

Macao Polytechnic Institute
School of Applied Sciences
Bachelor of Science in Computing
Module Outline
Academic Year 2020/2021 Semester 2

Learning Module	Internet Programming I		Class Code	COMP222-221/222	
Pre-requisite(s)	Nil				
Medium of Instruction	English			Credit	3
Lecture Hours	36 hrs	Lab/Practice Hours	9 hrs	Total Hours	45 hrs
Instructor	Calana Chan		E-mail	calanachan@ipm.edu.mo	
Office	Rm.511, MengTak Building, Main Campus		Telephone	8599-3277	

Description

This learning module is an introduction to server-side web programming. Students will be taught the most important concepts for building web applications through lectures and hands-on programming experience, which will enable them to design and program web-based software systems. The learning module provides the principles of web application development, and arms students with the skills for developing web oriented applications. Topics include web request handling, state management, and database manipulation. For demonstration purpose, the learning module focuses on building web applications with Django.

Learning Outcomes

After completing the learning module, students will be able to:

1. Demonstrate competencies in designing a dynamic web site; (D1p, D2p)
2. Demonstrate knowledge and skills in web application development using Python and Django; (EA1p, EA4p, EP2p)
3. Develop interactive database driven web application; (EA4p, EP1p)
4. Identify application-level threats and countermeasures of web applications. (D2p)

Content

1. Introduction to Web programming using Django	(3 hours)
2. Creating Django web applications	(6 hours)
2.1 Use of IDE environment	
	Lab Practice 1
	(1 hour)
2.2 The use of	
2.2.1 Views and URLconfs	
	Lab Practice 2
	(1 hour)
2.2.2 Templates	
3. Database programming	(6 hours)
3.1 Using Models	
3.2 Basic data access	
	Lab Practice 3
	(1.5 hours)
3.3 Advanced Models	
	Lab Practice 4
	(1.5 hours)
4. Handling Form data	(6 hours)
4.1 Post vs Get	
	Lab Practice 5
	(1 hour)
5. State management	(6 hours)
5.1 Using sessions in views	
5.2 Setting cookies and its security issues	
	Lab Practice 6
	(1 hour)
5.3 Web Application Security Risks	
6. Tracing, debugging and error handling	(1.5 hours)
7. User Authentication in Django	(6 hours)
7.1 Permissions and authorization	
	Lab Practice 7
	(1 hour)
7.2 Authentication in web requests	
	Lab Practice 8
	(1 hour)
8. Deploying Django	(1.5 hours)

Teaching Method

Lectures and laboratory sessions.

Attendance

Attendance requirements are governed by the “Academic Regulations Governing Bachelor’s Degree Programmes of Macao Polytechnic Institute”. Students who do not meet the attendance requirements for the module will not be permitted to sit the final or re-sit examination and shall be awarded an ‘F’ grade.

Assessment

This learning module is graded on a 100 point scale, with 100 being the highest possible score and 50 being the passing score.

Item	Description	AHEP3 LO	Percentage
1. Assignment	Home-based exercise	EA1p, EA4p, D1p, EP1p, EP2p	15%
2. Exercises and labs	Class-based exercises and assessment	EA1p, EA4p, EP1p, EP2p	10%
3. Test	Knowledge assessment	EA1p, EA4p, D1p, EP1p, EP2p	25%
4. Examination	3-hour written examination	EA1p, EA4p, D2p	50%
Total Percentage:			100%

Students with an overall score of less than 35 in the coursework must take the re-sit examination even if the overall score for the module is 50 or above.

Students with a score of less than 35 in the final examination must take the re-sit examination even if the overall score for the module is 50 or above.

Students with an overall final grade of less than 35 are NOT allowed to take the re-sit examination.

Teaching Material

Textbook(s)

There is no official text for this learning module. Lecture notes are distributed in the class.

Reference

Reference book(s)

1. Nigel George (2019). *Build a Website With Django 3*. Independently Published.
2. Antonio Melé (2020). *Django 3 by Example*. Packet Publishing.

Website(s)

1. <https://stackoverflow.com/insights/survey/2017>
2. <https://www.djangosites.org/>
3. <https://djangopackages.org/>
4. <https://www.djangoproject.com/download/#supported-versions>
5. <http://www.tangowithdjango.com/>
6. <https://www.twoscoopspress.com/>
7. <https://djangogirls.org/>