Web Programming – Outline
Mercy College - Shanghai Jianqiao University
Fall, 2022

Course Title	Web Programming
Description	This course provides students an overview of a web programming language and web framework used to build a dynamic web site. After establishing solid foundation of a web programming language, the course covers web application architecture, model view control framework and web framework. Students will develop dynamic web applications that implement appropriate business logic, database access and interpret the user's input. In addition, students are introduced guiding principles of enterprise design thinking and asked to apply it into their term project life cycle, that is, plan, analysis, design, implementation, and support. 48 hours.
Student Learning Objectives	After the class, students can 1. understand web application architecture, model view control framework and web framework 2. solve various basic problems using a web programming language including data types, repetitions, conditions structures, input and output and object orientation principles 3. utilize web framework to build dynamic web applications 4. apply enterprise design thinking to the life cycle of web application development 5. make live presentation of their web applications
Prerequisite	Basic computer programming languages and problem-solving skills
Textbook Reference Materials	No textbook required. Reference and handouts are given during the semester. Students may use internet as their learning repository. Bing/Baidu/Google can be a starting point. Students need to take pro-active approach in this class.
Instructor	Dr. Y. David Wang, Associate Professor Email: y8w8@hotmail.com wechat: wangs88us
Date/Time	Beijing Time: 9/19/2022 – 12/10/2022 W: 8:20AM – 9:50AM, F: 10:05AM – 11:35AM (New York Time: T: 8:20PM – 9:50PM, TH: 10:05PM – 11:35PM)
Office hour	Before and after the class or by appointment

Modality	1. Due to government guideline and travel restriction, the course modality is online and synchronized. 2. Course materials are posted inside **Blackboard (BB)**, and assignments are conducted in the BB as well. a. All the assignments are posted inside blackboard (BB) b. Please click course learning modules under course contents and navigate to each subject c. Download your individual assignment instructions and do your work offline. Once you are done your work, go back the course module and upload your work. 3. Class is using zoom, following the link: https://mercy.zoom.us/j/6775056676?pwd=OVpWbjNnUDJiQ2FFNmt3SUxBbkNhZz09 Meeting ID: 677 505 6676 Passcode: 697963 a. Need a quiet place like classroom b. Need a computer with camera enabled for showing face during the class c. Mobile devices are not suitable for the learning, only for emergency use 4. The class uses wechat group for short Announcement as an alert.
Course Evaluation & points	Course evaluation points, total 100. 5 Class participation 35 Individual Assignments 30 Group projects 30 Exams
Honesty	Academic honesty is highly valued. Students must always submit work that represents their original words or ideas. If any words or ideas used do not represent their original words or ideas, they must cite all relevant sources and make clear the extent to which such sources were used. Words or ideas that require citation include, but are not limited to, all hard copy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable source. In particular, – **Do not to turn in the work of others** – **Do not give others the work to use as their own** – **Do not plagiarize from others (published or not)** – **Do not try to deceive the instructors** Remember, it does not prevent them from discussing any ideas and homework with their classmates and others. Such intellectual exchange is encouraged.
Students With Disabilities	Shanghai Jianqiao University is committed to achieving equal educational opportunities and full participation for persons with disabilities. Persons with disabilities who may need accommodations are encouraged to discuss with their advisors and instructors.

Contents and Schedule

Wk	Date	Module	Subjects	Assignments
		Part I: Python Programming Foundations		
1	9/21 9/23	Foundations	Student learning outcome Course arrangement Introduction to Programming Setup Running Environment, Hello World Variables I/O, Processing Expressions Calculations Math module Random module	Chapter 1, 2 Assignment 1
2	9/28 9/30	Decision and Repetition	Decision Structures and Boolean Logic (if, if-else, if-elif-else statements) Nested if Statements Logical Operators Repetition Structures (loops) while loops and for loops running totals input validation loops nested loops	Chapter 3, 4 Assignment 2
3	10/5 10/7	Function and File IO	Functions and Modules void functions value returning functions local variables vs global variables modules File IO Exception	Chapter 5, 6 Assignment 3
4	10/12 10/14	List and String	Lists and Tuples slicing lists finding items in lists copying and processing lists two-dimensional lists tuples String Operations string slicing testing searching and manipulating strings	Chapter 7, 8 Assignment 4
5	10/19	Data Structure and OO	Dictionaries and Sets OO design Class Inheritance Polymorphism	Chapter 9, 10, 11 Assignment 5

		review	exercises	
	10/21	**Exam**		Online Timed Exam
		Part II: Enterprise Design Thinking and Application		
6	10/26 10/28	EDT-Concept and Principles	Guiding Principles Group assignments Group discussions Loop IBM Badge	Team project requirement posted
7	11/2	EDT-Application	Group project description	team Project Requirement and assumption submission
		Part III: Web Framework and Web Project:		
7	11/4	Web Framework Django Setup	Three tier web architecture Software Architecture Patterns MVC Web Framework Project to be built Structure (Apps, Files, Flows) Set Environment and create apps structure	
8	11/9 11/11	App Skelton	Error Message Create App Register App Build routes Create view Create template Style	
9	11/16 11/18	App Development	Modules SQLite and SQL Shell Routes, views and templates Debugging URL	
10	11/23 11/25	Pre-Project Q&A	Questions Comments Group Work	
11	11/30 12/2	Project week	Project week	
12	12/7 12/9	Showcase	Student Project Presentations and demo	project submission