



Arthur J. Bauernfeind College of Business

MURRAY STATE UNIVERSITY

Instructor: William F. Lyle

Office: BB 652L

Phone: 809-6217, 2094

E-Mail: wlyle@murraystate.edu

Web Page: <http://campus.murraystate.edu/academic/faculty/wlyle>

Office Hours: 8:00 - 10:30 M W F
8:00 - 9:30 T Th,
Other times available by appointment

DEPARTMENT: Computer Science and Information Systems

COURSE PREFIX: CSC COURSE NUMBER: 430 CREDIT HOURS: 3

I. TITLE: Software Construction

II. COURSE DESCRIPTION AND PREREQUISITE(S): This course is a survey of professional software development tools and practices. Topics include agile development methods, version control, test driven development, unit testing, system testing, continuous integration, bug tracking, software design patterns, documentation, and code quality. Students will complete both individual and team programming projects.

Prerequisite(s): CSC 325 and 425.

III. COURSE OBJECTIVES: The successful student will be able to:

- A. Create user stories and task decomposition to estimate development time.
- B. Use a version control system such as Git;
- C. Use unit testing systems such as JUnit or NUnit;
- D. Use continuous integration systems such as Cruise Control;
- E. Use bug tracking systems such as Bugzilla;
- F. Create internal and external project documentation;
- G. Choose appropriate software design patterns to direct software design.

IV. CONTENT OUTLINE:

- A. Introduction to Course and Tools
- B. Guidelines for Code Quality and Maintainability
- C. Version Control
- D. Test Driven Design, Unit Testing Tools, and Continuous Integration
- E. Understanding and using Design Patterns
- F. Bug Tracking
- G. Program and Project Documentation
- H. Software Deployment

- V. INSTRUCTIONAL ACTIVITIES:** Classroom time will be spent with discussion and demonstration of relevant software tools. Out of class time will be spent reading required textbooks and gaining hands-on experience using the tools in individual and team programming exercises.
- VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:** Some classes may meet in the departmental laboratory.
- VII. TEXT(S) AND RESOURCES:**
Freeman, E., E. Freeman, B. Bates, K. Sierra, E. Robson. (2004). *Head First Design Patterns*. Sebastopol. O'Reilly Media.
Martin, R. C. (2008). *Clean Code: A Handbook of Agile Software Craftsmanship*. Boston. Prentice-Hall.
Pilone, D., R. Miles. (2008). *Head First Software Development*. Sebastopol. O'Reilly Media.
- VIII. EVALUATION AND GRADING PROCEDURES:** Letter grades will be assigned based upon class participation, homework assignments, quizzes, and individual and team software projects. Specifics will be announced in class as the semester progresses.
- IX. ATTENDANCE POLICY:** Students are expected and strongly encouraged to attend all class meetings on time in order to gain maximum benefit from the course. Class attendance will be checked and is a factor in the course grade as reflected in the class participation component of the course grade. Students are responsible for all material missed due to class absences. *Students are expected to adhere to the MSU Attendance Policy on page 10 in the 2014-2015 MSU Bulletin.*
- X. ACADEMIC HONESTY POLICY:**
Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

Violations of Academic Honesty include:

Cheating - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

Fabrication and Falsification - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

Multiple Submission - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

Plagiarism - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

XI. NON-DISCRIMINATION POLICY STATEMENT:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact the Director of Equal Opportunity, 103 Wells Hall. 270-809-3155 (voice), 270-809-3361 (TDD).

- XII. Other:** The College of Business Code of Ethics is available at http://www.murraystate.edu/Libraries/COB_Documents/Code_of_Ethics.sflb.ashx. The collegiate Appeals and Grievance Procedure is available at http://www.murraystate.edu/Libraries/COB_Documents/Appeals_and_Grivance_Procedure.sflb.ashx

Important University Dates:

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| August 19 | First day of classes. Absences will be recorded. |
| August 25 | Last day to add a full semester class. Last day to drop any full semester class with no grade. Last day to change any full semester class from AUDIT to CREDIT. |
| September 1 | Classes dismissed for Labor Day |
| October 2 | Fall Break Begins |
| October 13 | Midterm grades due |
| October 15 | Second half semester classes begin. Last day to change INCOMPLETE grades from Spring/Summer 2014 at Registrar's office. |
| November 3 | Deadline to submit baccalaureate and associate degree applications on MyGate for May 2015 graduation. |
| November 10 | Begin Advance scheduling for Spring 2014. |
| November 17 | Last day to drop a full or second half semester class. Last day to change CREDIT to AUDIT |
| November 26 | Classes dismissed for Thanksgiving Holiday, 7:30 a.m. Offices closed. |
| December 5 | Last day of classes |
| December 9 | 10:30 am, Final exam period for CSC 430 |
| December 13 | 10:00 am, Commencement |
| December 16 | Grades are available on student's MyGate Academic tab. |

Please fill out this page, detach it and return it to Dr. Lyle.

By my signature below, I certify that I have received a copy of the course syllabus for CSC 430 taught by Dr. William Lyle during the Fall Semester of 2014. Furthermore, I certify that I have read and understand the contents of the course syllabus.

Printed Name _____

Signature _____

Date _____

If you want your grades to be posted, please enter a 4-digit number to identify yourself. If you prefer that your grades are not posted, then enter "None".

My 4-digit code: _____