A. JAMES CLARK
SCHOOL OF ENGINEERING

ENPM 613
Fall 2017

Software Design and Implementation

Overview and Learning Outcomes

This course is part of the core curriculum for the Software Engineering specialization of the Professional Master of Engineering Program and the Graduate Certificate in Engineering, and typically should follow ENPM611 and ENPM612. The course is also open to students in specializations other than Software Engineering, who have appropriate background.

ENPM613 enables learning of industry best practices and their applications for designing and implementing software in a business setting.

After successfully completing this course students will be able to:

- Define concepts of software architecture and detailed design and building-in software quality
- Apply methods, techniques, tools, and industry standard notations for developing and documenting software design
- Analyze and evaluate software design; perform peer reviews
- Implement and deliver software in accordance with its design, in a team environment
- Perform change management for software design and implementation artifacts
- Identify software design problems, propose adequate solutions, and analyze their benefits, cost, and limitations.

Course Resources

Course website: **www.elms.umd.edu**
Textbook:

Introduction to Software Engineering Design: Processes, Principles and Patterns with UML 2 by Christopher Fox, Addison Wesley
First edition (2007). ISBN #0-321-41013-0

Additional references will be provided in class, as necessary.

Dr. Ioana Rus
irus@umd.edu

Class Meets
Wednesday 7:00pm-9:40pm
BLD JMP Room 2217 (DETS)

Office Hours
Wednesday 6:00pm-7:00pm BLD JMP Room 2105
Monday 6:00pm-7:00pm Online (Google Hangouts), by appointment

Prerequisites
ENPM611 or instructor's permission

Course Communication
Email: irus@umd.edu
Please see a link with helpful guidance on writing professional emails (ter.ps/email).

Campus Policies

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- Academic integrity
- Student and instructor conduct
- Accessibility and accommodations
- Attendance and excused absences
- Grades and appeals
- Copyright and intellectual property

Please visit www.ugst.umd.edu/courserelatedpolicies.html for a full list of campus-wide policies and follow up with me if you have questions. Note that this list has been compiled by the Office of Undergraduate Studies, but most provisions apply to graduate students as well.

Activities, Learning Assessments, and Expectations for Students

- Students will learn the class material by attending lectures and independent study
- Classes will incorporate active learning (e.g., hands on class exercises) and will stimulate students' critical thinking
- Assessment vehicles are: in-class quizzes, mid-term and final exam, research project, and a team software design and implementation project
- Students will present to the class their research project findings and software development artifacts
- Students will perform peer reviews of project deliverables
- For the group project, each student must contribute to all activities and deliverables. At the end of the project, each student will provide a description of their contribution to the project, and feedback on their team mates' and their own performance. Individual project grades will be based on the grade for the group deliverables and individual contribution
- Students are expected to have the prerequisite knowledge (ENPM611 or equivalent) and to be proficient in Java programming before they enroll in the course
- Submissions for project deliverables will be made online, using ELMS (Canvas), by the date specified in ELMS. Late submissions are not accepted. Exceptions might be occasionally granted, but if and only if permission is obtained from the instructor **before** the submission deadline
- Mid-term and final exams will be administered in class and will be closed book and closed notes. Students must bring their UMD student ID to exams
- Students will participate in ELMS (Canvas) Discussions. After each lecture, students will post feedback and questions for the instructor regarding the lecture.

Course-Specific Policies

Use of technology:

- **Please bring your laptops to class**
- **Cell phones:** Please refrain from using your cellphone in class. If you have critical communication to attend to, please excuse yourself and return when you are ready.

Other course policies:

- Project groups will be formed by the instructor

- For project presentations, all group members must be present in class (either in College Park, or remotely, at their respective sites)
- There is no make-up for quizzes
- No make-up exams will be considered, except for rare circumstances (officially excused absences). In that case, an equivalent (but not necessarily identical) assessment will be administered. The make-up for the final exam must be administered before the last exams day of the semester
- No work for extra credit will be considered

Grades

Grades are not given, but earned. Your grade is determined by your own performance on the learning assessments in the course and is assigned individually (not curved). If earning a particular grade is important to you, please speak with me at the beginning of the semester so that I can offer some helpful suggestions for achieving your goal.

Assessment scores will be posted on the course ELMS page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please email me to schedule a time during office hours for us to meet, in my office or online (using Google Hangouts).

Late work will not be accepted for course credit, so please plan to have it submitted well before the scheduled deadline. I am happy to discuss any of your grades with you, and if I have made a mistake I will immediately correct it. Any formal grade disputes must be submitted in writing and within one week of receiving the grade.

Learning Assessments	Points	Category Weight %
Midterm Exam	100	15
Final Exam	100	20
Group Project (Total), distributed as follows:	100	35
Proposal and Plan	10	
Requirements	20	
Design	35	
Implementation	35	
Research Project	100	15
Learning Checks: in-class quizzes (total)	100	10
Discussions in ELMS (total)	100	5
Total	*600*	*100*

Final letter grades are assigned based on the percentage of total assessment points earned. To be fair to everyone, clear standards must be established and applied consistently.

Final Grade Cutoffs									
A+	97.00%	B+	87.00%	C+	77.00%	D+	67.00%		
A	93.00%	B	83.00%	C	73.00%	D	63.00%	F	<60.0%
A-	90.00%	B-	80.00%	C-	70.00%	D-	60.00%		

Campus Resources

You are expected to take personal responsibility for you own learning. This includes acknowledging when your performance does not match your goals and doing something about it. Everyone can benefit from some expert guidance on time management, note taking, and exam preparation, so I encourage you to consider visiting http://ter.ps/learn and schedule an appointment with an academic coach. Sharpen your communication skills (and improve your grade) by visiting http://ter.ps/writing and schedule an appointment with the campus Writing Center. Finally, if you just need someone to talk to, visit http://www.counseling.umd.edu.

Everything is free because you have already paid for it, and **everyone needs help**… all you have to do is ask for it.