

17676-A3

Spring 2019

Class meetings:

Mon & Wed, 10:30-11:50am, #265 300SCRG

Attendance is mandatory, and absences must be pre-approved.

Course Description:

In the Professional Masters of Software programs, students in MSE & MSIT programs are required to undertake a practicum project. The practicum project is a 3-semester (Studio I, II & III, for MSE) and 2-semester (Project I & II, for MSIT) real-world project where student teams will work with an external client to build a significant software product and required document artifacts. The purpose of practicum is to provide students with a realistic context in which to practice with application of course principles, methods, and techniques.

The team-oriented nature of practicum is one of the more difficult aspects of the practicum and can be the most problematic if not properly instantiated and managed. Because MSE/MSIT students may not have the breadth of industrial experience, practicum teams often spend more time than necessary organizing, planning, and setting up basic processes.

The purpose of this Software Engineering Bootcamp course is to provide students with the scaffolding necessary for that instantiation: organizing the team, setting up basic processes, and basically getting started on the project. This will be done through essentially a reminder and refresher of concepts from the core curriculum (covered both in advance of and concurrently with the Bootcamp course).

Course Overview:

The Bootcamp course includes a series of lectures and exercises supported by readings designed to provide practical guidance for problems that teams are likely to encounter during the initial weeks of their project. In addition, teams will also receive guidance regarding what will be expected of them from program faculty. Lecture topics include:

- **Introduction to Practicum** – General logistics, practicum expectation, practice based studio and the specific practices.
- **Working With Others** – Exercise designed to better know and understand teammates.
- **Team Building** – Practical guidance for ways to organize small teams.

- **Time Management**– Time management issues, why we waste time, and techniques for better time management.
- **Meeting Management** – Tips and techniques for making meetings more productive.
- **Requirements Engineering** – Practical guidance for how to meet with customers, how to collect and organize customer requirements, and manage changes to requirements.
- **Planning** – Differentiate strategic from tactical planning and provide tips and techniques for creating strategic plans and mapping them tactical plans.
- **Tracking** – Practical guidance on collecting and analyzing metrics to make decisions and track project progress.
- **Team Processes** – Tips and techniques for defining, managing, and measuring team development processes.
- **Risk Management** – Practical guidance for risk identification, quantification, and mitigation.

Presentations policy:

In lieu of graded assignments, teams are expected to make progress on their projects working with the mentors and the client. Additionally, most weeks require a team presentation covering one or more practice areas enabling teams to share progress and to seek feedback.

The duration of class time may not allow for all teams to present on a given day set for presentations. Hence:

- All presentations will be due at 10am (shortly before class).
- Teams and the specific team member(s) who would be presenting would be determined at the start of the class. Therefore, everyone (all teams, and all members of a team) should be prepared to present on the day set for presentations.
- Designated teams in audience would be expected to raise questions to teams that present.




Bootcamp Goals:

1. To jumpstart students in their projects by helping them
 1. Understand their customer goals
 2. Learn about the project domain
 3. Develop a shared understanding of possible solutions
 4. Sketch a rough development plan to establish their affordability.
2. To demonstrate evidence of the above, ensure that students address – by means of artifacts, specific answers, or corresponding activity in the plan – essential questions for their respective projects.


Bootcamp Learning Outcomes:

1. Reinforcement of concepts from core curriculum covered prior to Bootcamp
 1. Methods Deciding What to Design
 2. Managing Software Development
 3. Models of Software Systems
 4. Communication for Software Engineers
2. Application of concepts from core curriculum covered concurrently with Bootcamp
 1. Architectures for Software Systems
 2. Analysis of Software Artifacts
 3. Communication for Software Engineers
3. Understanding and applying a structured approach to gather information necessary to address essential questions about the different practice areas as guided by the Practice-based Studio (PBS) philosophy.

2019 Lecture Schedule (Last updated 1/15/2019-ST)

Week	Lecture/Date	Instructor	Lecture Title	Assignment/Reading
1	1 - 14th Jan	Tony	Introduction: PBS and Bootcamp Slides 	Make progress on: Meeting with team, mentor(and client Understanding problem and project
	2 - 16th Jan	Matt	Project domain/context/goals Slides 	Make progress on: Understanding domain/context/goals/prelim scope/business case 1/28 Presentation prep
2	3 - 21st Jan	N/A	NO CLASS - MLK Day	
	4 - 23rd Jan	Matt	Requirements Engineering Slides 	Make progress on: Approach for requirements engineering Requirements elicitation/analysis/specifica

3	5 - 28th Jan	All	Team presentations: Project & problem (domain/context/goals/preliminary scope/business case...)	Continue with above 2/4 Presentation prep
	6 - 30th Jan	N/A	CANCELLED - SNOW DAY	
4	7 - 4th Feb	All	Team presentations: Managing requirements (approach, high-level requirements...)	
	8 - 6th Feb	Sujata	Lifecycle models & process frameworks Slides 	Make progress on: Choice of lifecycle model / process framework Review materials from MSD risk management
5	9 - 11th Feb	Eduardo	Risk management	Make progress on: Notional architecture, identify risks/known unknowns/risk management approach
	10 - 13th Feb	Matt	Architecture	Continue with above 2/18 Presentation prep
6	11 - 18th Feb	All	Team presentations: Architecture - approach and high-level artifacts Lifecycle model, process framework	

	12 - 20th Feb	Eduardo	Planning & tracking	Make progress on: Strategic and tactical plans 2/25 Presentation prep
7	13 - 25th Feb	All	Team presentations: Strategic and tactical plan	
	14 - 27th Feb	Sujata	Quality and change management Slides 	Make progress on: Approach/plan for quality/change management 3/4 Presentation prep
8	15 - 4th March	All	Team presentations: managing quality and change on the project, Known risks and risk management approach	
	16 - 6th March	Tony	EOSP overview and expectations	