DEPARTMENT: Institute of Engineering

COURSE PREFIX: EGR **COURSE NUMBER:** 140 **CREDIT HOURS:** 3

I. TITLE: Introduction to Computing Applications in Science and Engineering

II. COURSE DESCRIPTION AND PREREQUISITE(S): A course to introduce students to computational techniques employed in scientific, engineering, mathematical and statistical applications. [A high-level programming] language will be used in several related programming projects. The course is designed to meet the needs of students in physics, engineering physics and related sciences in the use of the microcomputer as a tool for the solution of problems.

III. COURSE OBJECTIVES:

The student should gain an understanding of and proficiency in the following topics:

1. To learn basic computer programming techniques (variables, loops, functions, etc).
2. To learn the Java language as means of applying those problems.
3. To learn to write clear, well-documented, understandable computer code.
4. To apply the programming knowledge gained to solve science, math, engineering and statistics problems.

IV. CONTENT OUTLINE:

1. Introduction to Engineering problem solving
2. Programming basics: data types, operators, standard input and output
3. Control structures: if/else, loops, relational operators
4. Methods
5. 1D (and 2D) arrays, strings
6. Object oriented programming
7. Miscellaneous topics: simple Android app (time permitting)

V. INSTRUCTIONAL ACTIVITIES: Classroom activities include lecture, discussion, problem solving, programming, and examinations.

VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES: Use of computers to complete programming assignments.

VII. TEXT(S) AND RESOURCES:

Textbook: Big Java: Late Objects, Cay Horstmann, John Wiley, 2013, amd Java Programming for Android Developers for Dummies, Barry Burd, John Wiley, 2014.

Semester: Spring 2015

Class times & classrooms: Blackburn 157, 8:30-9:20 MWF

Instructor: James Hereford, BL 171 E-mail:jhereford@murraystate.edu

Office Hours: MW 9:30-10:20 am, 1:00 – 3:00 pm, T 8:00 – 12:00, Th 8:00 – 10:15 am, by appointment or as a target of opportunity

VIII. EVALUATION AND GRADING PROCEDURES: Students will be graded based on the following percentages

3 exams @ 18% each	54%	90-100	A
Programming assignments	10%	80 - 89	B
Quizzes/Homework	5%	70 – 79	C
Final exam	31%	60 - 69	D
		<60	See you in ‘16

IX. ATTENDANCE POLICY: Students are expected to adhere to the MSU Attendance Policy outlined in the current *MSU Bulletin,* however, an attendance record will not be kept. Each student will be held responsible for all material covered, homework assignments made, changes in exam time, etc. that might have occurred during missed classes. There will be no make-up exams.

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 Institutional Diversity, Equity and Access. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

Complete academic integrity is expected of all students. Graded individual assignments and examinations should consist solely of the work of that individual whose name is on the document. Cheating on examinations will not be tolerated. Cheating is defined to be the use of any unauthorized source of information for the purpose of deceiving the instructor in evaluating the student's performance or to gain an unfair advantage over fellow students. Students caught cheating will receive a failing grade in the course.

XI. NON-DISCRIMINATION POLICY STATEMENT AND STUDENTS WITH DISABILITIES:

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 Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall. 270-809-3155 (voice), 270-809-3361 (TDD).

Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. 270-809-2018 (voice) 270-809-5889(TDD).