

## **CE 5940S: Building Information Modeling**

### **Course Description:**

This course will focus on design integration throughout the construction process. Key topics will include, but are not limited to, creating architectural, structural, and MEP models, utilizing group collaboration tools, developing BIM execution plans, conducting clash detection, and exploring 4D, 5D, and 6D BIM applications in buildings. Additionally, the course will cover the use of VR applications in the BIM environment.

### **Course objectives (course designed to provide students with):**

This course introduces fundamental theories and applied methods of building information modeling. This course offers a comprehensive introduction to BIM technology, focusing on hands-on experience with industry-standard BIM software and knowledge applicable to your research projects.

### **Course Outcomes (students should be able to):**

1. Apply knowledge of construction components and process.
2. Explain basic concepts in BIM.
3. Use the techniques, skills, and modern engineering software necessary for engineering practice.
4. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

### **Course Topics**

- Architectural / Structural / MEP Modeling
- Revit Documentation, Rendering, Walkthrough
- Clash Detection
- Scheduling (4D), Estimating (5D), Sustainability (6D)
- Site Logistics
- Virtual Reality