University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc Computer Engineering

Form no. (12): **Course Specification**

1- Course Data

Course Code: **CC533**	Course Title: **Internetwork Programming**	Academic Year/Level: year **4,5** / semester **7,8,9,10**
Specialization: **Computer Engineering**	**Credit Hours**: 3 **Lecture**: 2 **Tutorial:** 0 **Lab:** 2	**Prerequisite**

2- Course Aim

This course covers Internetworking programming in depth, including client-server, peer-to-peer, and web applications. The primary goal of the course is to help students understand the principles of how distributed applications are built, while also giving them practical experience in creating common Internet applications.

3- Intended Learning Outcomes

a- Knowledge and Understanding	[a3] Methodologies of solving engineering problems, data collection and interpretation. • Understand of TCP/IP • Gain experience designing a variety of Internet applications, including client-server, peer-to-peer, and web applications. • Gain the confidence and ability to quickly learn a new language and libraries, through exposure to HTML, JavaScript , ASP, PHP, and MVC programming [a4] Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues, business and management principles relevant to engineering, professional ethics and impacts of engineering solutions on society and environment. • Understand concurrent programming models that are used for building scalable servers, including an emphasis on synchronization of threads and processes using both semaphores and message passing. [a6] Related research and current advances in the field of computer software and hardware and contemporary engineering topics. • Understand web programming concepts, including database connectivity, security, and identity. • Understand basic relational database concepts used in web programming, including structuring data and making queries.
b- Intellectual Skills	[b2] Think in a creative and innovative way in problem solving and design using the latest technologies and solve engineering problems, often on the basis of limited and possibly contradicting information while identifying symptoms in problematic situations. • Examine: • Relational database • MVC

c- Professional Skills	[c2] Create and/or re-design a process, component or system, and carry out specialized engineering designs with neatness and aesthetics in design and approach. [c9] Write computer programs on professional levels achieving acceptable quality measures in software development. Conduct user support activities competently. • Experiment HTML, PHP,ASP.NET,JavaScript
d- General Skills	[d1] Collaborate effectively within multidisciplinary teams. [d2] Work in stressful environment and within constraints, communicate effectively, lead and motivate individuals and effectively manage tasks, time, and resources. • Gain experience designing a variety of Internet applications, including client-server, peer-to-peer, and web applications.

4- Course Content

Week No.1	History of Internetworking
Week No.2	Basics of TCP/IP
Week No.3	TCP/IP
Week No.4	Routing(1)
Week No.5	Socket Programming
Week No.6	Network Security
Week No.7	7th week Exam
Week No.8	HTML
Week No.9	CSS
Week No.10	JavaScript
Week No.11	DOM
Week No.12	12th week Exam
Week No.13	JSP
Week No.14	PHP
Week No.15	ASP
Week No.16	Presentation of projects and Final Exam.

5- Teaching and Learning Methods

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

6-Teaching and Learning Methods for Students with Special Needs

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

The academic advisors of each student, as well as dedicated department TAs monitor the students' progress and solve any problem he/she may encounter.

7- Student Assessment

a-Procedures used	1-Written Examinations to assess The Intended Learning Outcomes. 2-Class Activities (Reports, Discussions, ------) to assess The Intellectual Skills.

b- Schedule:	Assessment 1 Assessment 2 Assessment 3 Assessment 4	7th Week Written Exam 12th Week Written Exam Continuous Assessments 16th Week Final Written Exam
c- Weighing of Assessment	7th Week Examination 12th Week Examination Final-term Examination Oral Examination Practical Examination Semester Work Total	30 % 20 % 40 % 0 % 0 % 10 % 100%

8- List of References:

a- Course Notes	
b- Required Books (Textbooks)	• Programming the World Wide Web ,Robert W. Sebesta • Internetworking with TCP/IP, Vol 1 (5th Edition) by Douglas E. Comer
c- Recommended Books	• Web Protocols and Practice: HTTP/1.1, Networking Protocols, Caching, and Traffic Measurement, 1st Edition, by Balachander Krishnamurthy and Jennifer Rexford, Addison Wesley Professional, 2001, ISBN 0201710889. • Web Database Applications with PHP, and MySQL, 2nd Edition, by Hugh E. Williams and David Lane, O'Reilly & Associates, May 2004, ISBN 0-596-00543-1.
d- Periodicals, Web Sites, etc.	N/A

Course Instructor:
Prof. Dr. Mohamad Abou El-Nasr

Program Manager:
Prof. Dr. Mohamad AbouEl-Nasr

Dean of College of Engineering and Technology of AASTMT

Name: **Prof. Moustafa Hussein Aly**

Signature:

Executive Manager of Quality Assurance Center of AASTMT

Name: **Prof. Aziz Ezzat**

Signature: