Modeling and Simulation Graduate Program

New Student Orientation: Graduate Certificates
Overview

• Overview of the M&S Graduate Program
  • Administration of the Program
  • Overview of the G.C. Program
  • Key University and Program Policies
  • Program Expectations
  • Words of Advice
Overview of the M&S Graduate Program
The Pursuit of Graduate Education

• Everyone has their own reasons for attending graduate school and earning an advanced certificate

• Whatever your reason…graduate education is quite different from undergraduate education
  • Graduate school demands more of your focus, commitment and a sense of self-motivation

• For many of you, most likely, this will be your first major research experience

• We are VERY glad that you are here!
M&S in the News
Role of UCF & the Central Florida Region

• On 9/22/2011, former President Bill Clinton in an interview on MSNBC’s “Morning Joe” discusses UCF and how the University and Orlando are contributing to the development of “jobs of the future” in the computer simulation industry.

• On 9/20/2012, former President Clinton discussed the need for public, private and nonprofit groups to work together to create hubs that spur economic growth and noted that NASA, Disney, Universal, video game companies, simulation companies and UCF worked together to stimulate the economy.

• On 10/29/2012, former President Clinton states that Central Florida is at the center of the modeling, simulation, and training industry in the US.
Overview of the UCF M&S Program

• A true interdisciplinary program that builds on 20+ years of simulation education at UCF
  • Over 30 faculty and IST researchers at UCF who are considered M&S faculty

• Partners with IST, military simulation agencies and companies, other universities, and professional organizations
  • Most FA-57 Army Officers (simulation specialists) choose UCF for M&S M.S. degree

• M&S students have focused on one or more of the following research areas:
  • Human Systems in M&S
  • Computer Visualization in M&S
  • Quantitative Methods for Simulation, Modeling and Analysis
  • Interactive Simulation and Intelligent Systems
  • Simulation Infrastructure
  • Simulation Management
  • Simulation in Healthcare
  • Behavioral Aspects of Cybersecurity

• Program is becoming more rigorous in terms of modeling, mathematics and engineering
Modeling & Simulation is highly multidisciplinary and active across many research areas at UCF.

M&S graduate students work on projects with faculty in nearly every UCF academic college and research center, and with strong corporate and government partners in the community.

Game-based training, game performance evaluation, tools for after action review [College of Sciences (COS), IST, U.S. Army]

Mobile applications for healthcare training and commercialization (CON, College of Med., College of Health & Public Affairs, College of Business Admin., IST)

Classroom management simulation for teacher training (ENGR, College of Education & Human Performance, IST)

Motion capture technology (ENGR, IST)

DRAMA-RAMA [NIH project with College of Nursing (CON), IST]

STOKES High Performance Computing (ENGR, COS, IST)

Let’s Go To The Fair (NSF STEM project in conjunction with Queens Museum of Art) (College of Arts & Humanities, IST)
Modeling and Simulation Graduate Program

**Programs Offered**

1. Modeling & Simulation Ph.D.
2. Modeling & Simulation M.S.
3. Modeling and Simulation of Technical Systems Graduate Certificate (G.C.)
4. Modeling and Simulation of Behavioral Cybersecurity Graduate Certificate (G.C.)

**Graduates**

- M.S.: 331
- Ph.D.: 84
- G.C.: 18

Grand Total: 433

Since 2001 through Summer 2016

1st cohort of G.C. enrolled Fall 2012

**Active Students**

132 Active Students as of 8.29.2016

- Ph.D.: 45%
- M.S.: 42%
- Tech Sys G.C.: 5%
- Cyber G.C.: 8%

**Leadership**

- Joseph J. LaViola, Jr, Ph.D.
  Graduate Program Director
- Bruce Caulkins, Ph.D.
  Behavioral Cyber Director
- Sabrina Gordon, M.A.
  Graduate Program Coordinator
Administration of the M&S Program
M&S Program Governance

VP & Dean, College of Graduate Studies
Dr. Elizabeth Klonoff
Professor

Director
Dr. Joseph J. LaViola, Jr.
Associate Professor

Associate Director
TBD

Coordinator
Sabrina Gordon, M.A.

Executive Advisory Board¹ (External)

Academic Advisory Board² (Internal)

Curriculum Committee

Admissions, Standards, & Awards Committee

¹Executive Advisory Board
- Eric Anschuetz – Head, Software Systems Branch, Naval Air Warfare Center Training Systems Division
- Waymon Armstrong – President, Engineering & Computer Simulations
- Thomas L. Baptiste – President/Exec. Dir., National Center for Simulation
- Dr. Edward Degnan – Chief, M&S Found. Div., Air Force Agency for M&S
- Dr. Christopher D. Geiger – Sr. Manager, Universal Orlando Resort
- Cindy Harrison – Chief Software Architect, U.S. Army PEO STRI
- Dr. Roger Smith – Chief Technology Officer, Nicholson Center at FL Hosp.
- Dr. Robert Sottilare – Associate Director of Science & Technology, ARL
- Dr. Randall Shumaker – Director, Institute for Simulation & Training
- Janet Weisenford – Fellow, Inner City Fund International (ICFI)
- Dr. Ken Westerlund – Technical Director, Camber Corp.

²Academic Advisory Committee
Discipline areas represented:
- Industrial Engineering
- Psychology
- Computer Science
- Electrical Engineering
- Math
- Philosophy
- Digital Media
- Medicine
- Institute for Simulation & Training
- Education
Overview of the M&S G.C.
# Graduate Certificate Requirements

## M&S of Technical Systems (16hrs)
- **IDS 6147** Perspectives on Modeling & Simulation (3hrs)
- **ESI 5531** Discrete Systems Simulation (3hrs)
- **IDS 6146** Modeling and Simulation Systems (3hrs)
- **IDS 6950** M&S Capstone Report Planning (1hr)
- **IDS 6149** M&S for Testing and Evaluation (3hrs)
- **IDS 6916** Sim. Res. Methods & Practicum (Capstone) (3hrs)

## M&S of Behavioral Cybersecurity (13hrs)
- **IDC 5602** Cybersecurity: A Multidisciplinary Approach (3hrs)
- **CNT 5410L** Cyber Operations Lab (3hrs)
- **IDC 6601** Behavioral Aspects of Cybersecurity (3hrs)
- **IDC 6600** Emerging Cyber Issues (1hr)
- **IDS 6916** Sim. Res. Methods & Practicum (Capstone) (3hrs) or
  - Or **IDS 6262** Research Design for M&S

✓ Grades of “B-” and higher are required in all Graduate Certificate courses. Course must be repeated if satisfactory grade is not earned.
“NOT ANYMORE” Module
For ALL new students admitted FA14 or later

- This is a behavioral conduct module to ensure that UCF remains a safe and productive environment for all members of the community.

- Mandatory module should be completed online before classes begin.

- Enrollment for next semester will be dropped/placed on hold if not completed by the end of first semester.
Continuing Your Graduate Education
The M.S. Degree…

For future consideration…. 

• Students who complete a UCF Graduate Certificate in Modeling and Simulation are strongly encouraged to consider continuing in the Modeling and Simulation M.S. Program after certificate completion.

• The M&S M.S. degree requires a minimum of 30 credit hours, and all credits from your certificate courses would be accepted for use.

• Credit from Behavioral Cybersecurity GC courses would also be fully accepted in our partnering programs:
  • Computer Engineering MSCpE
  • Industrial Engineering MS
Continuing Your Graduate Education
Modeling and Simulation M.S. Degree Requirements

<table>
<thead>
<tr>
<th>M.S. Requirements</th>
<th>Core Courses (15hrs)</th>
<th>Electives (15hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 6147 Perspectives on M&amp;S</td>
<td>✓ Accepted from G.C.</td>
<td>✓ 10hrs accepted from G.C.:</td>
</tr>
<tr>
<td>DIG 5876 Quant Asp of M&amp;S (or sub)</td>
<td>□ Remaining after G.C.</td>
<td>- ESI 5531 Discrete Sys. Sim.</td>
</tr>
<tr>
<td>IDS 6148 Human Systems Integration</td>
<td>□ Remaining after G.C.</td>
<td>- IDS 6146 M&amp;S Systems</td>
</tr>
<tr>
<td>IDS 6916 Sim. Res. Meth. &amp; Practicum</td>
<td>✓ Accepted if non-thesis</td>
<td>- IDS 6950 M&amp;S Rep Plng</td>
</tr>
<tr>
<td>Varies depending on focus area. Students may choose classes from any dept/college at UCF with advisor approval</td>
<td></td>
<td>- IDC 5602 Cyber: Multi-Dis</td>
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<tr>
<td></td>
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<td>- CNT 5410L Cyber Op. Lab</td>
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<td>- IDC 6601 Beh. Asp. Cyber</td>
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<td></td>
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<td>- IDC 6600 Emerging Cyber Issues</td>
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<td>□ 5-6 hrs remaining after G.C.</td>
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Certificate

<table>
<thead>
<tr>
<th>Certificate</th>
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<tbody>
<tr>
<td>M&amp;S of Behavioral Cybersecurity G.C. (17-18hrs remaining after G.C.)</td>
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</tbody>
</table>

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<th>Certificate</th>
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<td>□ Remaining after G.C.</td>
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<tr>
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<td>□ Remaining after G.C.</td>
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<tr>
<td>□ Remaining after G.C.</td>
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</tbody>
</table>
University Facilities, Resources and Support Services

Library
library.ucf.edu

University Writing Center
407-823-2197
www.uwc.ucf.edu

International Services Center
407-823-2337
www.intl.ucf.edu

Campus Bookstore
407-823-2665 (JTWC)
407-882-0364 (B&N)
ucf.bncollege.com

Career Services
407-823-2361
www.career.ucf.edu

Health Services
407-823-2701
hs.sdes.ucf.edu

Student Disability Services
407-823-2371
sds.sdes.ucf.edu

Counseling Center
407-823-2811
counseling.sdes.ucf.edu

Recreational & Wellness Center
407-823-2408
rwc.sdes.ucf.edu

UCF Student Union
ucfsu.com
University Facilities, Resources and Support Services

Graduate Student Center
graduate.ucf.edu

Technology Commons
407-823-4357
servicedesk@ucf.edu

Veterans Academic Resource Center
407-823-2707
varc@ucf.edu

STOKES High Performance Computing
help-stokes@ist.ucf.edu

Most, if not all, of these resources are available to distance students. Be sure to indicate your distance-student status when seeking out these resources.
M&S Website & Resources
www.ist.ucf.edu/grad

Our website is a great place to find:

- Examples of course syllabi,
- Seminars (past recordings and future announcements)
- Forms and procedures,
- Brochures for all of our programs,
- Contact information,
- And MORE!
Key Graduate Program Policies
Understand the University Policies

• The UCF Graduate Catalog is online (www.graduatecatalog.ucf.edu)

• Must be acquainted with **ALL** university policies

• Will now highlight more relevant policies for graduate education
  • Non-degree seeking status
  • Coursework plan
  • Time limitations
    • 7-Year Rule
  • Enrollment policies
    • Full-Time vs. Part-Time Enrollment
    • Continuous Enrollment
  • Unsatisfactory grades and academic standing
Non-degree seeking status

• Graduate Certificates are not degree programs

• Students who are only enrolled in a graduate certificate (and not in another MS/PhD program) will be reported as “Non-Degree Seeking” status
  • This is usually pertinent to those who are pursuing financial aid or loans, since funding agencies often define the eligibility
Coursework Plans for Graduate Certificates

• Graduate Certificate plans of study are not flexible

• Course substitutions are not permitted. Any request for an exception would require a petition to the UCF Graduate Council

• Please contact the M&S Graduate Office ASAP if you need to discuss this further
Time Limitations

• Your graduate certificate, when granted, should be current and up to date in the discipline

• **7-Year Rule**: No courses used in a G.C. can be older than 7 years at the time of completion
  • This is based on when each course is taken – not on admit term
  • For example, the course(s) that you take in the Fall 2017 semester will be valid until the end of Fall 2024.
    • It will expire in **January 2025**.
Enrollment Policies

*Full-Time vs. Part-Time Enrollment*

- Fall and Spring terms
  - Full-Time Enrollment $\geq 9$ credit hrs
  - Part-Time Enrollment $< 9$ credit hrs

- Summer terms
  - Full-Time Enrollment $\geq 6$ credit hrs
  - Part-Time Enrollment $< 6$ credit hrs
Enrollment Policies

Continuous Enrollment

• Cannot miss 3 consecutive academic terms (Fall/Spring/Summer) to remain ACTIVE student
  • Will automatically become INACTIVE, if you do
  • In the case of an extenuating circumstance, a Special Leave of Absence may be requested by a student to temporarily waive the continuous attendance requirement

• MUST RE-APPLY to certificate, if you become INACTIVE
  • Readmission is not guaranteed
  • Readmission decisions are based on such factors as space in the program, reasons for the break in graduate education, progress in the degree program, among others
  • MUST follow catalog year of readmission
Enrollment Practices

• **Deadlines**

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
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<td>13</td>
<td>14</td>
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<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
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Regular Registration

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<tr>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of Regular RG</td>
<td><strong>Classes Begin</strong></td>
<td></td>
<td></td>
<td><strong>Drop/Swap Deadline</strong></td>
<td><strong>Add Deadline</strong></td>
<td></td>
</tr>
</tbody>
</table>

Late Registration

• **Late Enrollment**
  - You must be enrolled in something by the deadline for regular registration; you may then add/drop through those respective deadlines.
  - If you wait to process your first enrollment attempt after classes begin, you will be assessed a $100 late enrollment fee.

• **UCF 1500**
  - This is an administrative course in which anyone can enroll to process first registration during regular registration. Can use add/drop periods to adjust enrollment later.

• **Multiple Term Enrollment**
  - Enrollment opens up in March each year for the next 3 semesters (Summer, Fall, Spring).
  - Students can plan coursework by enrolling in future semesters.
Enrollment Policies

• Per university policy, students must be enrolled in order to:
  • take exams,
  • conduct research, or
  • use any university resources (i.e., library access, faculty and staff member’s time, etc.).
Unsatisfactory Grades

• Students must earn course grades of "B-" or better to get credit toward the certificate.

• Courses may be retaken to achieve a better grade. However, the certificate will only be awarded if the graduate status GPA in the certificate program of study is 3.0 or higher.

• Be aware of +/- grades
  • “B-” is calculated as 2.75
Academic Standing

• Regular
  • Students must maintain a Graduate Status GPA of 3.0 or better in order to maintain regular graduate student status, receive financial assistance, and qualify for graduation.

• Probation
  • If GPA < 3.0 (but still higher than 2.0), student will be automatically placed on academic probation.
  • Students are expected to improve GPA to 3.0 or higher within 9hrs of being placed in Probation status.

• Dismissal
  • If GPA < 2.0, student will be automatically dismissed from all active programs at UCF
  • Any student who has earned more than two unsatisfactory grades, including C+ or less, U or WF is subject to dismissal from the program
New Student Advising

Technical Systems G.C.

<table>
<thead>
<tr>
<th>Required Course</th>
<th>Course Offering</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 6147 Perspectives on Modeling &amp; Simulation</td>
<td>Every Fall and Spring Semester</td>
</tr>
<tr>
<td>ESI 5531 Discrete Systems Simulation</td>
<td>Every Spring Semester</td>
</tr>
<tr>
<td>IDS 6146 Modeling and Simulation Systems</td>
<td>Every Summer Semester</td>
</tr>
<tr>
<td>IDS 6950 Modeling and Simulation Capstone Report Planning</td>
<td>Every Summer Semester</td>
</tr>
<tr>
<td>IDS 6149 Modeling and Simulation for Test and Evaluation</td>
<td>Every Fall Semester</td>
</tr>
<tr>
<td>IDS 6916 Simulation Research Methods and Practicum (Capstone)</td>
<td>Every Fall Semester</td>
</tr>
</tbody>
</table>

- Depending on personal preference, students may pursue the G.C. by taking one course each semester using the sequence above or they may take two courses each semester.
# New Student Advising

*Behavioral Cybersecurity G.C.*

<table>
<thead>
<tr>
<th>Required Course</th>
<th>Course Offering</th>
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<tr>
<td>IDC 5602 Cybersecurity: A Multidisciplinary Approach</td>
<td>Every Fall Semester</td>
</tr>
<tr>
<td>CNT 5410L Cyber Operations Lab</td>
<td>Every Spring Semester</td>
</tr>
<tr>
<td>IDC 6601 Behavioral Aspects of Cybersecurity</td>
<td>Every Summer Semester</td>
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<tr>
<td>IDC 6600 Emerging Cyber Issues</td>
<td>Every Summer Semester</td>
</tr>
<tr>
<td>IDS 6916 Simulation Research Methods and Practicum (Capstone) or</td>
<td>Every Fall Semester</td>
</tr>
<tr>
<td>IDS 6262 Research Design for M&amp;S</td>
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<tr>
<td><em>or</em> IDS 6262 Research Design for M&amp;S</td>
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</tbody>
</table>
Core Expectations for Graduate Education in the M&S Program
Expectations of M&S Graduate Students

• Work responsibly toward completion of the degree in a timely fashion;
• **Communicate regularly** with your faculty advisor/mentors, your Master’s/Doctoral Advisory committee and the Program Office, especially in matters relating to your progress within the degree program;
• **Take responsibility for keeping informed** of regulations and policies governing your graduate studies and to complete all required paperwork and other degree obligations in a timely fashion;
• **Exercise the highest integrity** in all aspects of your work and in your interactions with your student peers and university faculty;
• Contribute, wherever possible, to the discourse of the discipline through conference presentations, publications, and other means;
• **Seek out a range of faculty and peer mentors** that can help prepare you for a variety of professional and career roles and responsibilities; and
• **Realize your responsibilities as individual and professional representatives** of both the University and the program
Expectations of the M&S Graduate Program

• **Provide all incoming and enrolled students with a clear structure** of the expected stages of progress towards their respective degrees;

• Offer a curriculum and appropriate forms of instruction necessary to ensure timely completion of the degrees;

• Evaluate the graduate curricula to assure that students are equipped with the knowledge and skills required for a broad array of post-graduate careers;

• **Utilize program and University processes for assessing students’ progress** towards the degrees;

• Provide specific details regarding likely career opportunities;

• **Ensure academic support** for graduate students and faculty;

• **Maintain the highest standards of academic quality** in all aspects of the graduate program, from admission of new students to the quality of work accepted as fulfilling the requirements of the Master’s or Ph.D. degrees; and

• Provide clear and appropriate avenues of redress wherever particular faculty or student experiences fall short of these expectations in order to ensure quality in all aspects of graduate education in the program.
Stay in Contact with Us

• Must use UCF’s student e-mail system (www.knightsmail.ucf.edu)

• University and program information and notices will ONLY be sent here

• You can view your Knights e-mail from other e-mail accounts
Upcoming Events

• M&S Seminar Series

• M&S Food for Thought – Open Lunch Hour
  • Held each month
  • 12:00pm – 1:00pm
  • Partnership II Building, 3rd floor collaboration area

• MaSK Student Organization Meetings

Event information available online: http://www.ist.ucf.edu/grad/index.html
## Stay in Contact with Us

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Program Director</th>
<th>Support Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling &amp; Simulation Ph.D.</td>
<td>Joseph J. LaViola, Jr., Ph.D.</td>
<td>Sabrina Gordon, M.A.</td>
</tr>
<tr>
<td></td>
<td>Associate Professor, Computer Science M&amp;S Director</td>
<td>Coordinator</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:jjl@eecs.ucf.edu">jjl@eecs.ucf.edu</a></td>
<td>(407) 882-1407</td>
</tr>
<tr>
<td></td>
<td>Partnership II Bldg – 131J</td>
<td><a href="mailto:Sabrina.Gordon@ucf.edu">Sabrina.Gordon@ucf.edu</a></td>
</tr>
<tr>
<td>Modeling &amp; Simulation M.S.</td>
<td></td>
<td><a href="mailto:modsim@ucf.edu">modsim@ucf.edu</a></td>
</tr>
<tr>
<td>Modeling &amp; Simulation of Technical Systems G.C.</td>
<td></td>
<td>Partnership II Bldg – 131D</td>
</tr>
<tr>
<td>Modeling &amp; Simulation of Behavioral Cybersecurity G.C.</td>
<td>Bruce Caulkins PhD, Colonel (Ret), US Army</td>
<td></td>
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<tr>
<td></td>
<td><a href="mailto:bcaulkin@ist.ucf.edu">bcaulkin@ist.ucf.edu</a></td>
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<td>(407) 882-2427</td>
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<td>Partnership II Bldg – 319</td>
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</tbody>
</table>
Stay in Contact with Us

• Join our networks and stay informed!

• Find us on facebook and LinkedIn

• Search for “UCF Modeling & Simulation Graduate Program”
Words of Advice
Sorry … There Are No Shortcuts to Your Certificate!
You Must ...

... work hard...

... be determined...

...and, stay focused.
But, the Key to Life Is Balance!
Thank You for Your Attention!

We are VERY glad that you are here!

Questions? Comments?
Please feel free to contact us…