

Syllabus

COURSE INFORMATION

Course: **CMS 484** Term: Spring 2015
Instructor: Dr. R. H. James (with assistance from Dr. L. M. Holt)
Office: Bush ??

Course Title: **Computer Science Capstone**

Meeting hours: 7:00 – 9:30pm W

Location: Bush 228

Office hours: **Available by appointment**

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Course Web Site: blackboard.rollins.edu(select CMS 484)

LEARNING TOOLS:

Course Description:

CMS 484 – The Capstone course provides a culminating and integrative educational experience. While participating on a team with other students, students will design and implement a large-scale software project. Class meetings will be used for teams to demonstrate the progress of their project as well as for the teams to meet and work. Team meetings outside of class will be required.

Prerequisite: one 400-level CMS course.

Course Rationale:

The professional tasks of most computer science graduates center on the design and development of software. Prior CMS courses have provided students with the theory and skills necessary to develop software. The project activities in these courses have not involved large-scale applications or team-oriented development. However, this is the environment encountered when working for professional enterprises. The Capstone course is designed to provide students with the experience of working on a team undertaking a large, complex programming activity.

Course Goals:

At the completion of this course, you should be able to:

1. appreciate the advantages of developing and documenting the design *prior* to implementing software
2. discuss *from experience* the difficulty of designing, developing, *and testing* a large-scale software project including *integration*
3. participate in a team-environment
4. appreciate the social interactions required to produce quality software.
5. develop *and present* both design and code artifacts.

Types of Learning Experiences and Assessment Procedures:

Several different learning experience methods and assessment techniques will be employed in this course:

1. **Meeting Participation and Research Activities:** your prime activity will be to work (both individually and with your team) on your project's documentation, experiments, development, and testing tasks *before* coming to a class or team meeting. Your other major activity will be to research any assigned technical issues identified during class or team meetings and to report (both verbally and written) on your findings.

*Meeting with your team outside of class meetings is a **mandatory** requirement of this course.*

To be able to contribute to your team, you must come to **all** the meetings prepared. There are no wrong contributions to a team or class meeting except silence.

2. **Journal/Log Book:** you must maintain, using BlackBoard, a personal journal to document **all** design ideas, code experiments, and testing results. Your journal will be evaluated periodically so make sure it is up to date at all times. As a team, you will also maintain a Team Blog in your Group's BlackBoard page. The Team Blog will document the current and planned activities of your team as well as your team's accomplishments and status.

3. **Project Activity:** you will work with a team of your classmates to design, develop, and test a large-scale software application. Your team will fully document your project – including your requirements analysis; design decisions; assumptions; and, all design modifications – as well as produce an executable program. Your team will also develop test documentation to be used to verify the accuracy of your program.

All development artifacts will be delivered as formal documents.

4. **Reflection Report:** you will submit a comprehensive reflection report describing your experience in the course and on your team. Your report will include your opinion on how your course experience impacted your approach to/understanding of software development. In addition, your report will contain your **Peer Reviews** of your teammates' performance. I will provide a standard form for the Peer Reviews.

Suggestions for Making This THE Best Course You've Had:

Your objective in this course should be to **gain experience** participating as a member of a team developing a software product. The initial requirements for the product will be incomplete and confusing – requiring significant effort on your team's part to resolve all ambiguities and develop a workable design. The requirements from the "customer" may change as the term progresses, but the final delivery milestone cannot be changed (unless you want to stay an additional term). In addition, the project's specific application, terminology, and requirements probably will not be familiar to you. You will need to do significant research *outside* of class to improve/increase your understanding (as well as your team's understanding) of the "customer's" need and how to use the tools to satisfy that need.

The project will not be simple and will require significant participation on the part of all team members. Do not expect to let the other members of your team "carry" you through this course.

You can and will be voted off the team. All team members will submit peer evaluations that can reduce, or support, your final grade.

So, what is required of you? The most critical requirement is that you do your *individual* research, design, writing, reflection, and code experimentation **before** you come to a team or class meeting. I want to use class time for working through design and implementation issues as well as presenting the next artifacts.

This course will be presented without the normal set of exams. The final design artifacts will carry most of the weight for your final grade. The code and test artifacts will also contribute to your final grade as well as your peer's review of your performance. This is how it is done in the "real-world" - don't just tell the boss how great the product will be – show them the artifacts to convince them your team knows what it has done and that its product will satisfy the "customer".

COURSE MANUAL:

Required Text:

None required. You should identify texts, papers, and other documents that will contribute to your knowledge about your specific project and acquire them on your own. I will periodically provide reading material for your analysis and group discussion. You should identify all material used to guide your team's project in the Team's Blog and in your Journal.

Course Structure and Calendar

This course will be conducted in a very different manner from your other CS classes. You will function as a member of a *team* designing and producing a software application. I will act as the team's "manager", questioning the decisions and assumptions made by your team as well as your products user interface and functionality. Each of you is expected to respond to all questions and to be able to support/explain your team's decisions.

The Course Calendar will be the milestone schedule for the project's artifacts (both documentation and code) that we will *jointly* establish and maintain. We will update the milestones to reflect what the team has accomplished and what is needed next. The schedule will be dynamic - make sure you are aware of the current plan.

We will use BlackBoard's Group Page to provide a common repository for each team's artifacts as well as a means for the team's members to communicate.

Activities:

The CMS 484 Web Site has a Current Activity page that displays the status of all milestones, identifies current tasks (with expected completion dates) and identifies topics for the next class and/or team meetings.

Evaluation Criteria:

1. Final Design Artifacts/Presentations: Valued as 40% of final grade.
2. Meeting Participation/Journal: Valued as 30% of final grade.
3. Code Artifacts/Presentations: Valued as 20% of final grade.

4. Peer Evaluations: Valued as 10% of final grade.

Grading Scale:

92 - 100	Some kind of A
82 - 91	Some kind of B
72 - 81	Some kind of C
65 - 71	Some kind of D

Your final average will determine your course grade from the above scale.

Academic Dishonesty

Membership in the student body of Rollins College carries with it an obligation, and requires a commitment, to act with honor in all things. Because academic integrity is fundamental to the pursuit of knowledge and truth, and is the heart of the academic life of Rollins College, it is the responsibility of all members of the College community to practice it and to report apparent violations.

The following pledge is a binding commitment by the students of Rollins College:

The development of the virtues of Honor and Integrity are integral to a Rollins College education and to membership in the Rollins College community. Therefore, I, a student of Rollins College, pledge to show my commitment to these virtues by abstaining from any lying, cheating, or plagiarism in my academic endeavors and by behaving responsibly, respectfully and honorably in my social life and in my relationships with others.

By academic dishonesty, I mean presenting as your own work, or your team's work, material produced by persons not on your team without proper acknowledgement. Any usage of non-team produced material will result in a score of 0 for the team as well as submission of a letter to the Dean of Students describing your dishonesty (as specified in the Rollins College Catalogue.)

The Rollins College Academic Honor Code pledge is reinforced every time you submit work for academic credit as your own. You shall add to all artifacts as well as program source code files (include as a comment block) the following handwritten abbreviated pledge *followed by your signature*:

“On my honor, I have not given, nor received, nor witnessed any unauthorized assistance on this work.”

Material submitted electronically should contain the pledge; submission implies signing the pledge.

Absence and Tardiness Policies:

You are expected to attend *all* team and class meetings and to support the delivery of *all* artifacts and code modules in accordance with each scheduled milestone. **Failure to attend all team and class meetings will be *significantly* detrimental to your course grade.**

Late Preparation and Submissions

Due to our team format, your draft submissions will be meaningful input to your team's discussions and your project's artifacts. This won't happen if you do not prepare your portions or do your research when required. Although the major milestones are established by all of us, your

team will set their own detailed schedule for completing the work required to satisfy a major milestone.

Establish a regular schedule for preparing for your team meetings. Complete your portion of your team's assignment on time. Come to the team meetings ready to contribute. This is what is expected of a professional and you will be one very soon.

Start developing a professional work ethic now.

Academic Accommodation

Rollins College is committed to equal access and does not discriminate unlawfully against persons with disabilities in its policies, procedures, programs or employment processes. The College recognizes its obligations under the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 to provide an environment that does not discriminate against persons with disabilities.

If you are a person with a disability on this campus and anticipate needing any type of academic accommodations in order to participate in your classes, please make timely arrangements by disclosing this disability in writing to the Disability Services Office at (Box 2613) - Thomas P. Johnson Student Resource Center, 1000 Holt Ave., Winter Park, FL, 32789. Appointments can be scheduled by calling 407-646-2354 or email: gridgeway@rollins.edu.