

LeMoyne-Owen College
Division of Natural and Mathematical Sciences
Computer Science Capstone, COSI 460
Spring 2012

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Credit Hours: Three
Prerequisites: Completion of all required Computer Science major courses or permission of instructor.
Class Meeting: TTh 11:00 a.m. to 12:15 p.m.

Syllabus

Texts: Major Area Subject Texts

Supplemental Materials: Computer Science On-Line Materials

Course Description:

This course meets three hours weekly, during which topics are discussed and students relate their literature search with professional experience and ethics. During the first half of the semester, the students will have an opportunity to review the computer science courses. There will be an **exit exam** at the middle of the semester. Students have to pass this exam, the passing grade being 70%. Students failing the exit exam will have to take a make-up exam at the end of the semester. If students do not pass either of the exams, then they will have to repeat the course in order to graduate. During the semester, students will research and develop a formal written report. At the end of the semester, the student will submit the formal **written report and present his/her project using PowerPoint**. This course is required of all seniors.

College Graduate Competencies:

The three college graduate competencies (CGC) that are directly addressed in Computer Science Capstone are:

1. Think creatively, critically, logically, and analytically using both quantitative and qualitative methods for problem solving.
2. Communicate effectively (listen, speak, read, and write) on formal and informal levels;
9. Attain motivational, personal management, interpersonal skills, professional development and research experience, as well as resourcefulness that will form the basis for a career and/or further educational experiences.

Major Area Competency Levels:

The college graduate competencies are developed specifically for this course through major area competency levels (MAC). By the end of this course, students should have attained proficiency in the following major area competencies:

1. To demonstrate an ability to think creatively, critically, logically, and analytically using both quantitative and qualitative methods for solving problems (CGC#1).
2. To demonstrate an ability to address problems, and communicate solutions clearly. (CGC#2).
3. To comprehend all their studies in the computer science area to solve a problem in the real life. (CGC#9).

Course Objectives:

The identified major area competencies focus on the fundamentals of computer programming languages, data structures, computer algorithms, Database Management and Operating System. Therefore, students are expected to show proficiency in the following:

1. Demonstrate thorough knowledge of theories and applications of computer science through Computer Science Exit Exam.
2. Employ and exhibit research skills by making an electronic academic portfolio and doing an oral presentation.

In general, the objective is to ensure that students are adequately prepared in their major area to function as productive members either in graduate school or in the work force. By attending this course, the students will be exposed to different area of Computer Sciences. They will improve their ability to conduct research and present good reports.

Attendance Policy: In accordance with college policy, classroom attendance is required. The following standard will be applied:

1. If unexcused absences total 15% of the regularly scheduled class meetings, the instructor has the authority to lower the final grade by one letter.
2. If unexcused absences total 20% of the regularly scheduled class meetings, the instructor has the authority to give a failing grade.
3. Five classes tardy —arrival to class five minutes after class has begun—will equal one unexcused absence.

Technology Use: LeMoyne-Owen College is committed to enhancing student learning through the use of a variety of applicable technology.
In this course, students will use and be exposed to C++ or Java Compiler and Interpreter and Microsoft Excel, Word, and PowerPoint.

Demeanor: Suitable demeanor, posture and attire are required. For guidelines and the dress code, please refer to the 2011/2012 Student Handbook (8-9; 13).

Classroom Policies and Procedures:

The classroom learning experience provides opportunities for faculty and students to engage in interactive exchanges of course content. To facilitate this exchange, the following guidelines are provided:

1. Because each class session covers vital material and information, it is important that students arrive on time to each class session.
2. In order to enhance students' performance and confidence in acquiring the material, it is critical that students come to each class session prepared. This includes bringing to class required texts, supplemental materials, and assigned work, which is provided on the course outline.
3. In order to limit unnecessary distractions which would deter learning, cell phones, multi-media devices, and laptops are required to be turned off or on vibrate when class is in session, except by permission of the faculty.

Faculty reserve the right to apply penalties for noncompliance to either or all of the above guidelines.

Assignments, Assessment and Submission Requirements:

An Exit Written Exam will be given on Thursday, February 23. Another Exit Hands-On Exam will be given on Thursday, March 1. Each one has to be scored 70% or above. A personal dynamic academic web-site is required. It has to be uploaded to the server whose IP address is 67.91.99.86. The final presentation will be included COSI455 project and a personal web-site at 9:00 a.m. Monday, April 23.

Policies Related to Students with Disabilities:

If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please make an appointment with Jean Saulsberry, Director of Student Development, as soon as possible at (901) 435-1727. The Student Development Office is located in the Alma C. Hanson Student Center, Room 208.

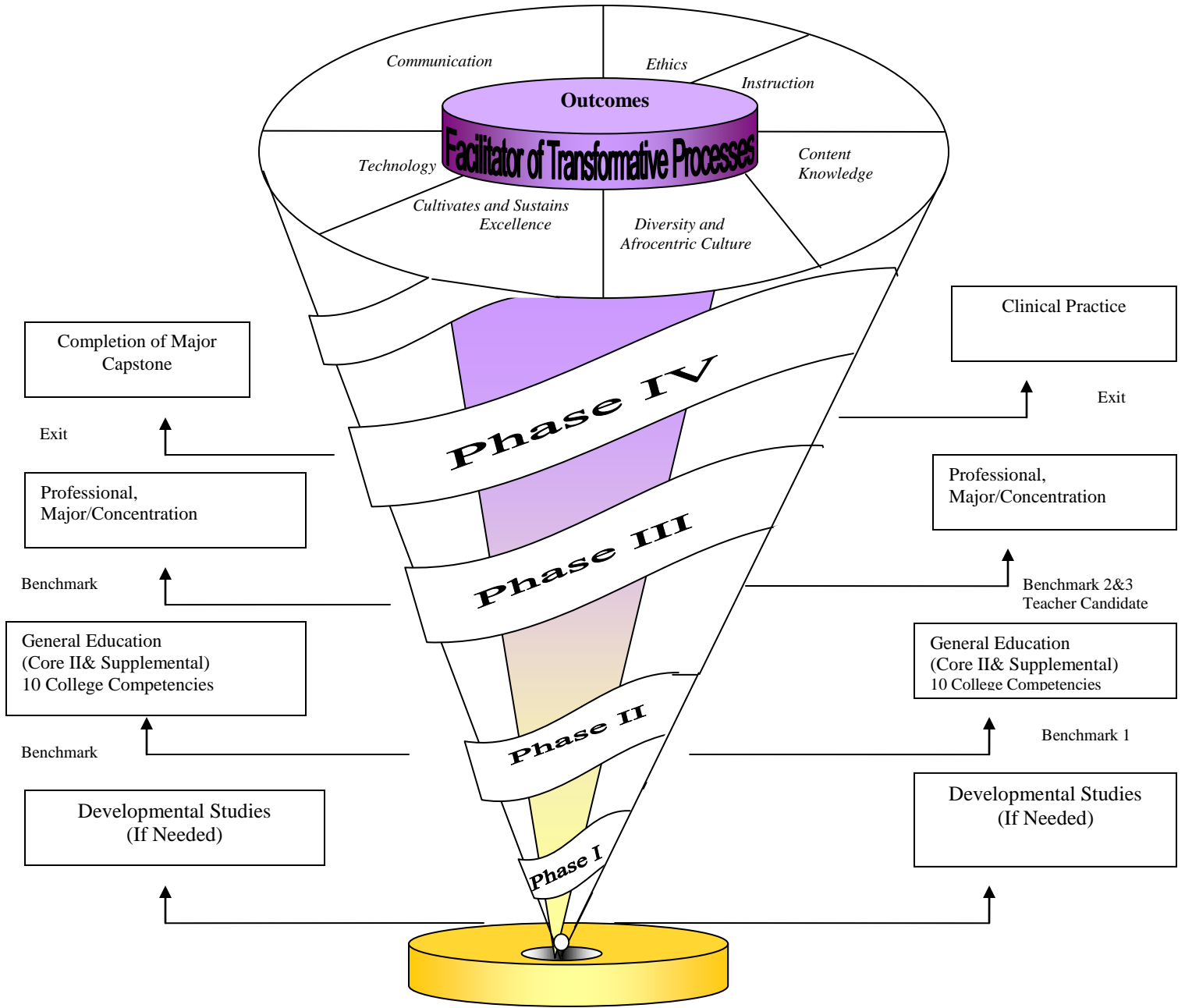
Student Performance Evaluation and Grading Scale:

The course grade will be calculated on the following distribution:		Grades will be recorded in numerical form until the final averages are determined at the end of the semester. <i>Grading Scale</i> will be	
Written Exit Exam	25%	90 to 100	A,
Hands-On Exit Exam	25%	80 to 89	B,
Proposal for Web-Site	15%	70 to 79	C,
Final Presentation	20%	60 to 69	D,
Uploaded Web-Site	15%	others	F.

LeMoyne-Owen College Graduate Competencies (CGC)

LeMoyne-Owen College graduates should be able to:

1. Think creatively, critically, logically, and analytically using both quantitative and qualitative methods for problem solving;
2. Communicate effectively (listen, speak, read, and write) on formal and informal levels;
3. Distinguish, clarify, and refine personal values for the attainment of richer self-perception and relate those values to the value system of others;
4. Appreciate, understand, and know the foundations of the Afrocentric perspective;
5. Appreciate, understand, and know the foundations of diverse cultures in the context of a global community;
6. Appreciate, understand, now and pursue the principles, methods and subject matter that underlie the major discipline(s);
7. Accept social responsibility and provide service to humankind;
8. Maintain levels of literacy that allow them to understand the impact of science and technology on individuals, society, and the environment;
9. Attain motivational, personal management, interpersonal skills, professional development and research experience, as well as resourcefulness that will form the basis for a career and/or further educational experiences;
10. Attain critical skills, frame of reference, and understanding needed to appreciate and discriminate between artistic achievements.



Student

Teacher Education Pre-Candidate

The Conceptual Framework Model
Theme: Teacher as a Facilitator of Transformative Processes

Computer Science Capstone Course Outline (tentative)

Weeks	Topics
1	<p>Introduction the course Review on Application Software: (Peers Presentations) - Microsoft Word: Advance Formatting, e.g. Mathematical Formula, Drawing, etc. - Web Page Design - Microsoft Excel: Relative Address vs. Absolute Address, Chart Wizard, etc. - Microsoft PowerPoint - Microsoft Access</p> <p><i>Start to create a frame page for your academic web-site.</i></p>
2 – 3	<p>Review on Programming Language Skills: (C++ and Java) - Assignment Statements - Decision Statements - Loop Operations - Functions and OOP concepts (Encapsulation, Inheritance, Polymorphism)</p> <p><i>Submit a research topic with title, proposal and outline to Dr. Lu in COSI 455 class. Submit your first page (index) in frame with a list page and a welcome home page.</i></p>
4 – 5	<p>Review on Data Structures, Computer Algorithms and Computer Organization:</p> <ul style="list-style-type: none"> - Arrays - Pointers - Stack - Tree - Counting Number of Steps in Computer Algorithms - Big O concepts - Number Base Conversion and Calculations - Hamming Code - Change the form of expression: prefix, infix, and postfix <ul style="list-style-type: none"> - Vectors - Linked List - Queue - Sorting Methods
6	<p>Review on Discrete Structure, Database Management, and Operating Systems</p> <ul style="list-style-type: none"> - Logic and Binary Computations - Relational Algebra and Structured Query Language - Critical Sections, Mutual Exclusion, Deadlock, Process Scheduling, Virtual Memory
7	<p><i>Comprehensive Exit Exam</i></p>
8 – 15	<p>Research and Presentations</p> <ol style="list-style-type: none"> 1. The research topics should be decided as early as possible, like the first two weeks of semester. You are allowed to combine the project in COSI 455 with the one in this course into a large project. 2. The electronic portfolio is required for this course. It can be written by a web-site design or PowerPoint software. The research project should be included into your portfolio.

Instructor reserves the right to add or subtract assignments or assessments.