 minutes left over for question-and-answer from the class. Slides made in a commonly used format (i.e. PowerPoint) can be used.</li><li>• Each student is expected to attend all presentations.</li></ul>

- An electronic copy of the Project Presentation should also be submitted.
- A take home final exam will be given to the students at the end of the semester containing practical questions.
- You must download your Take Home Exam within the designated time period.
- You should submit a 1-2 page long proposal that describes the problem you would like to tackle, objective of the study, proposed algorithms, hardware/software tools and data that you plan to utilize, and evaluation strategies that you plan to use.
- You should get prior approval before starting your project.
- You are free to use any programming language or toolbox but Matlab is strongly recommended.
- You can write the codes yourself or use any code that is available in the public domain. In case you use somebody else's code, you are required to properly cite its source and know the details of the algorithms that the code implements.
- Course related materials will be posted on the course web site (<https://staff.emu.edu.tr/ahmetrizaner/en/Pages/ITEC560.aspx>).

### Course Materials / Main References

**Text Book:**

*Neural Networks and Learning Machines (3rd Edition), Simon S. Haykin, Upper Saddle River: Pearson Education, 2009, ISBN-13:978-0-13-147139-9.*

**Resource Books:**

1. *Fundamentals of Neural Networks: Architectures, Algorithms and Applications, Laurene V. Fausett, Prentice-Hall, Inc. Upper Saddle River, 1994, ISBN:0-13-334186-0.*
2. *The Essence of Neural Networks (Essence of Computing), Robert Callan, Prentice Hall PTR, 1994, ISBN:013908732X.*

**Lecture Notes:**

Lecture notes are available on the course web site in PDF format.

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Introduction
<b>Week 2</b>	Perceptron
<b>Week 3</b>	Multilayer Perceptron
<b>Week 4</b>	Multilayer Perceptron
<b>Week 5</b>	Associative Memory Neural Network
<b>Week 6</b>	Associative Memory Neural Network
<b>Week 7-8</b>	Midterm Examinations
<b>Week 9</b>	Iterative Associative Memory Neural Network
<b>Week 10</b>	Radial Basis Function (RBF) Networks
<b>Week 11</b>	Self-Organizing Future Maps
<b>Week 12</b>	Self-Organizing Future Maps
<b>Week 13</b>	Support Vector Machines
<b>Week 14-15</b>	Final Examinations

### Rules and Requirements

- Each student can have only one make-up exam.
- One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up exam will be given for any project or assignment.



- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.
- Students are supposed to submit the assigned tasks on time.

### Background Requirements

- Some programming capability is essential. Some open-source neural network design software is available for download from various websites. Familiarity with MATLAB is also desirable.
- Some basic mathematics using matrix algebra will be used in this course. There will be some review of the necessary material.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

Evaluation and Grading	Method of Assessment		
	Assignments	Projects*	Final Exam
Percentage	35%	25 %	40 %

\*Proposal %5, Documentation/Report %10, Presentation 10%.

### Grading Criteria :

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Mobile Ad Hoc Networks
<b>Course Code</b>	ITEC578
<b>Type</b>	Full Time
<b>Semester</b>	2014-15 Fall
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/emreozen/en/itec578">http:// staff.emu.edu.tr/emreozen/en /itec578</a>

<b>Instructor(s)</b>	Asst. Prof. Dr. Emre Özen	<b>Office Tel</b>	+90 392 6301358
<b>E-mail</b>	emre.ozen@emu.edu.tr	<b>Office No</b>	CT108

#### Course Description

An ad hoc network is an infrastructure-less wireless network that can be formed spontaneously. These networks are mainly used by researchers, emergency services and military. A mobile ad-hoc network (MANET), is a type of ad hoc network that can change locations and configure itself spontaneously. On a MANET mobile devices communicate directly with one another. MAC layer protocols, routing protocols, multicast routing protocols, transport layer routing protocols, energy management in ad hoc wireless networks and recent developments in mobile ad-hoc networks will form the main concept of this course. Recent publications and researches about MANETs will be discussed throughout the semester

#### General Learning Outcomes

On successful completion of this course students should be able to:

- understand the recent protocols used in any layer of mobile ad-hoc networks.
- know about the hot topics that are suitable for making research
- know about the design issues of each protocol layer for mobile ad hoc networks
- make research about publications on any topic.

#### Teaching Methodology / Classroom Procedures

- The course has three hours of lectures in a week.
- Class attendance is compulsory.
- Only one make-up exam will be given for the missing exams.
- Make-up exam will be given after the final exams.
- No make-up will be given for the project.
- Students are supposed to submit the assigned tasks on time.
- Course related materials will be posted on the course web site.
- Work on individual projects: A research on a selected topic by the students including the coding for a simulation application using NS3 and presenting it at the end of the semester is a requirement.
- Final exam is conducted as a written exam that may contain short answer and writing essay questions.

#### Course Materials / Main References

**Text Book:**

Subir Kumar Sarkar, T. G. Basavaraju, C. Puttamadappa, Ad Hoc Mobile Wireless Networks, Auerbach Publications, Feb 2013, ISBN:978-1466514461

**Lecture Notes:**

-

Weekly Schedule / Summary of Topics	
<b>Week 1</b>	Fundamentals of Wireless Networks: What are Ad Hoc Networks?
<b>Week 2</b>	What is MAC Layer Protocol for Ad Hoc Wireless Networks
<b>Week 3</b>	Selected MAC Layer Protocols for Ad Hoc Wireless Networks
<b>Week 4</b>	What is Routing Protocol for Ad Hoc Wireless Networks?
<b>Week 5</b>	Selected Routing Protocols for Ad Hoc Wireless Networks
<b>Week 6</b>	What is Multicast Routing Protocol for Mobile Ad Hoc Networks?
<b>Week 7-8</b>	Selected Multicast Routing Protocols for Mobile Ad Hoc Networks
<b>Week 9</b>	What is Transport Protocol for Ad Hoc Networks?
<b>Week 10</b>	Selected Transport Protocols for Ad Hoc Networks
<b>Week 11</b>	Applications and Recent Developments in Ad Hoc Networks
<b>Week 12</b>	Applications and Recent Developments in Ad Hoc Networks
<b>Week 13</b>	Projects presentations by students
<b>Week 14-15</b>	Final Examinations

**Rules and Obligations**

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

**Background Requirement**

- Students are expected to have a basic knowledge about network topologies, communication protocols like TCP/IP and OSI Model at minimum undergraduate level.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

Evaluation and Grading	Method of Assessment		
	Project	Midterm Exam	Final Exam
Percentage	40 %	-	60 %

**Grading Criteria \***

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 - 100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 - 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Wireless Networking
<b>Course Code</b>	ITEC579
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit (Lec, Lab, Tut)</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/alihakanulusoy">http://staff.emu.edu.tr/alihakanulusoy</a>

<b>Instructors(s)</b>	Assoc. Prof. Dr. Ali Hakan Ulusoy	<b>Office Tel</b>	2881
<b>e-mail</b>	<a href="mailto:alihakan.usulsoy@emu.edu.tr">alihakan.usulsoy@emu.edu.tr</a>	<b>Office No.</b>	CT 108

**Course Description**

This course provides a hands-on guide to planning, designing, installing and configuring wireless LANs. The course offers in-depth coverage of wireless networks with extensive step-by-step coverage of IEEE 802.11b/a/g/n implementation, design, security, and troubleshooting.

**General Learning Outcomes**

On successful completion of this course students should:

- Describe how wireless technology is used in daily activities
- Describe the different IEEE WLAN standards
- Explain the principals of radio wave transmissions
- List and describe the wireless modulation schemes used in IEEE WLANs
- Explain the MAC procedures for joining, transmitting, and remaining connected to a WLAN
- Explain the steps for planning a wireless network
- Describe how to perform a site survey
- Explain the basic security protections for IEEE 802.11 WLANs
- List wireless security solutions
- Explain the procedures for maintaining a wireless network
- List troubleshooting techniques for solving RF transmission problems
- Describe the features of a wireless personal area network, a wireless metropolitan area network, and a wireless wide area network
- Explain the newest wireless networking technologies
- Conduct research about a wireless networking topic and present its findings

**Teaching Methodology / Classroom Procedures**

- Final exam is conducted as a written exam that may contain multiple choice questions, true/false questions, fill in the blanks questions and short answer questions.
- For the project / presentation, the students need to choose one paper from any source such as IEEE journals and/or conference proceedings. It is required that the students inform the instructor which

papers they have chosen for the presentation and seek their approval. Grades will be based on clarity of presentation, understanding of the key concepts, describing the research contained in the paper, and answering the questions from the audience. There will no teaming opportunities.

- Students are expected to carry out the assigned readings, and submit assignments.
- Students are encouraged to use internet to search for various related topics.
- Only one make-up exam will be given for the missing exams.
- Make-up exam will be given after the final exams.
- No make-up will be given for the project.
- Supplementary information for the course is available at <http://staff.emu.edu.tr/alihakanulusoy>. The Web site contains class notes, class announcements, the course syllabus, exam dates, and other information for the course.

### Course Materials / Main References

**Text Book:**

Mark Ciampa, *CWNA Guide to Wireless LANs, Second Edition*, Course Technology Incorporated, 2006, ISBN 0-619-21579-8.

**Resource Books:**

1. Pejman Roshan, Jonathan Leary, *802.11 Wireless LAN Fundamentals*, Cisco Press, 2003.
2. Mark Ciampa, *Designing and Implementing Wireless LANs*, Course Technology, 2001.
3. Theodore S. Rappaport, *Wireless Communications: Principles and Practice*, Prentice Hall, 2001.

**Lecture Notes:**

All course materials are also available online in Adobe PDF (Portable Document Format).

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	<b>It's a Wireless World:</b> A Day in the Life of a Wireless User, A Look at Wireless Technologies, Wireless LAN Applications, Wireless Advantages and Disadvantages <b>Wireless LAN Devices and Standards:</b> WLAN Devices, Understanding Standards, Wireless Standards Organizations and Regulatory Agencies, Types of WLANs
<b>Week 2</b>	<b>How Wireless Works:</b> Radio Wave Transmission Principles, Radio Frequency Behavior and Measurement, Antennas
<b>Week 3</b>	<b>IEEE 802.11 Physical Layer Standards:</b> Wireless Modulation Schemes, IEEE 802.11 Physical Layer Standards
<b>Week 4</b>	<b>IEEE 802.11 Medium Access Control and Network Layer Standards:</b> IEEE WLAN Configurations, IEEE 802.11 MAC Layer Standards, WLAN Network Layer Standards
<b>Week 5</b>	<b>Planning and Building a Wireless LAN:</b> Planning for a Wireless Network, Designing the WLAN, Deploying a Wireless Network, Providing User Support <b>Conducting a Site Survey:</b> What Is a Site Survey?, Performing a Site Survey
<b>Week 6</b>	<b>Wireless LAN Security and Vulnerabilities:</b> Security Principles, Basic IEEE 802.11 Security Protections, Vulnerabilities of IEEE 802.11 Security, Other Wireless Attacks <b>Implementing Wireless LAN Security:</b> Wireless Security Solutions, Transitional Security Model, Personal Security Model, Personal Security Model, Enterprise Security Model
<b>Week 7</b>	<b>Managing a Wireless LAN:</b> Monitoring the Wireless Network, Maintaining the Wireless Network, Establishing a Wireless Security Policy
<b>Week 7-8</b>	Midterm Examinations
<b>Week 9</b>	<b>Network Settings and Wireless LAN Troubleshooting:</b> Wired Network Settings for Wireless Connections, Troubleshooting Wireless Networks
<b>Week 10</b>	<b>Personal, Metropolitan, and Wide Area Wireless Networks:</b> Wireless Personal Area Networks, Wireless Metropolitan Networks, Wireless Wide Area Networks, The Future of Wireless Networks
<b>Week 11</b>	Project Presentations

<b>Week 12</b>	Project Presentations
<b>Week 13</b>	Project Presentations
<b>Week 14 - 15</b>	Final Examinations

#### **Rules and Obligations**

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any quiz or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

#### **Background Requirements**

- Students are expected to have a networking background at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

#### **Method of Assessment**

Evaluation and Grading	<b>Assignments</b>	<b>Project / Presentation</b>	<b>Final Exam</b>
Percentage	30 %	30 %	40

#### **Grading Criteria :**

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Architecture and Hardware
<b>Course Code</b>	ITEC582
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Area Elective
<b>Workload</b>	240 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/husnubayramoglu">http://staff.emu.edu.tr/husnubayramoglu</a>

<b>Instructor(s)</b>	Asst. Prof. Dr. Hüsnü Bayramoğlu	<b>Office Tel</b>	+90 392 6302894
<b>E-mail</b>	husnu.bayramoglu@emu.edu.tr	<b>Office No</b>	CT100

**Course Description**

The course provides the study of the structure, characteristics and operation of modern day computer systems including a basic background on the computers evolution, its design process and its internal characteristics which includes processor components, control unit architecture, memory organization and system organization. The concept of reduced instruction set computers (RISC), superscalar processors and superpipelining is explained in detail. The benefits of parallel processing and multicore processors are considered.

**General Learning Outcomes**

On successful completion of this course students should be able to:

- Describe design principles for different instruction sets
- Discuss different register organizations
- Identify processor and register organizations
- Describe instruction pipelining and identify pipeline hazards
- Discuss RISC/CISC processors
- Explain superscalar execution and superpipeline approaches
- Identify symmetric multiprocessors and cache coherency protocols
- Discuss Cluster and NUMA organizations
- Describe multiple processor organizations
- Discuss multicore organizations
- Have the necessary knowledge of related research literature

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week mainly held in the form of a seminar.
- There is no lab works or tutorials.
- There are two/three written quizzes and one written final exam.
- The quizzes and exams are conducted as a written exam that may contain multiple choice, fill in the blanks, short answer and writing essay questions.
- There is an individual term project.
  - You should find a recent conference/journal paper (published in the last 5 years) related to Computer Architecture and Hardware.

- The selected paper should be sent as an e-mail to husnu.bayramoglu@emu.edu.tr and wait for the confirmation.
- Once the topic is confirmed, you can start studying the topic and prepare a written report.
- The printed report should be submitted before the announced deadline.
- Late submissions are not accepted.
- Project grade is out of 25%.
- The report should be between 3500-4000 words with the format provided in the report template on the web site.
- Turnitin plagiarism test must be obtained before submission.
- The plagiarism test result should be less than 20%.
- No reports are accepted for consideration with higher plagiarism test result.
- An account will be created for you to make the plagiarism test through Turnitin.
- The work done for the project should be presented.
- The duration of the presentation is about 15 minutes for each student.
- Presentation grade is out of 10%.
- Class attendance is compulsory.
- Lecture notes are available on the course web site.
- Course related materials will be posted on the course web site.

### Course Materials / Main References

**Text Book:**

William Stallings, Computer Organization and Architecture-Designing for Performance, Ninth Edition, Pearson Higher Education, 2013. ISBN 13: 978-0-13-293633-0

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	ARM Data Types, Intel X86 Data Types
<b>Week 2</b>	Variable Length Instructions: PDP-11 Instruction Format, Intel x86 Instruction Format
<b>Week 3</b>	Register Organizations, Pipelining, Pipeline Hazards
<b>Week 4</b>	Instruction Execution Policies, RISC/CISC Processors
<b>Week 5</b>	Instruction Issue Policies
<b>Week 6</b>	Superscalar Execution, Superpipelining
<b>Weeks 7-8</b>	Midterm Examinations
<b>Weeks 9-10</b>	Symmetric Multiprocessors, Cache Coherency Protocols, Cluster Computer Architectures
<b>Week 11</b>	CC-NUMA (Cache Coherent Non-Uniform Memory Access) Organizations
<b>Week 12</b>	Multicore Organizations
<b>Week 13</b>	Presentations for Term Projects
<b>Week 14</b>	Presentations for Term Projects
<b>Week 15</b>	Presentations for Term Projects
<b>Weeks 16-18</b>	Final Examinations

### Rules and Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up will be given for any quiz, project, presentation or assignment.
- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.

### Background Requirements



- Students are expected to have a computer hardware background at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

	Method of Assessment		
Evaluation and Grading	Term Project	Quizzes	Final Exam
Percentage	35 %	15 %	50 %

Grading Criteria *											
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 - 100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 - 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester and distribution of the averages will play a significant role in the evaluation of the letter grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Risk Management for IT Projects
<b>Course Code</b>	ITEC584
<b>Type</b>	Full Time
<b>Semester</b>	Fall/Spring
<b>Category</b>	Elective
<b>Workload</b>	240 Hours
<b>EMU Credit (Lec, Lab, Tut)</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture
<b>ECTS Credit</b>	8
<b>Course Web Site</b>	<a href="https://staff.emu.edu.tr/mustafailkan/en/teaching/itec584">https://staff.emu.edu.tr/mustafailkan/en/teaching/itec584</a>

<b>Instructors(s)</b>	Assoc. Prof. Dr. Mustafa Ilkan	<b>Office Tel</b>	1245
<b>e-mail</b>	Mustafa.ilkan@emu.edu.tr	<b>Office No.</b>	CT 204

**Course Description**

This course aims to provide a full understanding of the management roles, responsibilities and techniques needed to manage risks in IT projects.

**General Learning Outcomes**

On successful completion of this course students will have understanding of:

- Comprehensive knowledge regarding certain and uncertain risks that can occur in while dealing with IT projects.
- The course will equip students with skills to effectively identify, analyze, and mitigate such risk to successfully achieve their project goals.
- Advance knowledge of risk assessment, analysis, and reducing techniques.
- Risk management standards.

**Teaching Methodology / Classroom Procedures**

- Class quizzes will be taken once in a month. The quizzes are from each chapter and are organized every month from the covered topics.
- Students are required to present any chapter from the course either individually or in a group. The aim is to create a collaborative medium and create discussions.
- Students will also be assign a technical project related to any IT system (chosen by students) e.g. a static website, e-commerce/dynamic website, end-user system, online system etc
  - Students are encouraged to use internet to search for more information.
  - Student must comply with risk management guidelines and standards and must use tools such as Microsoft Excel or Word to generate report and design necessary risk management tables and figures.
  - The purpose to be to analyze students understanding and knowledge gained from the course as well as their capability to utilize this knowledge in the professional world.
  - Project report will be based on professional risk management report formats used in organization.

- Project must be submitted before the deadline.
- Final exam is conducted as a written exam that may contain multiple choice questions, true/false questions, fill in the blanks questions and essay questions.
- Make-up exam will be given after the final exams.
- Supplementary information for the course is available at <http://staff.emu.edu.tr/mustafailkan/en/teaching/itec584>. The Web site contains class notes, class announcements, the course syllabus, exam dates, and other information for the course.

### Course Materials / Main References

**Text Book:**

Risk Management for IT Projects, Bennet P. Lientz, Lee Larssen

**Resource Books:**

Principles of Risk Management and Insurance, Eleventh Edition, George E. Rejda

**Lecture Notes:**

All course materials are also available online in Adobe PDF (Portable Document Format).

### Weekly Schedule / Summary of Topics

<b>Week 1</b>	Chapter 1 - INTRODUCTION
<b>Week 2</b>	Chapter 2 - Effective Issues Managements and Coordination
<b>Week 2</b>	Chapter 3 - Analysis and Measurements of Issues and Risk
<b>Week 3</b>	Chapter 4 - Teams
<b>Week 3</b>	Chapter 5 - The Work
<b>Week 4</b>	Chapter 6 - Business Unit
<b>Week 4</b>	Chapter 7 - Management
<b>Week 5</b>	Chapter 8 - Projects
<b>Week 5</b>	Chapter 9 - Resistance to Change
<b>Week 6</b>	Chapter 10 - Vendors, Consultants and Outsourcing
<b>Week 6</b>	Chapter 11- Headquarters
<b>Week 7</b>	Chapter 12-Technology
<b>Week 7</b>	Chapter 13- IT Strategic Plan
<b>Week 8</b>	Chapter 14- Analysis
<b>Week 8</b>	Chapter 15 - Software Packages
<b>Week 9</b>	Chapter 16 – Development
<b>Week 9</b>	Chapter 17 – Implementation
<b>Week 10</b>	Chapter 18 - Operations and Support
<b>Week 11</b>	Final Exam

### Rules and Obligations

- Each student can have only one make-up exam. One who misses an exam should provide a medical report within 3 days after the missed exam. The make-up exam will be organized at the end of the term after the finals and will cover all the topics. No make-up exam will be given for any quiz or assignment.

- Once the grades are announced, the students have only one week to do objection about their grades.
- It is the students' responsibility to follow the announcement in the course web site.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

#### **Background Requirements**

- Students are expected to be enrolled in Master's program.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

#### **Method of Assessment**

Evaluation and Grading	<b>Quiz</b>	<b>Project / Presentation</b>	<b>Final Exam</b>
Percentage	20 %	40%	40%

#### **Grading Criteria :**

Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.



**EASTERN MEDITERRANEAN UNIVERSITY**  
**SCHOOL OF COMPUTING AND TECHNOLOGY**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**COURSE POLICY SHEET**

Course Title	Term Project
Course Code	ITEC599
Type	Full Time
Semester	Fall/Spring
Category	Area Core
EMU Credit	(0,0,0) 0
Prerequisite	-
Language	English
Level	Graduate
Teaching Format	Weekly meetings with supervisor
ECTS Credit	15 <a href="#">What is ECTS? Why ECTS is needed? How does it work?</a>
Workload	450 Hours
Course Web Site	<a href="https://sct.emu.edu.tr/en/itec599-term-project">https://sct.emu.edu.tr/en/itec599-term-project</a>

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Guidance for Term Project
<p><b>What is Term Project?</b></p> <ol style="list-style-type: none"><li>1. Term project should include identification of problem, formulation of hypothesis, search and review of literature, exposure to recent advances, data collection, critical analysis, interpretation of results and drawing conclusions.</li><li>2. Term project report should provide a literature review of the related area and explain the nature of the problem to be investigated. It should provide a clear summary of the project background, relevance and main contributions.</li></ol> <p><b>Supervisor Appointment and Project Proposal</b></p> <ol style="list-style-type: none"><li>1. Find a supervisor and fill the <a href="#">Project Supervisor Co-Supervisor Appointment Form</a>. This form is used to represent the agreement between the supervisor and student to work together on ITEC599-Term Project. The deadline for submitting the form is determined by the last day for add/drop of the academic semester.</li><li>2. Agree on a project topic with your supervisor, fill the <a href="#">Master's Project Proposal Form</a>, submit it to the Departmental Graduate Committee and wait for the approval of your project topic. The deadline for</li></ol>

submitting the form is determined by the last day for add/drop of the academic semester. Once your topic is approved, you can start your term project studies.

### **Project Report**

1. A project report must be written according to the [report format](#).
2. The length of the report should be between 60 and 100 pages, excluding the cover page, approval page, abstract, dedication, acknowledgement, table of contents, list of tables, list of figures, list of abbreviations and appendix.
3. Turnitin plagiarism test result must be obtained before submitting the report to the jury members.
4. Test result must be less than 20% where each similarity index cannot exceed 5%.
5. Turnitin plagiarism test result page must be attached as the last page of the project report before submission.
6. The deadline for submitting the report is 2 weeks before the last day for submitting the letter grades of the academic semester.
7. 3 copies of the report must be submitted to 3 jury members, 1 week before the project defense date.
8. Reports submitted after the deadline will not be accepted. Students who submit their reports after the deadline receives PP (Project Progressing) letter grade. In this case, student should register ITEC599-Term Project in the next following semester to continue and complete the project.

### **Project Defense (Presentation)**

1. Project defense is done against 3 jury members consists of Information Technology Master's Program academic staff.
2. Supervisor determines the names of the jury members and fill the [Jury Report for the Project Defense Form](#) accordingly.
3. Jury members take one of the following decisions after the defense of the student:
  - Approved: The Jury judges that the candidate has satisfactorily completed the Term Project work.
  - Approved upon alteration: The Jury judges that the candidate should resubmit the Term Project to the jury members with the required alterations, within not more than two weeks.
  - Rejected: The Jury judges that the candidate has not satisfactorily completed the Term Project work.

### **After Defense**

1. If the project study is "approved" by the jury members or if the jury decision is "approved upon alteration" and student makes the necessary corrections on time study, then hard-covered project reports must be prepared by the student to collect the signatures for the approval page.
2. 3 copies of the hard-covered reports must be prepared where 1 copy will be submitted to the student, 1 copy to the supervisor and 1 copy goes to the departmental library.
3. Each copy of the hard-covered reports must contain a CD containing the soft copy of the report, attached to the last page of the report.
4. If the project study is rejected by the jury members or if the jury decision is "approved upon alteration" and student cannot make the necessary corrections on time study, then the project study must be repeated.

### **General Learning Outcomes**

On successful completion of the project students should be able to:

- Summarize major themes in their area of specialization
- Identify areas where ethical issues may arise
- Act as expert and developer in their fields of speciality
- Understand the foundations of the chosen minor subject
- Have good skills in communications and proficiency in a language
- Select technologies, policies, and procedures to assure the confidentiality, integrity, and availability of information and IT systems

### **Teaching Methodology**

- Students have weekly meetings with their supervisor.
- Supervisors direct the student to prepare the necessary materials for successful completion of the term project.
- All project related forms are available on the course web site.