

44-563 Developing Web Applications and Services - Fall 2016

Course Description. Technologies and protocols supporting web applications and web services. Students gain experience in client-side and server-side programming.

Prerequisites. CSIS 44-241 (Computer Programming II) and CSIS 44-460 (Database Systems), each with a grade of C or better.

Course Objectives. After successful completion of this course, students should be able to:

1. Have been exposed to a variety of programming languages and systems
2. Understand key concepts of web applications
3. Understand key concepts of programming and data structures
4. Understand separation of concerns and good architecture design
5. Represent information using modern data formats
6. Explore popular frameworks for building web sites, apps, and services
7. Implement web applications
8. Implement HTTP services for RESTful applications
9. Implement responsive applications using HTML, CSS, JavaScript, jQuery and AJAX and explore some of the popular libraries available
10. Apply knowledge of computing and mathematics
11. Analyze a problem, and identify and define the requirements appropriate to its solution
12. Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
13. Function effectively on teams to accomplish a common goal
14. Recognize the need for and engage in continuing professional development
15. Use current techniques, skills, and tools necessary for computing practice

Software and resources. Students must have access to the following software including, but not limited to:

- Their campus-assigned laptop for every class session
- Free Git distributed version control system
- Free BitBucket and/or GitHub educational accounts
- Free Online W3C Markup Validation Service
- Free text editors and integrated development environments as appropriate (e.g. Sublime text, Visual Studio Code, WebStorm)
- Various tools and libraries as directed by the instructors.

Recommended.

- *Eloquent JavaScript* by Marijn Haverbeke (<http://eloquentjavascript.net/>)
- *JavaScript: The Good Parts* by Douglas Crockford
- *Express in Action: Writing, building, and testing Node.js applications* by Evan Hahn
- *Web development with Node and Express* by Ethan Brown

Northwest Online Tools. Course materials are distributed through the course website at Northwest Online. To access the site, go to <http://www.nwmissouri.edu/online/>. Click the link for

Technical Support to see the basic technical requirements your computer system must satisfy. Use the links to configure and test your devices.

Accessing Course Materials. To access course materials go to the Northwest Online site and log in. Your login ID is your Northwest Student Number (S-----). Your password is your social security number, or your 919 number, without dashes. If you are a returning online student, your password will be the same as last trimester. During the first week of classes, *all* students are required to visit the site, check that their computer system meets the technical requirements, and complete the Student Orientation Course, which shows how Northwest Online operates.

Northwest Online Helpdesk. for Canvas and eConferencing Software

Hours: 24/7/365

helpdesk@northwestonline.org

☎ 877.740.2213

NWMSU Helpdesk. for General Questions on Campus Computer, Software, and Networking

Hours: Monday-Thursday 8-9; Friday 8-5

helpdesk@nwmissouri.edu

☎ 660.562.1634

Announcements and email. Announcements are communicated via the **Announcements** page on the course website and your Northwest Missouri State University email account. It is your responsibility to check each of these sources daily. Note that you *must* use your Northwest Missouri State University email account on the Northwest Online site. All emails in this class will be sent to your Northwest address. **Emails must include the course number and section (e.g., 44-563-01) in the subject line.** Emails without an appropriate entry for the subject may not be opened. Emails *must* include a useful signature; unsigned emails may not receive a reply.

Professionalism. Students are expected to behave in a professional manner in all course interactions. Emails and other electronic communications should be politely written, use proper grammar, and follow the rules of capitalization.

Use of Publicly Available PCs. All code that you store on a hard drive in a public lab or classroom must be moved to your student storage when you leave the PC. Hard drive space is not intended for private storage.

Academic Honesty. Northwest Missouri State University *Graduate Academic Integrity Policy* is given at <http://www.nwmissouri.edu/library/courses/evaluation/policies.htm#grad>. In addition, students are expected to read and understand the *Computer Science and Information Systems Academic Integrity Policy* at <http://www.nwmissouri.edu/csis/pdf/AcademicIntegrityCSI.doc>. This document clearly explains those types of behavior that would be considered academic dishonesty. You are responsible for reading this document and abiding by the guidelines described therein.

Disability Accommodations. Students in this course who need disability accommodations/modifications should present a copy of their official Northwest accommodation letter from the LAP/S Committee to the instructor during private office hours as early in the term as possible. Additional information can be found online at <http://www.nwmissouri.edu/swd/index.htm>.

Statement of Non-Discrimination. Northwest Missouri State University does not discriminate on the basis of race, color, creed, religion, national origin, sex, age, or handicap in admission or access to, or treatment or employment in, its programs and activities. Any person having inquiries concerning Northwest Missouri State University's compliance with the regulations implementing Equal Employment Opportunity Commission (EEOC) and Americans with Disabilities Act (ADA) guidelines is directed to contact the President's Office, Northwest Missouri State University, 800 University Drive, Maryville, MO 64468-6001, (660) 562-1110. Any person may also contact the

Assistant Secretary for Civil Rights, U.S. Department of Education, regarding the institution's compliance with the regulations implementing EEOC and ADA guidelines.

Attendance: You are expected to attend all class meetings, arrive on time, and actively participate in all activities during class. The CSIS attendance policy is posted on the course website. You are responsible for reading this document and abiding by the guidelines described therein. **If you miss more than three classes, you need to meet with the Graduate Program Director¹, and discuss your absence.** A student who misses such an exercise due to an unexcused absence will not be allowed to make it up and will receive a zero. Excused absences include attendance at a university-sponsored event (documented with an excuse signed by the university sponsor prior to the event) or by circumstances considered adequately extenuating by the course instructor.

Exam Policies: Dates and other details will appear in course announcements. Tentative dates are given in the detailed calendar (see the syllabus). Occasionally students miss examinations. Sometimes the student knows about these absences in advance, and sometimes they happen unexpectedly.

- If you know in advance that you will be absent during an exam, you must meet with the instructor and the graduate program director before the date of the exam and discuss the cause of absence. If the cause seems reasonable, (e.g., legitimate emergency, medical, and university approved absences), then the absence may be excused and arrangements will be made for a make-up exam. Note that documentation is required to support the cause.
- If you miss an exam unexpectedly and wish to have the absence considered excused, then you must meet with the instructor and the Graduate Program Director¹ at the earliest opportunity possible after the absence, and provide documentation to support your claim that the absence should be considered excused.
- Exams missed with an excused absence and supporting documentation will be dealt with on an individual basis.
- For unexcused exam absences, you will unfortunately receive a score of zero points.

Due Dates: Each assigned, graded activity will have a due date. Late assignments lose 20% per day over five days, after which there is no credit possible.

Individual Assignments: All work is individual unless *specifically designated as a group submission*. You may – and are typically encouraged to – discuss your ideas, approaches, and efforts with other students in the class. However:

- Any external sources consulted (including others) must be documented in your submission; failure to give credit for help received on a homework assignment constitutes plagiarism.
- **All submissions and content, including work submitted to a shared repository must be your own creation and reflect your own work throughout.**
- Submitting any files, work, code, or content copied from another student or external resource (credited or not) constitutes academic dishonesty and is subject to significant penalties as described in the catalog.

Scoring: Your score on each component will be posted in the online gradebook as soon as that component has been graded. You are responsible for checking the gradebook at least once a week to ensure that your grades are properly posted. *If there is an error in grading, you must bring it to the attention of the class assistant or instructor within two weeks of the time the grade is posted.*

¹ The Graduate Program Director is Dr. Ajay Bandi (ajay@nwmissouri.edu, 2250 Colden Hall, 660.562.1199)

Grading Criteria (may vary):

Category	Points
Team Assignments	60-80
Team Workshop	10
Discussions	20-30
Coding Exercises	20-30
Quizzes	20-24
Exams	200
Final Exam	200
Total Points	504-534

Grading Scale:

Undergraduate Credit		Graduate Credit	
Percent Range	Grade	Percent Range	Grade
88-100%	A	90-100%	A
>= 78% and < 88%	B	>= 80% and < 90%	B
>= 70% and < 78%	C	>= 70% and < 80%	C
>= 60% and < 70%	D	>= 60% and < 70%	D
below 60%	F	below 60%	F

Grade of Incomplete (I): Following Northwest Missouri State University policy, incomplete grades may only be given in extreme circumstances, such as illness, death in a student's immediate family, or similar circumstances beyond a student's control, and the student was unable to complete a small portion of the course work.

Academic Calendar: <http://www.nwmissouri.edu/academics/calendar.htm>

Final Exam Schedule: <http://www.nwmissouri.edu/registrar/finals.htm>

Classes that meet for the first time in the week:	Date and hour of final examination:	44-563 Fall 2016
	Wednesday, Dec. 14	
1:00 Monday	7:30 am - 9:30 am	Sec 5 (Case) & Sec 6 (Qin)
12:00 Monday	11:50 am - 1:50 pm	Sec 4 (Case)
	Friday, Dec. 16	
4:00 or 4:30 Monday	7:30 am - 9:30 am	Sec 3 (Qin)

Tentative Course Outline:

This is a tentative schedule and is subject to change. For exact information, including important dates, check the course website.

Wk	Topics
1	Intro, static pages, HTML5, CSS3
2	Labor Day (no class M) Responsive design
3	JavaScript
4	DOM, JQuery, Workshop 1
5	Node.js, Exam 1
6	Express, Workshop 2
7	Web services, Middleware, HTTP, Workshop 3
8	APIs, REST, SOAP, AJAX, Workshop 4
9	Working with data (JSON, XML) Walkout (no class Fri)
10	CRUD services, Workshop 5
11	Testing and security, Exam 2
12	Full stack apps, persistence, Workshop 6
13	Thanksgiving (no class W & F)
14	Javascript libraries and choosing a stack, Workshop 7
15	Team assignment demos
16	Final Exam

Section 4 (CRN 13848) & Section 5 (CRN 13849)

Instructor: Dr. Denise Case, Assistant Professor

dcase@nwmissouri.edu

Colden Hall 2280 660-562-1136

Office Hours: M 11:00am-12:00pm & 3:00pm-5:00pm, WF 10:00am-12:00pm, or by appt

Section 3 (CRN 13530) & Section 6 (CRN 14945)

Instructor: Dr. Zhengrui (Jerry) Qin, Assistant Professor

zqin@nwmissouri.edu

Colden Hall 1806 660-562-1932

Office Hours: M 9:30am-11:30am, WF 9:30-12:00pm, or by appt

Disclaimer: This syllabus is not a contract and may be modified by the instructor to accommodate schedule constraints, unexpected events, and specific instructional and/or student needs. (See <http://www.nwmissouri.edu/cite/teach/syllabus.htm>.)