METTU UNIVERSITY
INFORMATION TECHNOLOGY PROGRAM

Program	Information Technology
Course Code	ITec4131
Course Title:	Integrative Programming and Technologies
Degree Program	Information Technology
Module Name	Basic programming
Module Code.	**ITec-M4131**
Instructor/Tutor	Begna D. Office location: Block 6,Office No:76 **website**: https://begnafrique.wordpress.com/; e-mail: **begna19mrblgo@gmail.com**
Target Group:	Information Technology Students
Year /Semester	Year: IV, Semester: I
Pre-requisites	Fundamentals of Programming I (ITec1041), Event-Driven Programming

Course Description: *This course looks at systems integration with focus on communication mechanisms and data standardization. Students learn how to choose their communication approach by considering platform, data structure similarity/dissimilarity as well as client requirements. They will learn how to represent structure and how to transport data using XML and XML related technologies and protocols. Standardization of XML documents for the purpose of data exchange is stressed.*

Course objective
At the end of this course students will be able to

- Describe and contrast the different types of architectures for integrating systems.
- Define the role of DCOM, CORBA, and RMI in distributed processing.
- Describe how web services are used to integrate disparate applications in an organization.
- Create valid WSDL, SOAP and UDDI XML documents to define a web service. Write, debug, and test a web service. Deploy the web service to middleware and invoke the web service from an application across the network.
- Design, develop and test a socket program that communicates between two different services using both TCP/IP sockets and Datagram sockets.
- Describe the role of the WSDL, SOAP, and UDDI architectures in creating and using web services.
- Describe the role of socket programming in communicating between systems.

Course contents

1.Intersystem Communications: Architectures for integrating systems; DCOM, CORBA, and RMI; Web Services and Middleware; Network programming; Message and queuing services; Low level data communications

2. Data Mapping and Exchange: Metadata; Data representation and encoding; XML, DTD, XML schemas; Parsing XML documents; XSL, XSLT and XPath

3. Integrative Coding: Design Patterns; Interfaces; Inheritance

4 Miscellaneous Issues: Adopt and Adapt vs. make; Versioning and version control

Assessment: Final= 40%, Lab 20%, Project 20%, Test 10%, Assignment 10%

References: Sathish Kumar Konga. Basic integration programming technology: data integration technology/ architecture