IDS 6147 Perspectives in Modeling and Simulation  (3 hours)
Course Syllabus, Fall 2016

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Course Description
This is a mixed-mode/ reduced seat time course designed to introduce students to academic work in M&S at the graduate level. It is a core course for the M&S graduate programs, although we have many students from other UCF programs. By the end of the course, students will be aware of interdisciplinary challenges and opportunities facing this diverse field. Students will demonstrate familiarity with a range of topics and professional track options, with an emphasis on the resources available in the central Florida research corridor. Students will demonstrate academic written and oral communication skills. It is the goal of this class to bridge undergraduate knowledge and graduate-level rigor.

The class is scheduled to meet in Partnership III, room 233 at 4pm-6:50pm. Class meeting schedule will be kept up-to-date on webcourses.

Course Objectives
By the end of this course, students will:

- Demonstrate understanding of graduate level work expectations for the Modeling & Simulation program
- Explore interdisciplinary issues for conducting team science in M&S
- Present on an M&S topic
- Map course objectives to M&S program objectives
- Explore requirements for “academic” writing and reading
- Recognize and use key terms in M&S
- Identify important events in M&S history
- Describe the similarities and differences among forms of modeling, simulation, and training approaches
- Consider links between real-world problems and the contributions M&S can make to address those problems
- Explore the following categories of M&S applications
  - Training
  - Analysis
  - Experimentation
  - Acquisition
  - Engineering
  - T&E
- Map their own backgrounds and their academic plans to the skills required for these applications
- Identify emerging technologies that support these application
- Explore M&S topics in domains including:
  - Military/defense
  - Healthcare
  - Aerospace
  - Education
- Business
- Social Science
- Energy
- Entertainment
- Manufacturing
- Transportation
- Cyber

- Recognize interdisciplinary characteristics of M&S domains
- Identify examples of lifecycle models
- Explore issues in ROI
- Be familiarized with professional M&S Organizations
- Read peer-reviewed research regarding the ethics of science dissemination
- Review scenarios and argue in favor or against the methods employed
- Present on an M&S topic of choice

Contact protocol

Please use WEBCOURSES email to contact me if you have questions about the curriculum, assignments, or grades. The primary means of communication is our live class sessions and our webcourse site. It is your responsibility to check the course site at least twice a week. Also, be sure to set your course options so that you are informed immediately if there are any announcements.

Office Hours

I have hours dedicated to this class Thursdays from 12-3:00 pm. You may drop by my office during this time, or email me through webcourses to make other arrangements. That said, I also travel for research projects, so I highly advise scheduling any visit ahead. I’m also very happy to arrange other times to fit your schedule.

Recommended Text

Most modules will include links to academic work available online or through the UCF library. However, I also recommend (not require) the following text for those of you who have not had a statistics background, so that you may better understand results we discuss:

Salkind, Neil J. (2014) *Statistics for People Who (Think They) Hate Statistics*

Assignments

Each Module has assignments that will be made available online after the corresponding live class. Students (in-class or remote) will be able to view class materials within 24 hours of the live class and due dates will be marked. No late work is accepted. Exceptions to this policy must be made in writing and will be considered on a case by case basis.

Assignments include online quizzes, discussion participation, and other exercises that demonstrate mastery of module content.

Evaluation methods

To support diverse learners and provide a clearer picture of student progress, I use a variety of assessment & evaluation techniques. Each module has at least one graded assignment. These assignments include: brief text responses, discussion posts, quizzes, presentations, and papers. Assignments worth more than 5 points will include a rubric.
Final Project

The final exam will be administered online and will be available for students for 1 week during the university finals week.

Late Assignments

I do NOT accept late submissions. This class is progressive, with each week building on the prior week's work to get you to your final presentation and proposal, so falling behind in the coursework can have detrimental effects. I strongly recommend that you work ahead as often as possible so that you have a cushion of time if you run into a rough spot. That said, you can be the best time manager and sometimes the unexpected occurs. Please, contact me immediately if any circumstance arises that may adversely affect your progress. We will work on a plan together. No extra credit is ever given.

Religious Observances

Students are expected to notify their instructor in advance if they intend to miss class to observe a holy day of their religious faith. For a current schedule of major religious holidays, see the Faculty Center’s main web page under “Calendars,” and for additional information, contact the Office of Diversity Initiatives at 407-823-6479.

Grades/Method of Evaluation

I use a 90-80-70-60 scale, based on percentage of total points. I do my best to give prompt feedback to your work so that you are able to know how you are doing as the course goes on. Take advantage of the rubrics for assignments, as they will guide you to achieving maximum credit for your work. Please note, simply meeting the assignment requirements does not guarantee an A. I define A as outstanding, and the bare minimum is never outstanding.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Points</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
<td>Outstanding work! Much more than would normally be expected for a student at this level. Very strong performance. I learned something valuable from you.</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
<td>Good work! Clearly above average. More than would normally be expected for a student at this level. Above average work and performance. Very few minor flaws.</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
<td>OK. Directions were followed. You did what would normally be expected for the assignment for a student at this level. A few minor flaws.</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
<td>You can do much better. You have performed at a level that is below what one would expect for a student at this level. A number of minor flaws and/or one major flaw</td>
</tr>
<tr>
<td>F</td>
<td>59 or below</td>
<td>What happened? Well below average. More than one major flaw and/or an inordinate number of minor flaws.</td>
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Grade postings: All grades will be posted on Webcourses.

Make up exams

As the quizzes/exams are online, the students may take them any time up until their final due date. If you will not be able to take the test on the day it is due, you must plan to take it prior to that time. In the case of an emergency, contact the instructor immediately to arrange for alternative plans.

Attendance Policy

According to the university, this class is “mixed mode”. Here is the official description:

M – Mixed Mode/Reduced Seat Time courses include both required classroom attendance and online instruction. Classes have substantial activity conducted over the web, which substitutes for some classroom meetings.
While I do not directly penalize for missed classes, attendance is extremely important to success in this class and should be considered mandatory.

Changes/Announcements

Though I try to plan for everything, life will surprise us and we may have to make adjustments. In the event that anything in this syllabus changes (e.g. classroom moves, changes in due dates, contact information), I will use a broad announcement so that all students are informed immediately. Again, it is critically important that you set your webcourse announcements so that you receive all notifications and be sure to check the class site at least twice a week.

Academic Honesty

Plagiarism and cheating of any kind on an examination, quiz, or assignment will result at least in an "F" for that assignment (and may, depending on the severity of the case, lead to an "F" for the entire course) and may be subject to appropriate referral to the Office of Student Conduct for further action. See the UCF Golden Rule for further information. I will assume for this course that you will adhere to the academic creed of this University and will maintain the highest standards of academic integrity. In other words, don’t cheat by giving answers to others or taking them from anyone else. I will also adhere to the highest standards of academic integrity, so please do not ask me to change (or expect me to change) your grade illegitimately or to bend or break rules for one person that will not apply to everyone.

Accessibility Statement

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the professor to request accommodations. Students who need accommodations must be registered with Student Accessibility Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Copyright

This course may contain copyright protected materials such as audio or video clips, images, text materials, etc. These items are being used with regard to the Fair Use doctrine in order to enhance the learning environment. Please do not copy, duplicate, download or distribute these items. The use of these materials is strictly reserved for this online classroom environment and your use only. All copyright materials are credited to the copyright holder.

Third-Party Software and FERPA

During this course you might have the opportunity to use public online services and/or software applications sometimes called third-party software such as a blog or wiki. While some of these could be required assignments, you need not make any personally identifying information on a public site. Do not post or provide any private information about yourself or your classmates. Where appropriate you may use a pseudonym or nickname. Some written assignments posted publicly may require personal reflection/comments, but the assignments will not require you to disclose any personally identity-sensitive information. If you have any concerns about this, please contact your instructor.
## Tentative Schedule

The following schedule acts as a reference and is subject to change. Changes will be announced via Webcourses. It is YOUR responsibility to use the citations to get these articles. All articles used in this class are available online or through the UCF library. It is strongly recommended that you download all of the articles during the first week of the semester and back them up.

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<thead>
<tr>
<th>Week 1</th>
<th>Graduate Studies in M&amp;S</th>
<th>F2F</th>
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<tbody>
<tr>
<td>Week 6</td>
<td>Emerging Tech</td>
<td>TBD: Aug Cog, VR, AI, Robotics, IoT</td>
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<tr>
<td>Week 7</td>
<td>MIDTERM</td>
<td>F2F</td>
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<tr>
<td>Week 13</td>
<td>Presentations</td>
<td>F2F</td>
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<tr>
<td>Week 14</td>
<td>Presentations</td>
<td>F2F</td>
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<tr>
<td>Week 15</td>
<td>FINAL</td>
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