MINISTRY OF EDUCATION AND TRAINING
HO CHI MINH CITY OPEN UNIVERSITY

COURSE SYLLABUS

I. GENERAL INFORMATION

1. Course title in Vietnamese: **LẬP TRÌNH WEB**

2. Course title in English: **WEB PROGRAMMING**

3. Knowledge / skill categorization:

☐General knowledge ☒ Specialized knowledge

☐Basic knowledge ☐Supplementary knowledge

☐Professional knowledge ☐Graduate project / thesis

4. Number of credits

Total	Theory	Practice	Self-study
3	2	1	3 (2,1,5)

5. In charge of course

a) Faculty / Department / Sub-Department: Information Technology

b) Faculty: MSc. Nguyen Thi Mai Trang

c) Contact email: trang.ntm@ou.edu.vn

d) Address: Room 604. Faculty of Information Technology. 35-37 Hồ Hảo Hớn Street, District1. HCM City

II. COURSE INFORMATION

1. Course description

The Web Programming course provides students with the knowledge and skills needed to build Web applications using ASP.NET technology and PHP.

This course is the foundation for students to do subject projects, graduation thesis, and provides knowledge and skills that software companies employers often request from candidates.

2. Course conditions

#	Course conditions	Course code
1.	Prerequisites	
	None	

2.	Previous courses	
	Database	ITEC2502
	Web application	ITEC1404
3.	Parallel courses	
	None	

3. Course objectives (COs)

The course will provide students with ability to:

Course objectives (CO)	Description	Related Program Learning Outcomes (PLO)
CO1 (Knowledge)	- Describe the architecture and operation of the Web application following Microsoft's ASP.NET MVC model. - Mastering C # and Razor language syntax when building dynamic Web applications using ASP.NET MVC technology. - Master PHP language syntax and MySQL database management system when building dynamic Web applications using open source technology. - Distinguishing PHP frameworks and using a framework to develop Web applications.	PLO5.2 PLO6.4
CO2 (Skills)	- Build a Web application using C # language combined with Razor syntax in MVC model. - Building Web applications using PHP language combined with HTML. - Access and manipulate with database management systems SQL Server, MySQL in web applications. - Deploy web application to host	PLO5.2 PLO5.7 PLO6.4
CO3 (Attitude)	- There is a sense of responsibility in learning, a sense of self-study and diligence. - Recognizing the role and importance of the subject, practical application of the subject Ability to work in groups, coordinating well, completing tasks on time and effectively.	PLO13.1 PLO13.2 PLO13.3

4. Course learning outcomes (CLOs)

After completing this course, students are able to:

Course objectives (CO)	Course learning outcomes (CLO)	Description
CO1	CLO1.1	- Demonstrate architecture and operation of web application according to MVC model
	CLO1.2	- Mastering C # programming language syntax, combined with Razor syntax for dynamic website handling in an ASP.NET MVC application
	CLO1.3	- Master PHP programming language syntax in handling dynamic websites with open source technology
	CLO1.4	- Using the database management systems SQLServer and MySQL in Web programming
	CLO1.5	- Comparing PHP frameworks and choosing the right framework for web applications
CO2	CLO2.1	- Programming to build Web applications using ASP.NET technology according to MVC model
	CLO2.2	- Install, manipulate with SQLServer database in ASP.NET MVC application
	CLO2.3	- Programming to build Web applications using PHP and HTML languages
	CLO2.4	- Installing, manipulating MySQL database using PHP programming language
	CLO2.5	- Build and deploy web applications to the host
CO3	CLO3.1	- Self-research, learn and program to develop complete web applications at a basic level
	CLO3.2	- Participate in completing group exercises, advanced learning, building website on time and satisfactory

Matrix of Course Learning Outcomes (CLOs) and Program Learning Outcomes (PLOs):

CLOs	PLO5.2	PLO5.7	PLO6.4	PLO13.1	PLO13.2	PLO13.3
CLO 1.1	3					
CLO 1.2		4				
CLO 1.3		4	4			
CLO 1.4	5	4	4			
CLO 1.5			3			
CLO 2.1		4				
CLO 2.2	5					
CLO 2.3			4			
CLO 2.4	5					
CLO 2.5		5				
CLO 3.1				5	3	3
CLO 3.2				5	4	3

1: Not supported
2: Partially supported
3: Supported
4: Highly supported
5: Totally supported

5. Course materials

a) *Textbooks*

[1] Larry Ullman, PHP and MySQL for Dynamic Web Sites Fifth Edition, Peachpit Press, 2018, [NK 100000004723], [53258].

[2] Jon Galloway, Brad Wilson, K. Scott Allen, David Matson, Professional ASP.NET MVC 5, John Wiley & Sons, Inc, 2014, [49452].

b) *Reference materials*

[3] Adam Freeman, Matthew MacDonald, Mario Szpuszta, Pro ASP.NET 4.5 in C#, Apress, 2013.

[4] Ying Bai, Practical Database Programming with Visual C#.NET, John Wiley & Sons, 2010.

6. Course assessment

Components	Assessment	Timing	Course learning outcomes (CLO)	Rate (%)
(1)	(2)	(3)	(4)	
A1. Process evaluation	Individual or group exercises	During the learning process	CLO 1.5, CLO 2.5, CLO 3.1, CLO 3.2	20%
	Total			20%
A2. Mid-term evaluation	Computer test	Final	CLO 2.1, CLO 2.2, CLO 2.3, CLO 2.4	30%
	Total			30%
A3. Final evaluation	Final test	Final	CLO 1.1, CLO 1.2, CLO 1.3, CLO 1.4, CLO 2.1, CLO 2.2, CLO 2.3, CLO 2.4	50%
	Total			50%
Total:02				100%

7. Rubrics review

a) Midterm rubric (50%)

Teamwork assignment (20%)

Criteria	CLO	Weight	Excellent	Good	Fair	Poor

Build a complete web application using PHP/ ASP.NET MVC	1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2	100%	8.5 – 10 The complete application meets the requirements: UI, Responsive Interface, Correct handling functions, Decentralization, good security	7 – 8 The complete application meets the requirements: reasonable user interface, Correct handling functions, Decentralization, basic security	5 – 6.5 The application is completed at the basic level. The functionality meets the basic requirements. (>=50%)	<5 Do not meet the average requirement.

Assessment of practicing on computer (30%)

Criteria	CLO	Weight	Excellent	Good	Fair	Poor
Section of PHP	1.3 1.4 2.3 2.4	30%	2.75 - 3 Design the right user interface, good looking. Connect and retrieve the database. Handle the correct functions.	2.25 – 2.5 Basic user interface design. Connect and access the database. Relative function handling with error <=20%	1.5 - 2 Basic user interface design. Handle functions with errors from 20% - 50%	<1.5 Do not meet the average requirement.
Section of ASP.NET MVC	1.2 1.4 2.1 2.2	70%	6 - 7 Design the right user interface, good looking. Connect and retrieve the database. Handle the correct functions.	5 – 5.5 Basic user interface design. Connect and access the database. Relative function handling with error <=20%	3.5 – 4.5 Basic user interface design. Handle functions with errors from 20% - 50%	<3.5 Do not meet the average requirement.
Total		100%				

b) Final assessment rubric (50%)

Criteria	CLO	Weight	Excellent	Good	Fair	Poor
Multiple-Choice Test (50 questions)		**100% (10 points)**	**Scoring**			
ASP.NET MVC Architecture	1.1	20%	1.8 - 2	1.4 – 1.6	1 – 1.2	<1
Syntax, and combination languages of C#, Razor	1.2	20%	1.8 - 2	1.4 – 1.6	1 – 1.2	<1
Syntax, dynamically programming website with PHP.	1.3 2.3	20%	1.8 - 2	1.4 – 1.6	1 – 1.2	<1
MySQL, SQL Server Database	1.4 2.2 2.4	20%	1.8 - 2	1.4 – 1.6	1 – 1.2	<1

Syntax, dynamically programming website with ASP.NET MVC	2.1	20%	1.8 - 2	1.4 – 1.6	1 – 1.2	<1
Total		**100%**				

8. Teaching plans

Teaching plans for theory (4.5 class-time unit per session)

Week/session	Content	CLO	Teaching and learning activities	Reviews / Assessment	Main documents and references
(1)	(2)	(3)	(4)	(5)	(6)
1.Week 1/ Theory Session 1	Chapter 1: Overview 1.1 Overview of ASP.NET MVC 1.1.1 Introducing ASP.NET MVC 1.1.2 Create an ASP.NET MVC application 1.1.3 Objects maintain application state. 1.2 PHP Overview 1.2.1 Introduction to PHP 1.2.2 Introduce some PHP frameworks	CLO 1.1 CLO 1.5	Lecturers: + Introduction outlines + Lecture + Simulation + Ask students questions. + Disseminate group exercises. Student: + Study in class: pay attention to listen to lectures, take notes, answer questions. + Study at home: Review the lecture, preview the lecture content for the next session. + On the LMS system: Do exercises, participate in discussion on forums, register in groups.	A1 A3	[1] Chapter 1 [2] Chapter 1
2.Week 2/ Theory Session 2	Chapter 2: Controller - View - Model 2.1 Controller 2.1.1 Introduction 2.1.2 Action in Controller 2.1.3 Controller	CLO 1.2 CLO 2.1	Lecturers: + Lecture + Simulation + Ask students questions. Student: + Study in class:	A1 A2 A3	[2] Chapter 2, 3 [3] Chapter 14, 15

	operation 2.1.4 Controller Usage Example 2.2 View 2.2.1 Introduction 2.2.2 Razor 2.2.3 Operation with View 2.2.4 View to Controller 2.3 Model		pay attention to listen to lectures, take notes, answer questions. + Study at home: Review lectures, preview lecture content for the next session, do group exercises. + On LMS system: Do exercises, participate in forum discussions, report group exercise progress		
3. Week 3/ Theory Session 3	Chapter 3: HTML Helpers 3.1 Introducing HTML Helpers Forms and controls 3.2.1 Forms 3.2.2 TextBox 3.2.2 TextArea CheckBox 3.2.4 RadioButton 3.2.5 DropdownList 3.2.6 Hidden 3.2.7 Password 3.2.8 String 3.2.9 Label 3.2.10 Editor 3.2.11 ActionLink 3.3 Verification of the data 3.3.1 Required 3.3.2 StringLength 3.3.3 RegularExpression 3.3.4 Range 3.3.5 Compare 3.3.6 Remote	CLO 1.2 CLO 2.1 CLO 3.1	Lecturers: + Lecture + Simulation + Ask students questions. Student: + Learning in class: pay attention to listen to lectures, take notes, answer questions exercises. + Study at home: Review lectures, preview lecture content for the next session, do group exercises. + On LMS system: Do exercises, participate in forum discussions, report group exercise progress	A1 A2 A3	[2] Chapter 5, 6

4. Week 4/ Theory Session 4	Chapter 4: Working with Databases 4.1 Microsoft SQL Server 4.1.1 Local database 4.1.2 Server database 4.1.3 Connection string in *Web.config* 4.2 Entity Framework (EF) 4.2.1 Introduce, install EF 4.2.2 EF Code First 4.2.3 EF Database First 4.3 Lambda Expressions 4.4 Language Integrated Query (LINQ) 4.4.1 Introduction of LINQ 4.4.2 LINQ To Entities	CLO 1.4 CLO 2.1 CLO 2.2 CLO 3.1 CLO 3.2	Lecturers: + Lecture + Simulation + Ask students questions. Student: + Study in class: pay attention to listen to lectures, take notes, answer questions. + Study at home: Review lectures, preview lecture content for the next session, do group exercises. + On LMS system: Do exercises, participate in forum discussions, report group exercise progress	A1 A2 A3	[2] Chapter 4 [3] Chapter 11, 12
5.Week 5/ Theory Session 5	Chapter 5: PHP Programming Language 5.1 PHP Syntax and Structure 5.1.1 Data types in PHP 5.1.2 Variables in PHP 5.1.3 Constants in PHP 5.1.4 Operators in PHP 5.2 Control Structure 5.2.1 Selective Structure 5.2.2 Loop structure 5.2.3 Break and continue 5.3 Functions and Objects 5.3.1 Functions 5.3.2 Objects	CLO 1.3 CLO 2.3 CLO 3.1 CLO 3.2	Lecturers: + Lecture + Simulation + Ask students questions. Student: + Study in class: pay attention to listen to lectures, take notes, answer questions. + Study at home: Review lectures, preview lecture content for the next session, do group exercises. + On LMS system: Do exercises, participate in forum	A1 A2 A3	[1] Chapter 2,3 [4] Chapter 4, 5, 6

			discussions, report group exercise progress		
6.Week 6/ Theory Session 6	5.4 Arrays 5.4.1 Arrays using indexes 5.4.2 associative array 5.4.3 Array Browsing 5.4.4 Two-dimensional array 5.4.5 Functions for manipulating arrays 5.5 Form handling in PHP 5.5.1 Website redirection. 5.5.2 Transfer data between pages	CLO 1.3 CLO 1.4 CLO 2.3 CLO 2.4 CLO 3.1 CLO 3.2	Lecturers: + Lecture + Simulation + Ask students questions. Student: + Study in class: pay attention to listen to lectures, take notes, answer questions. + Study at home: Review lectures, preview lecture content for the next session, do group exercises. + On LMS system: Do exercises, participate in forum discussions, report group exercise progress	A1 A2 A3	[1] Chapter 4, 5 [4] Chapter 8, 11
7.Week 7/ Theory Session 7	5.6 PHP and MySQL 5.6.1 Introducing MySQL Improved Extension (MySQLi) 5.6.2 Introducing phpMyAdmin 5.6.3 Working with MySQLi Database	CLO 1.3 CLO 1.4 CLO 2.3 CLO 2.4 CLO 3.1 CLO 3.2	Lecturers: + Lecture + Simulation + Ask students. questions Student: + Study in class: pay attention to listen to lectures, take notes, answer questions. + Study at home: Review lectures, do group exercises. + On LMS system: Do exercises, participate in	A1 A2 A3	[1] Chapter 9 [4] Chapter 9,10

			forum discussions, report group exercise progress		

Teaching plans for practices (3.0 class-time units per session)

Week/session (1)	Content (2)	CLO (3)	Teaching and learning activities (4)	Reviews / Assessment (5)	Main documents and references
1.Week 1 / Practice Session 1	Create a simple ASP.NET MVC Web application that uses Application, Session, and Cookie objects Install PHP, create simple website using PHP language	CLO 1.1 CLO 1.2 CLO 1.3	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: redo the exercises + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A.2 A.3	
2.Week 2 / Practice Session 2	Create an ASP.NET MVC Web application that has data validation. Split groups, install each group, and configure a PHP framework	CLO 1.2 CLO 1.5 CLO 2.1 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require	A2 A3	

			Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.		
3.Week 3 / Practice Session 3	Create a Web application that accesses the database using EF Code First	CLO 1.2 CLO 1.4 CLO 2.1 CLO 2.2 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A1 A2 A3	

4.Week 4/ Practice 4	Create a Web application that accesses the database using EF Database First	CLO 1.2 CLO 1.4 CLO 2.1 CLO 2.2 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A1 A2 A3	
5.Week 5/ Practice 5	Continue to develop Web applications created in day 4	CLO 1.2 CLO 1.4 CLO 2.1 CLO 2.2 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine	A1 A2 A3	

			+ On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.		
6.Week 6/ Practice 6	Continuing to improve the ASP.NET MVC web application	CLO 1.2 CLO 1.4 CLO 2.1 CLO 2.2 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A1 A2 A3	
7.Week 7/ Practice 7	Continuing to improve the ASP.NET MVC web application Create Web sites using PHP and HTML.	CLO 1.3 CLO 2.3	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student:	A2 A3	

			+ Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.		
8.Week 8/ Practice 8	Create Web sites using PHP and MySQL	CLO 1.3 CLO 1.4 CLO 2.3 CLO 2.4 CLO 3.1 CLO 3.2	Lecturers: + Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A2 A3	
9.Week 9/	Create a complete	CLO	Lecturers:	A1	

Practice 9	Web application with PHP and MySQL	1.3 CLO 1.4 CLO 2.3 CLO 2.4 CLO 3.1 CLO 3.2	+ Instructions by intuitive operation on the machine + Track student performance and guide when students require Student: + Study in class: do the homework yourself, ask the teacher if needed + Study at home: Do homework on the machine + On LMS system: - Make and submit assignments in each practice session - Join discussions on forums.	A2 A3	
10.Week 10/ Practice Session 10	Group exercise report	CLO 1.1 CLO 1.2 CLO 1.3 CLO 1.4 CLO 1.5 CLO 2.1 CLO 2.2 CLO 2.3 CLO 2.4 CLO 2.5 CLO 3.1	Lecturers: + Evaluate, give suggestions and develop directions for application development for each group Student: + Study in class: Report, exchange discussion + Study at home: Complete group exercises + On LMS system: - Submit group assignments - Join	A1	

		CLO 3.2	discussions on forums.		

9. Course regulations

- Go to school fully, do all the practice exercise.
- Students who do not participate in forums on the LMS do not have a progress score.

DEAN OF FACULTY	EDITOR
(Sign and specify full name)	*(Sign and specify full name)*
Dr. Le Xuan Truong	MSc. Nguyen Thi Mai Trang