# ITE404 - Web Application Programming

AUIS - Department of Information Technology

## 1 Course Information

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|---|---|
| Course ID | ITE404 |
| Course Title | Web Application Programming |
| Course Level | Undergraduate |
| Course Design | Required for all IT major/minor students<br>General elective for the rest |
| Number of Credits | 3 |
| Prerequisites | ITE303, ITE304 and ITE305 |
| Class Location | B-F1-16 |
| Meeting Time | Mondays from 12:30 to 14:00<br>Wednesdays from 12:30 to 14:00 |

## 2 Instructor Information

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|---|---|
| Instructor | Yad Tahir, PhD |
| Email Address | yad.tahir@auis.edu.krd |
| Office Location | B-F2-15 |
| Office Hours | Sundays from 14:00 to 15:30<br>Thursdays from 14:00 to 15:30 |

## 3 Course Description

This course introduces students to Web server programming and scripting. It concentrates on familiarizing students with a server-side programming language such as PHP. Students will learn valuable skills necessary for developing HTTP-based applications. This course builds on ITE304, Fundamentals of Web Systems, to introduce the students to deeper understandings of dynamic Web systems. The course starts by introducing server-side programming fundamentals such as cookies, sessions and HTTP methods handling. Through examples, students will engage in building database-driven applications. Advanced topics such as RESTful web services, rich client integration, and web performance optimization are also well covered in this course.

## 4 Learning Outcomes

Upon successful completion of the course, the students will be able to:

- Understand server-side programming and its role in developing dynamic Web applications.
- Read, analyze, write, and test Web applications written in a familiar server-side programming language such as PHP.
- Develop Web applications that involve user data processing through Web forms and integration of the data to static parts of Web pages.
- Develop database-driven applications using a familiar database management system such as MySQL.
- Develop RESTful web services to create JSON APIs that are utilizable by rich Internet applications.

## 5 Program Goals

- **IT Core 1:** Classify a problem and define computing requirements appropriate to its solution. [Knowledge],[Comprehension]
- **IT Core 2:** Apply knowledge of current techniques, skills, and tools necessary to support best computing practices within the Information Technology field. [Application]
- **IT Core 4:** Identify and recognize user needs in the selection, creation, evaluation and administration of computer-based systems. [Knowledge], [Analysis]

## 6 Materials and Access

Important material from the text and outside sources will be covered during our scheduled class meetings. Regular attendance and in-class note-taking are critical. This course requires a lot of time, effort and energy. Students are strongly encouraged to **do background reading before and after** each class to gain a better grasp of the material. Corresponding chapters for each lecture will be indicated. The primary references are:

| | |
|---|---|
| Title | PHP for the Web, visual quick start guide - 5th Edition |
| Author(s) | Larry Ullman |
| Publisher | Peachpit Press |
| ISBN | 978-0-134-29125-3 |
| URL | `https://amzn.to/2wDOuRX` |

| | |
|---|---|
| Title | PHP and MySQL Web Development - 5th Edition |
| Author(s) | Luke Welling and Laura Thomson |
| Publisher | Addison-Wesley |
| ISBN | 978-0321833891 |
| URL | `https://amzn.to/2xGCG4C` |

| | |
|---|---|
| Title | PHP Web Services: APIs for the Modern Web |
| Author(s) | Lorna J. Mitchell |
| Publisher | O'Relly Media |
| ISBN | 978-1449356569 |
| URL | `https://amzn.to/2LV7Qbu` |

Most of the material discussed in this course are well-explained in the titles above. These references are optional and can be replaced by any other online sources as long as the required topics are covered.

Going through the following classic textbook is also recommended:

| | |
|---|---|
| Title | PHP MySQL Website Programming: Problems, Design, Solution |
| Author(s) | Chris Lea and *et al* |
| Publisher | Wrox Press |
| ISBN | 978-1861008275 |
| URL | `https://amzn.to/2xHFONy` |

### 6.1 Slides

The PPT slides of this course are designed to assist the instructor **only**. They contain very limited information. Thus, relying merely on the slides is **NOT** sufficient to this course.

### 6.2 Required Software

Students are required to use the following software:

- A PHP web server such as Apache HTTP server or WAMP.
- MySQL as a backend database server. This can be any edition.
- A PHP IDE or editor such as Atom, NetBeans ... etc.

## 7 Grading Procedures

| **Assessment Type** | **Grade %** |
|---|---|
| Multiple Quizzes | 10 |
| Course Activities | 5 |
| 2 Coursework Assignments (randomly chosen from out of 4) | 20 |
| 2 Periodic Exams (20% each) | 40 |
| Comprehensive Final Exam [a] | 25 |
| **Total** | **100** |

[a] The final exam for students with grade of **60**+ is optional. They can choose to scale up their portfolio grade by 25%.

## 8 Grading Scale

| | | | |
|---|---|---|---|
| A | (4.0) | 93 - 100 | Superior |
| A - | (3.7) | 90 - 92 | |
| B + | (3.3) | 87 - 89 | Good |
| B | (3.0) | 83 - 86 | |
| B - | (2.7) | 80 - 82 | |
| C + | (2.3) | 77 - 79 | Satisfactory |
| C | (2.0) | 73 - 76 | |
| C - | (1.7) | 70 - 72 | |
| D + | (1.3) | 67 - 69 | Unsatisfactory |
| D | (1.0) | 60 - 66 | |
| F | (0) | Below 60 | Fail |

## 9 Attendance policy

Students are expected to attend all scheduled classes, arrive on time, and remain in class until dismissed. Tardiness and early departure are disruptive for students and the teacher and are unacceptable. Attendance will be taken at the beginning of each class.

As per university policy for classes that meet **two** times a week at the **sixth** absence the student will be dismissed from the course with a grade of **F**. This cutoff is **absolute**. Per university policy as stated in the Academic Catalog, there are no excused absences. At the penultimate absence, the professor must notify students via e-mail that they are in danger of failing the course, with a copy to the Dean of Students.

# 10 Course Policies and Expectations

## 10.1 Classroom Conduct

In this course, a premium is placed on listening, discussion, and participation. These sorts of activities are only possible in a classroom where the person speaking is accorded respect. In short, we all should listen to the one person who is speaking.

Students are expected to behave in a collegial manner at all times when in class. Rude, disrespectful, aggressive, or threatening language or behavior will not be tolerated, and students displaying this will be removed from class. Attire should be appropriate for university students. Distracting behavior will not be tolerated, and students behaving in this way will be asked to leave the class. Examples of distracting behavior include:

- Speaking languages other than English
- Using a cell phone in any way, shape or form
- Any other behavior which a student is warned against during class

Professionalism and ethical behavior are expected from students. Your instructor is not an encyclopedia, nor this course encourages memorization. Instead, this course aims to develop a deep understanding of the material. Students conduct should be guided by the AUIS Honor Code and the AUIS Academic Catalogue (both available online at www.auis.edu.krd).

## 10.2 Office Hours

All students are invited to visit the instructor in his office, outside of class time. Apart from office hours, students can **make appointments** to visit at other times. Visits during office hours may be used to ask questions about the course material and content, clarify assignments or graded tests, explore ideas or topics related to or extending from the course material, and other course-related matters.

## 10.3 Makeup Exams and Extra Credit Policy

There are no makeup exams or extra credit available in this course.

## 10.4 Expectations of Student Time

AUIS adheres to the United States federal definition of a credit hour, as established by the US Department of Education. As a four credit-hour course, you are expected to attend four hours of direct instruction per week, and spend a minimum of eight hours out of class per week in homework, studying, preparing, and otherwise engaging with the material of this course.

### 10.5 Late or Missed Submissions

Time-management and the meeting of harsh deadlines are part of the soft skills expected of all AUIS graduates. As a result, students should submit all coursework by the published deadline.

A coursework submitted within **72 hours** after the deadline is considered as a **late submission**. Each student can have **two** late submissions. A **penalty of 25 percentage marks** will be applied to each late submission, i.e. the submitted coursework will be graded out of 75%. Any additional late submissions will be awarded a mark of **zero** and there will be no make-ups offered for missed assignments.

### 10.6 Grade Disputes

Any questions about a grade earned on an assignment or test should be brought to the instructor. All assignments may be discussed in details during office hours, and any disputes concerning grades may be addressed at that time. If there is a dispute concerning the final grade for the course, students have the right to make a formal grade appeal. Details on this process can be found in the Academic Catalog.

### 10.7 Moodle

This course has a Moodle site that will be used for announcements and posting extra material. Enrollment is **mandatory**. Please make sure that you have enrolled yourself into right section. The enrollment code will be provided during our first class meeting.

## 11 Academic Integrity

Academic Integrity is honest behavior in a school setting. Academic integrity is more than the absence of cheating. It is necessary for students to truly learn new skills and develop as human beings. By struggling with her own studies and by making honest mistakes and discoveries, a student learns about the world and herself. Using another's work inappropriately prevents this intellectual and emotional growth.

Academic Dishonesty (i.e, "cheating") is any form of deceit, fraud, or misrepresentation in academic work. Academic dishonesty is the opposite of learning, because it prevents the student-writer from genuinely learning and responding to material. Plagiarism is one of the most serious forms of academic dishonesty.

Plagiarism is using other people's ideas and/or words without clearly acknowledging the source of the information. If a student uses content or grammatical structures from the internet, a professional writer, or another

student and does not inform the reader, he plagiarizes. A student who allows another student to use his writing without attribution is also guilty of plagiarism.

Cheating will not be tolerated in this class. All major written assignments completed outside of class time must be submitted via www.turnitin.com. A student found to be cheating for the first time will receive a zero for the assignment and the Dean of Students will be notified. In the event of a second offense confirmed by the Dean of Students, the student will fail the course. A third instance of cheating will result in that student being dismissed from the American University of Iraq, Sulaimani. Students are directed to the AUIS Honor Code and the Academic Integrity policy section of the Academic Catalog (available online at www.auis.edu.krd). These documents provide guidance in cases of academic dishonesty, so we should all be familiar with them.

## 12 Revisions to the Syllabus

This syllabus is designed around the course description proposed and announced to the students. It is subject to change. It is the duty of the instructor to inform students of changes in a timely fashion. Students are obliged to be cognizant of any change.

## 13 Course Schedule

| Week | Starting Date | Topic |
|---|---|---|
| 1 | September 1, 2019 | Introduction to Web Programming and PHP |
| 2 | September 8, 2019 | Basic PHP Syntax - Part 1 |
| 3 | September 15, 2019 | Basic PHP Syntax - Part 2 |
| 4 | September 22, 2019 | Functional Programming with PHP |
| 5 | September 29, 2019 | HTTP Methods in PHP |
| 6 | October 6, 2019 | MySQL and PHP - Part 1 |
| | | **Assignment 1 deadline on October 7, at 9 A.M.** |
| 7 | October 13, 2019 | MySQL and PHP - Part 2 |
| 8 | October 20, 2019 | Cookies and Sessions |
| | | **Exam 1 on October 21 - During Class Time** |
| 9 | October 27, 2019 | Secure Web Applications |
| | | **Assignment 2 deadline on October 28, at 9 A.M.** |
| 10 | November 3, 2019 | PHP Web Services and Web 2.0 |
| | | **Assignment 3 deadline on November 4, at 9 A.M.** |
| 11 | November 10, 2019 | PHP and JavaScript Programming - Part 1 |
| | | **Exam 2 on November 11 - During Class Time** |
| 12 | November 17, 2019 | PHP and JavaScript Programming - Part 2 |
| 13 | November 24, 2019 | Course Closure |
| | | **Assignment 4 deadline on November 25, at 9 A.M.** |