

# Syllabus

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## *Course Description*

### **MET CS633 OL Distributed Software Development**

Low communication costs allow software applications to be produced via geographically distributed development (GDD). In addition to the traditional challenges of specifying and developing I.T. systems, GDD projects must accommodate differing cultures, outlooks, time zones, and development methodologies. This course prepares students to justify, lead, participate in, and maintain such projects. Students work in geographically dispersed teams and produce documented applications.

## **Learning Objectives and Outcomes**

Upon successful completion of this course, you should be able to do the following:

- Analyze tools for distributed software development
- Gather and analyze requirements via a geographically distributed team
- Write software designs for a geographically distributed team
- Implement, or manage, a distributed implementation
- Maintain, or manage the maintenance of an application with a distributed team

Upon successful completion of this course, you will understand and be able to discuss (and formulate):

- The advisability of dispersing the development of an application
- Strategies for onsite, near-shore, and offshore development
- The phases of software engineering in a distributed context
- Tools and techniques for distributed software development

## *Instructor*



**Alex Elentukh** is an accomplished Program Manager, Scrum Master / Coach and Quality Director with broad expertise in software and hardware environments ranging from startups to Fortune 500 organizations.

- Alex taught various software engineering courses at Boston and Northeastern University and authored numerous papers on Quality Assurance and Software Reliability.
- At EMC, as an Agile Coach, Alex introduced the backlog grooming to improve collaboration between Product Owners and Engineering
- As an Enterprise Architect, at Fidelity, Alex managed the regression-intensive verification used by multiple Scrums cutting the field complaint rate by fifty percent.
- Alex held positions of a QA Director at two successful start-ups, Jupiter and Reveal.
- Alex received his Masters Degree from St. Petersburg University followed by numerous industry courses and certifications. He received the President's Award for coordinating the first Fidelity SEI assessment and Leadership Award for adopting a consistent Peer Reviews practice across multiple EMC groups. He is a Lead ISO Auditor, QSR Assessor and Certified Scrum Master.

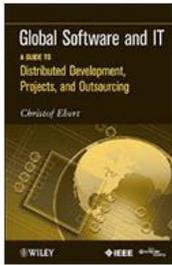
## *Original Course Instructor*



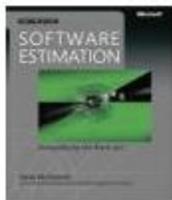
**Eric Braude** has a Ph.D. from Columbia University in mathematics and a Master's in Computer Science from the University of Miami. He taught at Penn State and the City University of New York then worked for 12 years in government and industry as a software engineer and manager. He has been an Associate Professor of Computer Science at Boston University's Metropolitan College for approximately 20 years, and consults for local and international corporations in systems and security. His papers cover simulation, mathematics, teaching methods, and system reliability. He has edited or written six books, including “Software Engineering: Modern Perspectives” (2010) with Michael Bernstein, and is at work on a seventh. His current research is on the construction of reliable programs.

Dr. Braude's home page is <http://www.bu.edu/csmet/braude>

## Required Course Resources



1. Ebert, C. (2011). *Global software and IT: A guide to distributed development, projects, and outsourcing*. Wiley-IEEE Computer Society Press. (ISBN-13: 9780470636190 | ISBN-10: 047063619X)



2. Steve McConnell, (2006) *Software Estimation: Demystifying the Black Art*. Redmond, Wa.: Microsoft Press, ISBN: 0735605351.



3. Bose, I., Huang, M-H., & Huang, M. (2006). *Jharna Software: The move to Agile*. Harvard Case No. HKU613.

## *Basis for Grades*

There are four components to your grades.

### Weekly Assignments

Weekly assignments encourage you to extrapolate from the course material and from your own experiences. The weekly assignments are counted equally.

### Quizzes

These are straightforward questions assuring you are on track with your weekly assignments and associated subject matter.

### Term Project

Most of the content will be explored through the term project where you will produce predefined artifacts. Over the seven weeks you will submit your deliverables at various milestones and take part in the Peer Review of these deliverables. Effort should be made throughout the semester to follow the work schedule and not to leave key tasks to the very end. Please plan accordingly. As you will receive a grade for each in-process submission that is in addition to completing the final deliverable, source and implementation files.

### Final

There will be a three-hour final exam. It provides you the opportunity to show what you have learned from the material, the discussions, and from doing the term project. Final Exam includes a Case Study "Jharna Software: The Move to Agile Methods". It covers several considerations for adopting Agile in a distributed environment. You have to carefully examine the Case in advance so to prepare to the Final Exam.

## *Grade Computations*

Assignments	25
Quizzes	20
Term Project	25
Final Exam	30

## *Study Guide*

## **Module 1 Business Models for Distributed Development**

- Readings:** Online lectures  
Ebert chapters 1–6 & p. 31
- Assessments:** Quiz 1 due September 9 at 6:00 AM ET
- Assignments:** Assignment 1 due September 9 at 6:00 AM ET

## **Module 2 Tools and Environments for Distributed Teams**

- Readings:** Online lectures  
Ebert chapters 11, 14 & 15  
McConnell chapter 14
- Discussions:** Peer Review Comments 2 due by September 16 at 6:00 AM ET
- Assessments:** Quiz 2 due September 16 at 6:00 AM ET
- Assignments:** Assignment 2 due September 16 at 6:00 AM ET
- Term Project:** Term Project Milestone 1 due September 16 at 6:00 AM ET

## **Module 3 Process and Design for GDD**

- Readings:** Online lectures  
McConnell chapter 4  
Ebert chapters 7, 8 & 16
- Discussions:** Peer Review Comments 3 due by September 23 at 6:00 AM ET
- Assessments:** Quiz 3 due September 23 at 6:00 AM ET
- Assignments:** Assignment 3 due September 23 at 6:00 AM ET

## **Module 4 Quality and Implementation**

- Readings:** Online lectures  
Ebert chapters 13 & 34  
McConnell chapters 21.5 & 21.7
- Discussions:** Peer Review Comments 4 postings due by September 30 at 6:00 AM ET
- Assessments:** Quiz 4 due September 30 at 6:00 AM ET
- Assignments:** Assignment 4 due September 30 at 6:00 AM ET

## **Module 5 Management of People and Teams**

- Readings:** Online lectures  
Ebert chapters 10, 21, 26–33
- Discussions:** Peer Review Comments 5 due by October 7 at 6:00 AM ET
- Assessments:** Quiz 5 due October 7 at 6:00 AM ET
- Assignments:** Assignment 5 due October 7 at 6:00 AM ET
- Term Project:** Term Project Milestone 2 due October 7 at 6:00 AM ET

## **Module 6 Testing, Release, and Maintenance**

- Readings:** Online lectures  
Case Study Jharna Software: The Move to Agile
- Discussions:** Peer Review Comments 6 due by October 14 at 6:00 AM ET
- Assessments:** Quiz 6 due October 14 at 6:00 AM ET
- Term Project:** Term Project Milestone 3 due October 14 at 6:00 AM ET

## **Final Exam Details**

The Final Exam is a proctored exam available from **October 15 at 8:00 AM ET to October 18 at 11:59 PM ET**. The Computer Science department requires that all final exams be proctored.

The exam is a three-hour open-book exam consisting of essay questions. It will only be accessible during the final exam period. You can access it from either the Assessments section of the course or from the Final Exam module on the home page. Your proctor will enter the password to start the exam.

**Access to the online discussions and chat feature (but not the module contents), ends on October 15 at 8:00 AM ET and will be unavailable until October 19. Please plan accordingly.**

You will receive a technical support hotline number before the start of the exam. Please bring this number with you to the exam.