강의계획서조회

교과목명	웹프로그래밍			학수번호	14207007	이수	전선	학점	3
강의시간	금5 ,금6 ,금7	강의실	AI관-408						
선수과목	Basic html, Programming basics, and fundamental database concepts.			공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학부(컴퓨터공학전공)	교수성명	MAJEED ABDUL	연락처	010-9503-9597
e-mail	ab09@gachon.ac.kr	연구실		지도상담시간	Friday, 10:00 AM ~ 12:00 PM
홈페이지/카페				조교	
실시간화상강의 URL	https://gachon.webex.com/meet/ab09				

가천대 6대 핵심역량 및 학과세부역량						합계
문제해결능력	30	소프트웨어능력	40	설계능력	30	100%

강의 개요

Our dependency on web systems has grown significantly in recent years, and it affects nearly every aspect of modern life. The web has become an integral part of personal, social, and professional activities, driving technological advancements and shaping new industries. Whether for convenience, education, entertainment, or work, web programming is integral to the functioning of our digital world. Most of these applications have a nice interface as front end, and a database as a backend to hold data for each application. To efficiently process the data stored in databases and to extract relevant information from data, the role of web applications and query languages such as SQL comes into the picture. The key requirements for designing and implementing useful web applications are good good-looking interface, easier interactivity, fast functionality, and efficient data retrieval. This course will provide deep knowledge of web application development from the perspective of front-end (HTML, CSS, JavaScript), database management, data processing (PHP language), and handling using query languages such as SQL. The course covers client-server architecture, database fundamentals, and the principles behind writing codes that function over networks. Widely used web development languages and environments are compared and will be used by students to implement web applications. Specifically, the fundamentals of web programming and a rigorous understanding of how to systematically develop web applications will be provided. The focus will be on the practical side of web programming in a variety of domains/ applications. In addition, this course will introduce students to programming tools used in web design and development. Students will obtain handy knowledge about the importance of front-end, back-end, and 3rd party libraries for improving the efficiency and robustness of web applications, which are also necessary skills in the ever-changing IT job market.

강의 목표

On successful completion of the web Programming course, students will be able to:
—To understand the tools and technologies used in web application development
—To distinguish between a front end, backend, control flow, and data flow in modern web applications
—Understand and implement web applications in n-tier architecture.
—Design and implement accessible and user-friendly graphical user interfaces.
—Manipulate data from databases and web applications
—Use JavaScript to add interactivity and dynamic content.
—Interpret online web programming documentation (e.g., APIs)
—Exposure to different tools and design patterns (MVC) that are used to develop web applications.

강의 진행방법

강의	토론/발표	실험실습/현장학습	PBL

In the beginning, the basic knowledge of web programming (i.e., applications, unique features, HTML tags, etc.) will be discussed and analyzed. Later, tutorials on how to write, compile, and run programs using HMTL 5 language will be given. After that, all major concepts will be discussed along with hands-on experience, and coding into multiple files will be taught to students. The focus will be on covering the most recent and relevant concepts related to web applications. More specifically, we will adopt the following mechanism to proceed with the web programming course in the coming semester.

→Up-to-date material (concepts, code, workflows, diagrams, and tutorials) is collected from heterogeneous sources and websites, and delivered to students in the form of lecture notes.

→The class is conducted with hands-on practice (or examples) so that students can become familiar with web designing coding and tool knowledge.

→Knowledge of various IDEs (Notepad ++, XAMP, Android studio, etc.), app development tools, code configuration, debugging, etc. is provided to meet the needs and expectations of the market.

→Execution of visualization libraries and their codes will be provided to students to prepare them for future IT markets. The text-based web is currently fiddling. However, we will cover both text and visual-based data.

평가요소	성적 평가방법	비율
출석	Attendance data	10
중간고사	Question paper and Answer Sheet's grading	25
기말고사	Question paper and Answer Sheet's grading	35
레포트	Problem solving through code and critical report submission	20
그룹 프로젝트	Development project, demo, and presentations	10
기타		0
기타2		0
합 계		100

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과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
To be determined and aligned with the course contents.	TBD	Word/PPT file alongwith code

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	WEB Programming with HTML5, CSS, and JavaScript	John Dean	Jones & Bartlett	2019
부교재	A Complete Web Development Guide	Northel team	Northel	2021
참고자료	Fundamentals of Web programming	Anuj Sharma	Excel	2020

강의 규정 (학습자 유의사항)

Attendance and group learning will be vital throughout the semester. Lecture notes will be uploaded right after each class on Cyber Campus for students along with the lab practice. Participants must practice each concept regularly. Furthermore, the following rules are rigorously applied to maintain the importance of this course. 1) Attendance and attention are extremely important to understand the concepts sequentially. Also, F grade on four absences. 2) Practicing each concept with code multiple times after the class is required. 3) The ability to learn and implement each concept by him/herself is essential. 4) Keeping important deadlines for each task and discipline in a class is a must. 5) Planning separate time for both theory and practice is essential throughout the semester. 6) There is no compromise on class discipline and ethics.

장애학생 지원내용

Students can meet in person with the Professor for any help. In addition, such problems can be solved via group study. Additional material and helpful links will also be provided for the students' help in each lecture as well as class. Furthermore, students will be mapped into groups for collaborative work and assignment solutions. Furthermore, students are allowed to contact the Professor anytime via email with their questions off/in-class time. Lecture notes will include links to relevant sites for detailed knowledge. English subtitles will be included in lecture slides for Korean students, in case they register in this class. Also, lecture material and course speed will be adjusted considering the students' status.

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주차	기 간	수 업 내 용 및 학 습 활 동	비 고
1	03/04 ~ 03/10	Introduction to web programming {Goals, Course Contents, Learning Outcomes, the importance, examples of designing basic HTML code, and setting up the development environment (editors and XAMP)	
2	03/11 ~ 03/17	[Single page application] Basic HTML tags/attributes, [inline, and offline] CSS use in web applications, Tables and lists with custom data, headings, data formatting, linking multiple web pages, etc.	Lab Practice of the entire lecture.
3	03/18 ~ 03/24	[Front end development] Static and dynamic forms development, action listeners in PHP, bootstrap applications to web elements, JavaScript basics (functions, variables, operators, dates), AngularJS, Io	Lab Practice of the entire lecture.
4	03/25 ~ 03/31	[Web API Use] Creating visuals in web applications using chart.js and High-Charts libraries, understanding of div and data management in web pages, API use, and data customization in different forms.	Lab Practice of the entire lecture.
5	04/01 ~ 04/07	Interactive Sites (JS introduction): Introduction, JS placement in HTML Codes, variables, constants, functions, objects, arrays, array searching, Array sorting, action listeners, etc.	Lab Practice of the entire lecture.
6	04/08 ~ 04/14	JS Advanced: jQuery functions, dates formatting, Set & Get Methods, mathematical functions, decision-making, switches, classes, sets, visualization data preparation, AJS and API calls, etc.	Lab Practice of the entire lecture.
7	04/15 ~ 04/21	PHP Basics: Syntax, Variables, Echo, Data types, Strings, Numbers, Castings, Math Operations, Conditions, Operators, Switch, Loops, Functions, Regular Expressions, etc.	Lab Practice of the entire lecture.
8	04/22 ~ 04/28	Mid Term	
9	04/29 ~ 05/05	PHP Advanced: Date & time formatting, File Handling, Form Handling, Session Information analysis, Data preparation for Visualizations, Callback Functions, JSON Data Encoding/Decoding, Exception, etc.	Lab Practice of the entire lecture.
10	05/06 ~ 05/12	AJAX (concepts, examples, and practical utility). Introduction to different data formats (XML, JSON, CSV, etc.), and working examples of different web APIs, Event listeners and DOM manipulation	Lab Practice of the entire lecture.
11	05/13 ~ 05/19	Design patterns, model view controller (MVC), the introduction of the best 15 databases, request and response mechanisms, data packing/unpacking, data & data flows, and exposure to MooTools.	Lab Practice of the entire lecture.
12	05/20 ~ 05/26	Introduction to Backend Web Programming [Introduction to server-side technologies (Node.js, Express.js), Setting up a basic server with Node.js, and Handling HTTP requests and sending responses]	Lab Practice of the entire lecture.
13	05/27 ~ 06/02	Working with Databases [Introduction to databases (SQL vs NoSQL), Setting up a medium complexity database (e.g., SQLite, MongoDB), Connecting a web app to a database (CRUD operations)]	Lab Practice of the entire lecture.
14	06/03 ~ 06/09	Data manipulation in a DB-linked Website [Submitting user data to DB, retrieving data from the DB & Displaying in diverse formats, CRUD application designing and implementation]	Lab Practice of the entire lecture.
15	06/10 ~ 06/16	Final exam & presentations	