AE 597: BUILDING INFORMATION MODELING PLANNING
FALL 2019
Penn State World Campus Online Course

Instructor: John I. Messner, Ph.D.
Charles & Elinor Matts Professor of Architectural Engineering
208 Engr Unit A
jim101@psu.edu

Canvas Course Access: canvas.psu.edu
Course Schedule: There is no defined meeting time. The course will be administered on a weekly schedule with required weekly activities and submissions.

Course Start Date: August 26, 2019
Course Completion Date: December 20, 2019

The goal for this course is for students to learn how to design the implementation of Building Information Modeling (BIM) on Architecture / Engineering / Construction (AEC) projects and within AEC organizations. Students will learn how to perform a structured BIM Execution Planning Procedure developed through research efforts at Penn State. Specifically, students will learn how to select appropriate uses for BIM on a project; develop detailed process maps to show the task and information workflows; create information exchange requirements for the various deliverables; and plan the project infrastructure needed to support BIM implementation on a project. In addition, students will learn how to develop BIM procedures within an organization as well as gaining an understanding of the ongoing initiatives to create the National BIM Standard and other BIM initiatives in leading countries throughout the world. Students will also explore leading research into the field of Building Information Modeling and the digitization of the AEC Industry.

The course is not focused on any one technology or on training for specific BIM computer applications. Students will be exposed to the capabilities of various computing tools, but the focus of the course is on the selection, implementation strategies, and research related to the technologies, not training for these technologies.

Course Organization:
This course will combine video recorded presentations, readings, and student activities and projects. The course is organized on a weekly cycle, with some projects spanning multiple weeks.

Assignments
There will be two group assignments in the course and two individual assignment. The first group assignment will allow student groups of two or three students to focus on the
implementation of the BIM Execution Planning Guide on a specific project. The second group project will focus on the development of a BIM implementation strategy for an organization. The first individual project will focus on the definition of a model workflow for a specific model use. The second individual project will include independent research into an advanced BIM topic of interest to the student.

Assignment Submission:
Assignments will be submitted in electronic format via our Canvas Learning Management System (LMS) as a single document (in PDF format) unless otherwise discussed in the assignment sheet. Late penalties of 10% per day will be assessed on all late submissions. Late assignments will not be accepted after they have been discussed in class or posted to the Canvas site.

Course Grading:
Individual Assignments:
- Assignment 1: Model Use: Definition and Process 10
- Assignment 2: Independent Research Topic 20

Group Projects:
- Project 1: BIM Execution Plan (Project) 15
- Project 2: BIM Execution Plan (Organization) 15

Exercises / Online Quizzes / Exams 40
Participation / Discussion 10

Total 100

Course Readings / Text:
You do not need to purchase any course textbook. The course will leverage the BIM Project Execution Planning Guide and the BIM Planning Guide for Facility Owners, along with research documents and other resources. The planning guides along with template planning content are available for free download at http://bim.psu.edu. You may wish to print the documents for your reference during class if you do not have an easy method to review them on screen. Course readings will be distributed throughout the semester via posting them electronically to the Canvas course management system. We will also have a number of readings from The BIM Handbook (2018) by Charles Eastman et al. This book is available via the Penn State Library at https://cat.libraries.psu.edu/uhtbin/cgisirsi/?ps=ObVbd6Cxml/UP-PAT/X/9#

Academic Integrity:
Academic Integrity is a core value of the educational experience at Penn State and the Department of Architectural Engineering. As such, Faculty Senate Policy 49-20 addresses this aspect of the Penn State education and the Council of Academic Deans provides the following statement.

“Academic integrity mandates the pursuit of teaching, learning, research, and creative activity in an open, honest, and responsible manner. An academic community that values integrity promotes the highest levels of personal honesty, respect for the rights, property, and dignity of others, and fosters an environment in which students and
scholars can enjoy the fruits of their efforts. Academic integrity includes a commitment neither to engage in acts of falsification, misrepresentation, or deception, nor to tolerate such acts by other members of the community.”

“Academic integrity is a fundamental value at Penn State. It must be at the heart of all our endeavors and must guide our actions every day as students and as members of the faculty, administration, and staff. Because we expect new and continuing members of the University community to meet the high standards that are the foundation of a Penn State education, this message must be clear and reinforced frequently.”

“The primary responsibility for supporting and promoting academic integrity lies with the faculty and administration, but students must be active participants. A climate of integrity is created and sustained through ongoing conversations about honesty, trust, fairness, respect, and responsibility and the embodiment of these values in the life of the University. Students and faculty should contribute actively to fostering a climate of academic integrity in all their scholarly activities, through discussions in first-year seminars and in other courses, and through involvement in college Academic Integrity Committees. The University community should be continually mindful of the need to preserve academic integrity even as technology changes methods of information access and use.”

To this end, the Department of Architectural Engineering promotes a commitment to these values: honesty, trustworthiness, respect, responsibility, fairness, and courage.

Dishonesty of any kind will not be tolerated in this course. Dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students who are found to be dishonest will receive academic sanctions and will be reported to the University's Office of Student Conduct for possible further disciplinary sanctions (refer to Senate Policy G-9).

Within this class, all individual assignments are to be completed on an individual basis. Groups are encouraged to discuss information related to their projects, but all group assignments should be performed by the members of the group and the solutions should be unique. No copying of information within assignments is allowed. All students are expected to comply with the academic integrity policy set forth by Penn State University.

**Accessibility Statement:**

Penn State welcomes students with disabilities into the University’s educational programs. Every Penn State campus has an office for students with disabilities. The Student Disability Resources Web site provides contact information for every Penn State campus. For further information, please visit the Student Disability Resources Web site.

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation. If the documentation supports your request for reasonable accommodations, your campus’s disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. You must follow this process for every semester that you request accommodations.

**Counseling and Psychological Services:**

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients’ cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

Counseling and Psychological Services (CAPS) ([http://studentaffairs.psu.edu/counseling/](http://studentaffairs.psu.edu/counseling/)): 814-863-0395

Penn State Crisis Line (24 hours/7 days/week): 877-229-6400

Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

**Educational Equity and Report Bias:**

Penn State takes great pride to foster a diverse and inclusive environment for students, faculty, and staff. Acts of intolerance, discrimination, or harassment due to age, ancestry, color, disability, gender, gender identity, national
origin, race, religious belief, sexual orientation, or veteran status are not tolerated and can be reported through Educational Equity via the Report Bias webpage (http://equity.psu.edu/reportbias/).

Subject to Change:
This syllabus may be revised by the instructor throughout the semester. If revisions are made, they will be posted to the online Canvas course.