Habib University
shaping futures

Web and Mobile Development

CS 370 L1
Fall Semester 2022

Things aren't always #000000 and #FFFFFF. (HTML Proverb)

Course Information

Class Meeting Time(s): Fri (02:30 PM-03:30 PM)
Course Prerequisites: CS/CE 224/272
Hardware/Software Prerequisites (if any): Microsoft SQL Server 2017, Visual Studio Community Edition 2022
Content Area: This is a 3+ 0 credit course that meets requirements for [CS Elective, SSE Elective, and Free Elective]

Course Description

Web and Mobile App development are basic building blocks of the IT Industry in today's world. Every IT graduate is expected to have expertise on how they can get information up on the web and mobile.

Also, Web and mobile developers have immense demand and opportunity in the current market. It is very important for students to get hands-on experience before stepping into a professional job.

Course Aims

This course will cover the practical aspect of how a student can create Web / Mobile applications and an intro to the mobile app development. The objective of this course is to provide the students with a thorough understanding of:

- C#, ASP.Net which are the basic building blocks of the web
- Creating Single Page Applications (SPA).
- Understanding and benefits of client-side web development.
- Building Webserver and REST APIs and services.
- Introduction to mobile app development.
- Building a mobile application that communicates with WebAPI.

Mode of Instruction

The LMS (Canvas) site will be used to share the syllabus, give out assignments, and share other course resources. Official course communication will take place on Canvas. It is your responsibility to stay up to date with it. Please use the course site to discuss all course-related matters and queries, including ambiguities in assignment questions. All course resources (presentations, recorded sessions, reference books, articles, and all other support material) can be accessed through the course site on Canvas.

Students are required to attend classes and submit assignments on time. Before each class, they should review the topics covered in the last class. Students' performance will be assessed using various instruments including assignments, projects, and class participation.

Assignments on different topics will be given during the semester. There will be a project towards the end of the course in which students will apply the learned techniques to solve some real-world problem.

Engagement, Net-etiquettes & Participation Rules

Please read the campus safety policy and protocols if the classes are in-person.

You are expected to maintain a behavior befitting Yohsin and acknowledge the classroom as a place of learning, exploration, and experimentation. The University's standard policies on attendance, inclusivity, office hours, and academic integrity apply in this course.

There will be some lab exercises in which all students are required to take participate and they will be included in active class participation.

Concerns regarding a score will be entertained by the respective instructor up to a week after the release of the score. Concerns raised later will not be entertained. Requests for grace marks for whatever reason will not be entertained and each such request will result in a penalty of 1% from the overall score.

Assessments

Assessments	Weightage	Frequency
Class Activities	20%	10
Assignments	20%	5
Mid Term Project	20%	1
Final Project	40%	1

Lab Submission Policy

The grading rubric is as follows:

Progress and Attendance	40%
Feedback Form	10%
Completion	50%

Each student must attend each lab and complete it within the given timeframe. Every student has to fill out and submit the feedback form before the end of each lab. Students are required to submit the completed lab during lab hours. If in case any student is unable to complete it, they may submit it within 72 hours. Any late submissions will then be graded as per the late submission policy.

Late Submission Policy

Late submission of assessments will be allowed up to a day, which will be penalized by 20%.

Final Exam Policy

The group needs to present a 100% completed project. Viva will be conducted and each student will be marked individually.

Grading Scale

Letter Grade	GPA Points	Percentage
A+	4.00	[95-100]
A	4.00	[90-95)
A-	3.67	[85-90)
B+	3.33	[80-85)
B	3.00	[75-80)
B-	2.67	[70-75)
C+	2.33	[67-70)
C	2.00	[63-67)
C-	1.67	[60-63)
F	0.00	[0, 60]

Note: [a, b) is a range of numbers from a to b where a is included in the range and b is not.

Academic Integrity

Each student in this course is expected to abide by the Habib University Student Honor Code of Academic Integrity. Any work submitted by a student in this course for academic credit will be the student's own work.

Scholastic dishonesty shall be considered a serious violation of these rules and regulations and is subject to strict disciplinary action as prescribed by Habib University regulations and policies. Scholastic dishonesty includes, but is not limited to, cheating on exams, plagiarism on assignments, and collusion.

a. Plagiarism: Plagiarism is the act of taking the work created by another person or entity and presenting it as one's own for the purpose of personal gain or of obtaining academic credit. As per University policy, plagiarism includes the submission of or incorporation of the work of others without acknowledging its provenance or giving due credit according to established academic practices. This includes the submission of material that has been appropriated,// bought, received as a gift, downloaded, or obtained by any other means. Students must not, unless they have been granted permission from all faculty members concerned, submit the same assignment or project for academic credit for different courses.
b. Cheating: The term cheating shall refer to the use of or obtaining of unauthorized information in order to obtain personal benefit or academic credit.
c. Collusion: Collusion is the act of providing unauthorized assistance to one or more person or of not taking the appropriate precautions against doing so.

All violations of academic integrity will also be immediately reported to the Student Conduct Office.

You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e-mail, an e-mail attachment file, a diskette, or a hard copy.

Should copying occur, the student who copied work from another student and the student who gave material to be copied will both be in violation of the Student Code of Conduct.

During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

Penalty for violation of this Code can also be extended to include failure of the course and University disciplinary action.

Course Learning Outcomes (CLOs)

By the end of this course, students will be able to: -

CLO	Description	Learning-Domain Level
CLO 1	Understand Web application containing multiple resources, ASP.NET and any static resources such as HTML pages and image files.	Cog – 3
CLO 2	Understanding the importance of client-side applications and Javascript	Cog – 3
CLO 3	Walk-through the REST API: an application programming interface (API or web API) that conforms to the constraints of REST architectural style and allows for interaction with RESTful web services	Cog – 3
CLO 4	Learn the basic structure of a mobile app. Define a shared UI for cross platform i.e. Android and iOS.	Cog – 3
CLO 5	Learning Mobile apps communicating with API.and using misc services	Cog –4

Program Learning Outcomes (For Administrative Review)

Upon graduation, students will have the following abilities:

- PLO 1: Analysis: Analyse a given situation and reduce it to one or more problems that can be solved via computer intervention.
- PLO 2: Design: Design one or more computer-based solutions of a given problem and select the solution that is best under the circumstances.
- PLO 4: Implementation: Design and implement software systems of varying complexity.

Program Learning Outcomes (PLOs) mapped to Course Learning Outcomes (CLOs)					
	CLOs of the course are designed to cater following PLOs: PLO 1: Analysis PLO 2: Design PLO 4: Implementation				
	Distribution of CLO weightages for each PLO				
	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
PLO 1	70%			30%	
PLO 2	30%		20%	30%	20%
PLO 4	20%	20%	20%	20%	20%

Mapping of Assessments to CLOs

Assessment	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Assignment 1	X				
Assignment 2		X			
Assignment 3			X		
Assignment 4				X	
Assignment 5					X
Class Activity 1	X				
Class Activity 2	X				
Class Activity 3	X				
Class Activity 4	X	X			

Assessment	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Class Activity 5	X	X			
Class Activity 6			X		
Class Activity 7			X	X	
Class Activity 8			X	X	
Class Activity 9					X
Class Activity 10			X	X	X
Mid Term Project	X	X	X		
Final Project	X	X	X	X	X

Week-Wise Schedule (Tentative)

Fall 2022 Weekly Schedule*

Week	Description	Assessments and Due Date	Labs
Week - 1 August 22 – 26, 2022	Introduction to Web Application Architecture Introduction to HTML, CSS, Javascript	CA (Class Activity) 1	Build Sample Webpage using HTML, CSS, Javascript Integrate Bootstrap template
Week - 2 August 29 – September 2, 2022	Introduction to ASP.NET Web Forms, Page Life cycle, Event, and Models	Assignment 1	Building sample ASP.NET Application
Week - 3 September 5 – 9, 2022	Introduction to ASP.NET MVC and CORE	CA 2	Building MVC Application

Week	Description	Assessments and Due Date	Labs
Week – 4 September 12 – 16, 2022	Learning how to build Web Applications using MVC/CORE and connecting to databases performing basic operations	Project Proposals Due (Functional features) CA 3	Building Applications and connecting to database. Integrating bootstrap template
September 17, 2022	Arbaeen/Chehlum Imam Hussain†‡		
Week - 5 September 19 – 23, 2022	Introduction to Web API using ASP.NET		Building consumables Web API and trying it with AJAX calls
Week - 6 September 26 – 30, 2022	Contd- Learning Web API. JSON Parsing, XML	Assignment 2 CA 4	Connecting WebAPI with database and processing response on web page
Week - 7 October 3 – 7, 2022	Introduction to Single Page Application. Importance and its working.	Assignment 3 CA5	Creating a sample SPA application
Week - 8 October 10 – 14	Introduction to Mobile Apps Create a Forms project in Visual Studio, Add visual controls to a Forms mobile app		Setting up the environment and running our first mobile app
Week - 9 October 17– 21	Mid Term project presentation		
Week - 10 October 24 – 28	Create Android project Decompose an app into activities, Build an activity's UI, Write an activity's behavior, Update your Android SDK Diwali: **October 24, 2022**	CA6	Create a sample mobile app and add some activities to it.

Week	Description	Assessments and Due Date	Labs
Week – 11 October 31 – November 4, 2022	Customize layout in Forms/XAML pages Create consistent user interfaces across different devices by using StackLayout and Grid. Specify the size of a view, Explore alignment options Arrange views with StackLayout and Grid	Assignment 4 CA7	Experiencing different controls in the mobile app
Week – 12 November 7 – 11, 2022	Consume a REST web service in Mobile App.	CA 8	Working on mobile app that will communicate with Web API
Week - 13 November 14 – 18, 2022	Store local data with SQLite in a mobile app Persist your data between application launches by storing your data locally using SQLite.	Assignment 5 CA9	Trying to save data in SQL Lite in the mobile app
Week - 14 November 21 – 25, 2022	Mobile Application Services Push Notification, Storage, Location etc.	CA10	Trying some mobile application services by using them in a mobile project
Week - 15 November 28 – December 2, 2022	Final Project Demo	Final Project	
December 5 – 6, 2022	Reading Days		
December 7 – 10 & 12 – 13, 2022	End Term Examinations Days[§]		

Notes:

* The University reserves the right to correct typographical errors or to adjust the Academic Calendar at any time it deems necessary.

† Subject to the sighting of the moon.

‡ No Class(es).

Recording Policy

Only asynchronous and synchronous online sessions will be recorded and uploaded on our Video Management System (Panopto). Link to the folder of recordings will be available to all students. Hyflex classes might be recorded if faculty deems it appropriate.

Accommodations for Students with Disabilities

In compliance with the Habib University policy and equal access laws, I am available to discuss appropriate academic accommodations that may be required for student with disabilities. Requests for academic accommodations are to be made during the first two weeks of the semester, except for unusual circumstances, so arrangements can be made. Students are encouraged to register with the Office of Academic Performance to verify their eligibility for appropriate accommodations.

Attendance Policy

Please refer to the Registrar's Office on the University's student attendance policy.

Inclusivity Statement

We understand that our members represent a rich variety of backgrounds and perspectives. Habib University is committed to providing an atmosphere for learning that respects diversity. While working together to build this community we ask all members to:

- share their unique experiences, values and beliefs
- be open to the views of others
- honor the uniqueness of their colleagues
- appreciate the opportunity that we have to learn from each other in this community
- value each other's opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- use this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the Habib community

Instructor Information

Instructor: AbdulRahman Qaim
Office Location: TBA
Email: rehman.qaim@sse.habib.edu.pk
Office Hours: 6:30 - 7

Instructor: Ali Hamza
Email: ali.hamza@sse.habib.edu.pk

Office Hours Policy

Every student enrolled in this course must meet individually with the course instructor during course office hours at least once during the semester. The first meeting should happen within the first five weeks of the semester but must occur before midterms. Any student who does not meet with the instructor may face a grade reduction or other penalties at the discretion of the instructor and will have an academic hold placed by the Registrar's Office.

Some of the homework and final project will be given as a group activity. Unless mentioned, collaboration other than for group activities is not allowed.