Masters of Science in Software Engineering

Orientation Session
Fall 2018
Agenda

- 9:00-9:15 Fill out paperwork
- 9:15-10:15 Program overview
- 10:15-10:30 Break
- 10:30-12:00 Workshop on group projects
- 12:00-1:00 Lunch and faculty introductions
- 1:00-1:30 Student Information System (SIS) overview
  - In GOL 1650
- 1:30-2:00 Open Advising
Program Overview

- RIT was the first US university to offer the baccalaureate software engineering degree.
- Building on our leadership position in undergraduate software engineering education, we implemented the Master of Science degree in Software Eng.
- The program's core content ensures that graduates will possess both breadth and depth of SE knowledge.
What Does it Mean to Engineer Software?
The software engineer’s daily job is to answer questions about the software system.

- How can I help the customer? What is required to solve the customer’s problem?
- How will the user interact with the system?
- What operating system, language, hardware is going to be used?
- What is the overall software system structure and how do different components interact with each other?
- What code do I have to write?
- How do I organize my team so we are effective?
- Can we finish the software in time to support our publication deadline?
Engineering Disciplines

- Traditional engineering disciplines:
  - Civil Engineering
  - Mechanical Engineering
  - Industrial Engineering
  - Chemical Engineering
  - Electrical Engineering

- More Specialized:
  - Nuclear, Biomedical, Aerospace, Aeronautical, Environmental, Computer, Software
What is Software Engineering All About?

Creating useful, high quality, cost-effective software solutions for individuals and industry

- **Define**
  - What problem are we solving?
  - Can we solve it with software?

- **Design**
  - What components do we need?
  - How do they interact?
  - Buy them, build them, or use a special purpose framework?

- **Develop**
  - Flesh out details – coding
  - Test resulting program
  - Debug and repair flaws

- **Deliver**
  - Distribution and installation
  - User documentation
  - Developer documentation
  - Maintenance: fix, extend, integrate
A software engineering program should be a balance of areas in the computing realm.
The ACM, AIS, IEEE-CS Computing Curricula 2005 Overview used diagrams to explain the range of computing disciplines.
The College: GCCIS

Golisano College of Computing and Information Sciences

- Founded July 2001
- Dean: Dr. Anne Haake

www.gccis.rit.edu/anne-haake
The College: GCCIS

Department of Software Engineering

- Professor and Chair:
  - Naveen Sharma

https://www.linkedin.com/in/nsharma2
The College – continued

- **Departments**
  - Software Engineering
    - Preparing to include Data Science
  - Computer Science
  - Computer Security
  - Information Sciences and Technologies
    - Including Human Computer Interaction and Networking and Systems Administration
  - School of Interactive Games & Media
- **Ph.D. Program**
SE Program Overview

- 36 semester credit hours
- 4 semester program
- Co-op is optional but encouraged
- Courses are a mixture of hands-on projects and research
- Thesis or Capstone option
Moved Research Methods to the beginning of the curriculum
- Student exposure to research
- Faculty exposure to students
Introductions – Graduate Program Faculty

- **Naveen Sharma** – SE Department Chair
- **Scott Hawker** – Grad Program Director
- **Travis Dessel** – Faculty (Data Science)
- **Yasmine El-Glaly** – Faculty
- **Dan Krutz** – Faculty
- **Andy Meneely** – Faculty
- **Mehdi Mirakhorli** – Faculty
- **Mohamed Wiem Mkaouer** – Faculty
- **Pradeep Murukannaiah** – Faculty
- **Christian Newman** – Faculty
- **Oliver Wang** – Faculty
<table>
<thead>
<tr>
<th>Faculty</th>
<th>Research Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy Meneely</td>
<td>Engineering Secure Software Systems</td>
</tr>
<tr>
<td>Dan Krutz</td>
<td>Mobile Security/Privacy</td>
</tr>
<tr>
<td>Mehdi Mirakhorli</td>
<td>Application of Machine Learning to Software Architecture</td>
</tr>
<tr>
<td>Mohamed Wiem Mkouer</td>
<td>Search-based Software Engineering</td>
</tr>
<tr>
<td>Naveen Sharma</td>
<td>Self-* and adaptive software system for immune/resilient infrastructure</td>
</tr>
<tr>
<td>Oliver Yi Wang</td>
<td>Global Software Engineering</td>
</tr>
<tr>
<td>Pradeep Murukannaiah</td>
<td>Engineering Intelligent Agents</td>
</tr>
<tr>
<td>Scott Hawker</td>
<td>Software Engineering practices for end-user developers</td>
</tr>
<tr>
<td>Yasmine El-Glaly</td>
<td>Usability engineering</td>
</tr>
<tr>
<td>Christian Newman</td>
<td>Source code analysis and transformation</td>
</tr>
<tr>
<td>Travis Dessel</td>
<td>Data Science</td>
</tr>
</tbody>
</table>
Student Introductions

- What is your name?
- Where you are from?
- Why Software Engineering at RIT?
SE Computer Account

- **Kurt Mosiejczuk & Arnela Stupac-Catello** – System Administrators
- You will be assigned a departmental account
- Can use it in SE classrooms, labs, team rooms
- Print Quota
- Storage Quota
- Team Room Access
<table>
<thead>
<tr>
<th>Codes &amp; Abbreviations to Know</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software Engineering</strong></td>
</tr>
<tr>
<td><strong>Golisano College of Computing &amp; Information Sciences</strong></td>
</tr>
<tr>
<td><strong>Program Code</strong></td>
</tr>
<tr>
<td><strong>Year level</strong></td>
</tr>
</tbody>
</table>
Contacts

- **Who to contact**
  - Bridgette Fortner and Dawn Smith: Administrative issues
  - Scott: Academic/Career issues
  - Kurt & Arnela: Computer Account Issues – tech@se.rit.edu or GOL-1518

- **Messages from the Department:**
  - RIT email
Software Engineering Facilities

- Studio Labs/Classrooms
- Team Rooms
- CoLab
- Mentoring Lab (Society of Software Engineers)
- PhD Lab
- Shared space with IST
  - Primary: GOL 2670
  - Secondary: either GOL 2130 (Networking lab) or GOL 2320 (Sys Admin lab) when they are not being used for classes
- Faculty and Staff Offices
Curriculum

○ Plan of Study
  ● Follow the curriculum flow chart
  ● Meet with Dr. Hawker to discuss your goals and determine your courses
  ● You can revise your selections
    ○ Within constraints
Recent SE Electives

- More graduate faculty results in more SE elective opportunities
  - Accessible Software Engineering
  - Data Science Methods in Software Engineering
  - Engineering Self-Adaptive Software Systems
Curriculum

- **Bridge Courses**
  - You were informed of the need to complete any upon admission.
  - Must complete with grade of at least ‘B’
    - ‘B-‘ is not a ‘B’
Curriculum – Electives

- Must be approved
- Course number 600 or greater to count
- Grade must be a ‘C’ or greater to count
  - ‘C-’ is not a ‘C’
- Courses typically from SE, CS, CE, HCI, IST, Management (BUSI)
- Pre-approved list is on-line
Curriculum

- Optional Co-op
  - Can be after 18 credits
  - What is a co-op? When can I take it?
  - How do I find one?
Grading

- You must maintain a grade point average \( \geq 3.0 \)
- You must obtain at least a ‘B’ in each required Bridge course
  - If you receive less than a B, you must repeat the Bridge course the following term. A ‘B-’ is not a ‘B.’
- You must obtain at least a ‘C’ in every graduate course
  - A ‘C-’ is a failing grade
- The GPA is calculated on **ALL** courses, including bridge; 36 credits used for certification:
- Repeating a graduate course does not replace the grade
Curriculum: Capstone or Thesis

- Taken at the end of your program
- Thesis: 6 credit-hour research experience with a faculty advisor and committee
- Capstone: 3 credit-hour hands-on experience with a faculty advisor
- Process starts the semester with SWEN 640 Research Methods
  - Topic proposal, with literature review
  - Locate advisor and committee*
- Refer to Graduate Student Handbook for further details
Course Registration Process

1. Know your registration date
2. Meet with Scott
3. Submit applicable forms
   - Elective Approval Form
   - Independent Study Form
   - Capstone or Thesis Registration Form
   - Capstone or Thesis Continuation Form
4. Register online using SIS
Registration Tips

- Don’t put off registration.... courses may fill up quickly
- Most SE courses are offered only once per year.... make sure you stay on track
- Use the flowchart to track your progress
Add/Drop and Withdrawing

- **Add/Drop**
  - First week of classes
  - Changed courses will not be recorded on your transcript

- **Withdrawal**
  - After add/drop, you can withdraw from a course (consult the academic calendar)
  - You will receive a grade of ‘W’ on your transcript
Other Policies & Procedures

- Academic Probation
- Academic Honesty
- 7-Year Rule
Scheduling Appointments

- Contact the front desk or send an email to schedule an appointment
- No same day appointments
- Sample advising topics:
  - Registration
  - Plan of Study Worksheet Review
  - Leave of Absence/University Withdrawal
  - Course Withdrawal
  - Academic Difficulty
  - Graduation/Remaining Requirements
  - Schedule Planning/Changes
  - Change of Program Out
  - Full-time Equivalency (FTE)
  - Co-op
How to Connect - Advisor/Advisee Etiquette

- Be patient and respectful
- Include your first and last name in email
  - Write professional, business-quality emails
- Plan ahead – emailing the night before a deadline will not guarantee a prompt response
- Do not consult your friends/peers for advising matters
- Arrive to appointments on time
How to Connect - Resources

- Graduate Director and Faculty
- Staff
- Tutoring Center
- Academic Support Center
- Campus Writing Commons
- Graduate Meetings/Workshops
- Email
- Graduate Studies, International Student Services, Health Center, etc.
- Office hours
Timing Is Everything - Full-time Status

- Must register for and successfully complete nine or more credit hours per semester
- If you fall below nine credits by dropping or withdrawing from a course, your scholarship, financial aid, student loans and student visa (if any are applicable to you) will be affected in future terms
- See Prof. Hawker before you do anything that will change your status
Helpful Hints – Full-time Status

- Withdrawing/Dropping a course is NOT always possible
- Full-time equivalency: you may use only 2. It is important you use them wisely so you will have ample time to complete your degree
- Intersession and summer terms are considered breaks in which you are not required to be enrolled
- Can be less than full-time during last semester
Timing Is Everything - Application For Graduation

- Registrar emails all grad students beginning their first semester inviting them to Apply for Graduation on the system

- Apply TWO TERMS before you complete the program
Advisor and Program Director

- Bridgette, Dawn, and I work closely together
- Do not ‘shop around’ for answers
Plagiarism and Cheating

- Plagiarism and cheating will not be tolerated at RIT
  - Copying another person’s homework or code
  - Giving another student’s code or answers on assignments
  - Copying from the Web
  - Working with peers when not given permission
  - etc.

- It is your responsibility to obtain a good understanding of what plagiarism is

- The library is a good source of information

- Plagiarism or cheating can result in an “F” for an assignment or an “F” in the course

- Scholarship will be taken away

- I-20 Program Extension may not be granted

- Suspension is possible

- **THIS IS SERIOUS**
Academic Dishonesty - Consequences

- First offense:
  - Scholarship will be removed for the term it happens
  - This means you have to pay more money

- Second offense:
  - Suspension or ‘not renewing of I-20’
Probation and Suspension

- You must maintain a 3.0 semester and cumulative GPA
- You will be placed on probation if your semester and/or cumulative GPA fall below 3.0
- If your cumulative GPA is below 3.0, you must raise it to a minimum of 3.0 the next academic semester or face suspension
- Suspended students must leave the university for one year and then MUST reapply to obtain an RIT degree. Re-admission is not guaranteed.
- Talk to me as soon as possible if this may happen to you
Co-Op

- Co-op is a privilege
- Full-time students and GPA $\geq 3.0$
- Completed the Bridge Program
- Completed $\geq 18$ credits of the MS
Co-Op – Bad Things

- If you are found responsible for academic dishonesty
  - Future co-op will most likely not be granted
  - Scholarship will be removed
- If co-op report from your employer is very bad
  - Future co-op will most likely not be granted
- If you renege a co-op
  - Future co-op will not be granted
  - Scholarship will be removed
Etiquette

- Behave as a Professional
  - Politeness
  - Humility
  - Honesty
  - Patience
  - Personal hygiene
  - Mindful of others
RIT SE Web Presence

www.se.rit.edu

fb.com/SEatRIT
Wrap-up

- Any questions?
- Any comments?
- Any concerns?