

# ***Computer Science Corporate Mentor Guidelines***

## **INTRODUCTION:**

Thank you for agreeing to become a corporate mentor for a UTDesign Capstone team. Our students are very excited to work on actual computer science problems with real corporate partners.

The Erik Jonsson School of Engineering and Computer Science offers the Capstone senior design course for computer science, electrical/computer/telecom engineering, and mechanical engineering students. Every engineering and computer science senior at UT Dallas is required to work on a team-oriented Capstone project. This final project will allow them to fully engage in the design process, learning teamwork and project management, as well as using their problem-solving skills.

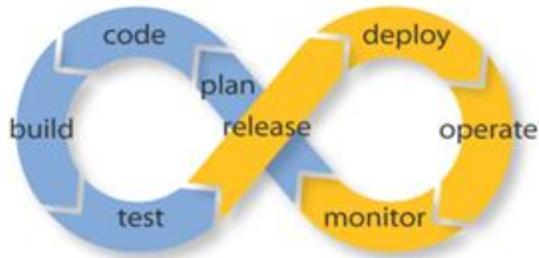
When senior design teams are sponsored by industry, they work under the UTDesign Capstone program. The following summarizes the key roles of those involved in UTDesign: (1) **Department Faculty Director:** This is the department faculty member who recruits corporate sponsored projects, recruits UT Dallas Advisors, assigns students to teams, and stewards the Jonsson School/ corporate relationship. Once the project begins, the Faculty Director is only involved when team performance intervention is required, or when additional resources are needed. (2) **UT Dallas Advisor:** This is a faculty member, a graduate student or a contracted professional who, using their expertise and interests specific to the project topic, provides guidance to the team as they execute their project. The UT Dallas Advisor is responsible for knowing the “who, what, where, when and why” of the software project. (3) **Corporate Mentor:** This is an individual from the sponsoring company, who serves as the technical point of contact for the team, represents the company’s interests, assists the team as they work on the project, and facilitates technology transfer during the project. (4) **Student Team:** They will be the primary architects, developers and testers of the software. (5) **Student Team Leader:** This student is responsible for the project organization and reporting.

## **ROLES AND RESPONSIBILITIES:**

A corporate mentor is a representative from the sponsoring company who provides the expertise for the project from the industry side. This mentor is the point of contact for the team. The role of the corporate mentor is very important in the learning process of our students and the success of the sponsored project. To help the team achieve success, the corporate mentor must: (1) Mentor the team throughout the project so students can gain corporate experience. (2) Mentor the students with new technology, internal processes, software architecture and frameworks, etc. used in their company. (3) Guide the team to meet project milestones. (4) Foster teamwork, high quality-communication and professionalism. (5) Function as the user acceptance tester.

## **DEVELOPMENT METHODOLOGY:**

Software development has evolved from waterfall to Agile to DevOps. Nowadays, Agile methodology is the most commonly used methodology. In Agile, the tasks and their priority may change every sprint (short period of time where all tasks are reevaluated, typically 14 to 28 days. In UT Design Capstone projects it may be 7 to 10 days); and lately DevOps has introduced the CI/CD (Continuous Integration, Continuous Deployment), which is represented on the Figure below.



From the figure you can see that the planning (which includes the design) is a small piece of the whole picture. We use semester deliverables and provide guidelines for currently used methodologies. For example:

### **AGILE IN 4 BULLETS:**

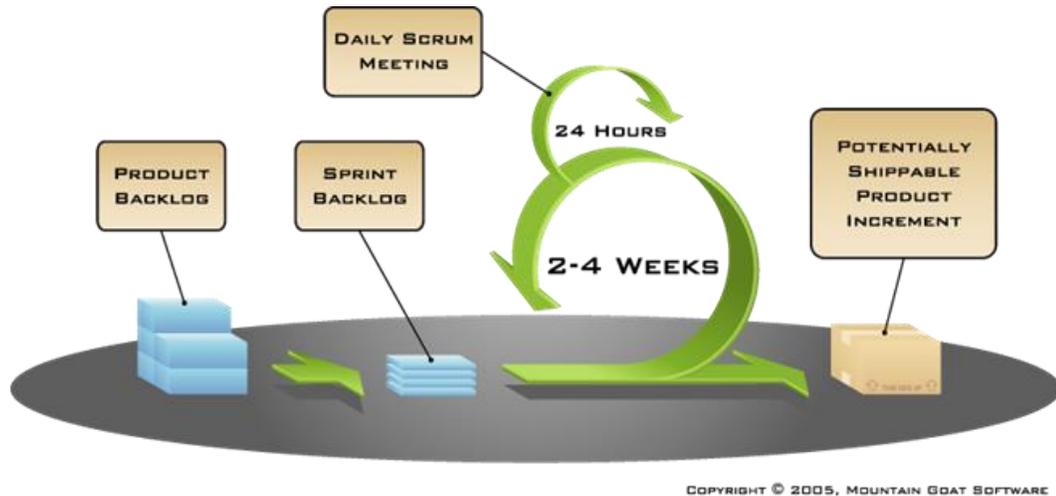
#### ■ **Agile Manifesto:**

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

#### ■ **The scrum framework:**

- A Product Owner creates a prioritized wish list called a Product Backlog.
- During Sprint planning, the team pulls a small chunk from the top of that wish list, a Sprint Backlog, and decides how to implement those pieces.
- The team has a certain amount of time — a Sprint (usually two to four weeks) — to complete its work, but it meets each day to assess its progress (Daily Scrum).
- Along the way, the Scrum Master keeps the team focused on its goal.
- At the end of the Sprint, the work should be potentially shippable: ready to hand to a customer, put on a shelf, or show to a stakeholder.
- The Sprint ends with a Sprint Review and a Retrospective.
- As the next Sprint begins, the team chooses another chunk of the Product Backlog and begins working again.

■ **Inspect and Adapt:**



■ **Does Agile Fit Your Needs?**

