

Course Number: CSC 658

Course Title: Programming Cafe

Number of Credits: 3

Schedule: Three hours of lecture/discussion per week.

Prerequisite: CSC 413 with grade C or better or consent of instructor

Catalog Description

Extensive programming practice to advance programming skills and processes; pair programming exercises; code review techniques and practice.

Expanded Description

1. Creating high quality code
2. Programming Style – layout, choice of variables, control constructs, abstraction
3. Software Quality – measures of quality (robustness, correctness)
4. Testing – unit testing, overview of quality assurance
5. Debugging – use of debuggers
6. Refactoring – common code refactoring and tools for support
7. Design Patterns – overview and application in practice
8. Code Reviews – concepts and application
9. Pair Programming – actors including moderator, author, reviewer, scribe
10. Programming Contest – used to build teamwork skills, as well as prepare for the ACM programming contest

Course Objectives and Role in Program

The objectives of this course include:

- Provide an intensive hands-on course for students to develop and improve programming and problem-solving skills
- Perform code reviews to reflect on programming style
- Teach about pair programming via several exercises
- Development of a significant course management portfolio application utilizing NetBeans with interesting Java libraries
- Exercises will be performed in class for direct, dynamic feedback by the instructor
- Teach about graphical user interfaces via Java Swing exercises

The focus of the course is on students developing their programming skills. This skill development is central to the mission of the Computer Science program.

This course meets the undergraduate Group Project Requirement.

Learning Outcomes

At the end of this course students will

- Be able to have a facility with starting new programming projects
- Be able to evaluate graphical user interfaces with respect to *user friendliness*
- Be able to use the code refactoring tools contained in ide's

- Understand how to work effectively with others in a team setting
- Be able to produce code using an effective style; use appropriate syntactic structures.
- Use current technologies associated with building Java applications.
- Be able to use unit testing tools
- Be able to program in Java Swing

Method of Evaluation

Student learning will be evaluated on the basis of

- Completeness and quality of programming assignments.
- Grade on final examination
- Class participation.

The weight assigned to each element of evaluation will be determined by the instructor of the course on the first day of the class.

Required Textbook

Code Complete, Second Edition by Steve McConnell., Microsoft Press; 2nd edition (2004)

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