**Database Technologies for Web Applications**

**MASY1-GC 3540 | 200 | Fall 2024 | 09/09/2024 – 12/09/2024 | 3 Credit**

**Modality: Online(Sy)**

**Course Site URL**: <https://brightspace.nyu.edu/>

**General Course Information**

**Name/Title:** Ankur Agrawal, Adjunct Instructor

**NYU Email:** aa12540@nyu.edu

**Class Meeting Schedule:** 09/09/2024 – 12/09/2024 | Mondays | 06:20pm - 08:55pm

**Class Location:** TBA

**Office Hours:** By appointment on Google Meet

**Description**

This course examines the database and related applications technologies that have come to be critical in the enablement of web-based applications for e-commerce in its many variations. This lab-based course provides an in-depth study of using database technologies in the context of the Internet, including Oracle, and open-source variations such as MySQL; the role of related scripting languages such as PHP. Also covered are the theory and practice involved in dynamic, database driven websites that are controlled using CSS and other web-enabling artifacts. Upon completion of this course, the student will understand the features of page scripting languages; understand the database options available for the web-based applications; explain how these can be combined with each other and with additional web-based tools to create effective web-based applications.

**Prerequisites**

3500 – Database Design and Management

**Learning Outcomes**

At the conclusion of this course, students will be able to:

* Construct HTML pages and specifically containing HTML grids and forms
* Integrate CSS with HTML to improve visual web page presentation
* Create database tables to support web interaction
* Construct an end-to-end database driven web application
* Develop PHP or Python code and integrate that with HTML and database to build web applications using modern web frameworks.
* Select the appropriate features of page scripting languages and database options for web-based applications

**Communication Methods**

Be sure to turn on your [NYU Brightspace notifications](https://www.nyu.edu/servicelink/KB0018507) and frequently check the “Announcements” section of the course site. This will be the primary method I use to communicate information critical to your success in the course. To contact me, send me an email. I will respond within 24 hours.

**Structure | Method | Modality**

There are 14 session topics in this course. The session topics are organized into three (3) areas of study: 1) HTML and CSS, 2) PHP, and 3) MySQL.

Active learning experiences and small group projects are key components of the course. Assignments, papers, and exams will be based on course materials (e.g., readings, videos), lectures, and class discussions. Course sessions will be conducted synchronously on NYU Zoom, which you can access from the course site in [NYU Brightspace](https://brightspace.nyu.edu/).

**Expectations**

Learning Environment

You play an important role in creating and sustaining an intellectually rigorous and inclusive classroom culture. Respectful engagement, diverse thinking, and our lived experiences are central to this course, and enrich our learning community.

Participation

You are integral to the learning experience in this class. Be prepared to actively contribute to class activities, group discussions, and work outside of class.

Assignments and Deadlines

Please submit all assignments to the appropriate section of the course site in [NYU Brightspace](https://brightspace.nyu.edu/). If you require assistance, please contact me BEFORE the due date.

Course Technology Use

We will utilize multiple technologies to achieve the course goals. I expect you to use technology in ways that enhance the learning environment for all students.

**Generative AI Use**

**Not permitted**

You can only learn from the work you do. Unless otherwise stated, you should not use generative AI tools to create any part of an assignment in this course; every submission should be entirely your work (for example from an NYU course).

This course assumes that work submitted by students – all process work, drafts, brainstorming artifacts, final works – will be generated by the students themselves, working individually or in groups as directed by class assignment instructions. As will any other class work generated by anyone other than the students (by other students, by a company, or by using generative AI tools), use can be a violation of Academic Integrity policy.

Feedback and Viewing Grades

I will provide timely meaningful feedback on all your work via our course site in NYU Brightspace. You can access your grades on the course site Gradebook.

Attendance

I expect you to attend all class sessions. Attendance will be taken into consideration when determining your final grade.

Refer to the [SPS Policies and Procedures page](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) for additional information about attendance.

**Textbooks and Course Materials**

Recommended (but not required) Textbooks

* Murach’s HTML and CSS (5th Edition)

**Author** - Zak Ruvalcaba and Anne Boehm

**ISBN-13: 978-1-943872-86-2**

* Murach’s PHP and MySQL (4th Edition)

**Author** - Joel Murach and Ray Harris

**ISBN-13: 978-1-943873-00-5**

* I will also provide session by session content, which will be posted online.

**Grading | Assessment**

Your grade in this course is based on your performance on multiple activities, assignments and projects. I will update the grades on the course site each time a grading session has been completed— typically seven days following the completion of an activity.

DESCRIPTION PERCENTAGE

Assignments 60%

Projects 30%

Participation 10%

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TOTAL POSSIBLE 100%

*See the* [*“Grades” section of Academic Policies*](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html#Graduate1) *for the complete grading policy, including the letter grade conversion, and the criteria for a grade of incomplete, taking a course on a pass/fail basis, and withdrawing from a course.*

**NYU SPS Graduate Grading Scale**

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | 95-100 | 4.000 | **Exceptional:** Demonstrates exceptional mastery of all learning outcomes of the course and thorough and complete understanding of all concepts. |
| **A-** | 90-94 | 3.667 | **Excellent:** Demonstrates highly competent mastery of all learning outcomes of the course and strong understanding of all concepts. |
| **B+** | 87-89 | 3.333 | **Very Good; exceeds course standards:** Demonstrates mastery of all learning outcomes of the course and understanding of core concepts. |
| **B** | 83-86 | 3.000 | **Good; meets course standards:** Demonstrates mastery of some learning outcomes; understanding of some core concepts could be improved. |
| **B-** | 80-82 | 2.667 | **Somewhat Satisfactory;** meets some course standards and requires improvement: Demonstrates basic understanding of some learning outcomes; improved understanding of all core concepts is needed. |
| **C+** | 77-79 | 2.333 | **Less than Satisfactory; requires significant improvement:** Demonstrates partial understanding of all learning outcomes and core concepts; requires significant improvement. |
| **C** | 73-76 | 2.000 | **Unsatisfactory; requires substantial improvement:** Demonstrates partial understanding of some learning outcomes and core concepts; requires substantial improvement. |
| **C-** | 70-72 | 1.667 | **Unsatisfactory; requires extensive improvement:** Demonstrates poor understanding of all learning outcomes and core concepts; requires extensive improvement. |
| **F** | Below 70 |  | **Fail:** Demonstrates minimal to no understanding of all key learning outcomes and core concepts; work is unworthy of course credit towards the degree. |
| **P** |  |  | **Passing:** If a Pass/Fail grade is allowed, the choice of pass/fail must be made prior to the completion of the fifth week of the term. |

**Course Outline**

**Start/End Dates:** 09/09/2024 – 12/09/2024 | Mondays

**Time:** 06:20pm - 08:55pm

**No Class Date(s):** Monday - 10/14/2024

**Special Notes:** Tuesday 10/15/2024 – Legislative Monday: Classes will meet according to a Monday schedule on Tuesday, October 15, 2024

**Session 1,** 09/09/24

**Introduction to Web development**

* Introduction and History
* Software download and installation

**Session 2,** 09/16/24

**Basics of HTML 1**

* HTML Syntax
* Introduction to different HTML elements

**Session 3,** 09/23/24

**Basics of HTML 2**

* Lists and Links
* Images
* Creating navigation menus

**Session 4,** 09/30/24

**Basics of CSS**

* Providing styles
* Using basic selectors
* Specify measurements and colors
* Work with text

**Session 5,** 10/07/24

**Project based on HTML and CSS**

**Session 6,** 10/15/24

**Basics of PHP 1**

* Embedding PHP in HTML
* Data types
* Variables and Constants
* Comments and Statements
* $\_Get and $\_POST array

**Session 7,** 10/21/24

**Basics of PHP 2**

* Conditional expressions
* Loops
* Pass control to another page
* Some built-in functions

**Session 8,** 10/28/24

**Basics of PHP 3**

* Work with form data
* Strings and numbers
* Create Functions and Objects
* Cookies and sessions
* Regular expressions

**Session 9,** 11/04/24

**Project based on PHP**

**Session 10,** 11/11/24

**Basics of MySQL 1**

* Schema Diagrams
* Primary and foreign keys
* Creating databases and tables
* Inserting rows
* Select statement

**Session 11,** 11/18/24

**Basics of MySQL 2**

* Update and delete statements
* Join statements
* Group by and Having clause

**Session 12,** 11/25/24

**Using PHP with MySQL**

* Connect to a database and handle exceptions
* Get and Modify data

**Session 13,** 12/02/24

**Student Presentations**

* Student presentations on select research topics

**Session 14,** 12/09/24

**Student Presentations**

* Student final project presentation

**NOTES:**

The syllabus may be modified to better meet the needs of students and to achieve the learning outcomes.

The School of Professional Studies (SPS) and its faculty celebrate and are committed to inclusion, diversity, belonging, equity, and accessibility (IDBEA), and seek to embody the IDBEA values. The School of Professional Studies (SPS), its faculty, staff, and students are committed to creating a mutually respectful and safe environment (*from the* [*SPS IDBEA Committee*](https://www.sps.nyu.edu/homepage/about-us/idbea/about-idbea.html)).

**New York University School of Professional Studies Policies**

1. Policies - You are responsible for reading, understanding, and complying with [University Policies and Guidelines](http://www.nyu.edu/about/policies-guidelines-compliance.html), [NYU SPS Policies and Procedures](http://sps.nyu.edu/academics/academic-policies-and-procedures.html), and [Student Affairs and Reporting](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/student-services.html).

2. Learning/Academic Accommodations - New York University is committed to providing equal educational opportunity and participation for students who disclose their dis/ability to the [Moses Center for Student Accessibility](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html). If you are interested in applying for academic accommodations, contact the [Moses Center](https://www.nyu.edu/students/communities-and-groups/student-accessibility/academic.html) as early as possible in the semester. If you already receive accommodations through the Moses Center, request your accommodation letters through the [Moses Center Portal](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html) as soon as possible ([mosescsa@nyu.edu](mailto:mosescsa@nyu.edu) | 212-998-4980).

3. Health and Wellness - To access the University's extensive health and mental health resources, contact the [NYU Wellness Exchange](https://www.nyu.edu/students/health-and-wellness/wellness-exchange.html). You can call its private hotline (212-443-9999), available 24 hours a day, seven days a week, to reach out to a professional who can help to address day-to-day challenges as well as other health-related concerns.

4. Student Support Resources - There are a range of resources at SPS and NYU to support your learning and professional growth. For a complete list of resources and services available to SPS students, visit the [NYU SPS Office of Student Affairs site](https://www.sps.nyu.edu/homepage/student-experience/resources-and-services.html).

5. Religious Observance - As a nonsectarian, inclusive institution, NYU policy permits members of any religious group to absent themselves from classes without penalty when required for compliance with their religious obligations. Refer to the [University Calendar Policy on Religious Holidays](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html) for the complete policy.

6. Academic Integrity and Plagiarism - You are expected to be honest and ethical in all academic work. Moreover, you are expected to demonstrate how what you have learned incorporates an understanding of the research and expertise of scholars and other appropriate experts; and thus recognizing others' published work or teachings—whether that of authors, lecturers, or one's peers—is a required practice in all academic projects.

Plagiarism involves borrowing or using information from other sources without proper and full credit. You are subject to disciplinary actions for the following offenses which include but are not limited to cheating, plagiarism, forgery or unauthorized use of documents, and false form of identification

[Turnitin](https://www.nyu.edu/servicelink/KB0018471), an originality detection service in NYU Brightspace, may be used in this course to check your work for plagiarism.

Read more about academic integrity policies at the NYU School of Professional Studies on the [Academic Policies for NYU SPS Students](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) page.

7. Use of Third-Party Tools - During this class, you may be required to use non-NYU apps/platforms/software as a part of course studies, and thus, will be required to agree to the “Terms of Use” (TOU) associated with such apps/platforms/software.

These services may require you to create an account but you can use a pseudonym (which may not identify you to the public community, but which may still identify you by IP address to the company and companies with whom it shares data).

You should carefully read those terms of use regarding the impact on your privacy rights and intellectual property rights. If you have any questions regarding those terms of use or the impact on the class, you are encouraged to ask the instructor prior to the add/drop deadline.