Software Engineering M. S. Fall 2023 Edition

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Become a Leader in Software Engineering

With a Master of Science in Software Engineering from UHCL, students will be prepared for leadership roles in industries that contribute to the development of application software, software tools, techniques, and methods that center around the development of mobile and cloud-based applications as well as business applications and others. The degree prepares students to be effective and contributing members of software project management and project development teams in both agile and plan based environments. The degree strives to produce responsible critical thinking students who can work well in teams and communicate problem design, requirements, and implementation results using both written and oral communication methods. Studies in this degree address the foundations, methodologies and tools used in the management, planning, design, testing and engineering of software systems. By providing a careful balance between theory and practice, the plan prepares students for central software positions in industry, government and institutions where software engineering has become a key activity.

General College Guidelines

1. **Assistantships**

1.1. Teaching Assistantships

1.1.1   Responsibilities and Academic Requirements

The main responsibility of Teaching Assistants is to assist the primary instructor of the course. Activities may include holding office hours, assisting with grading assignments, conducting lab sessions, assisting in studio courses and providing supplemental instruction. Standard half-time Teaching Assistants are expected to work 16-20 hours per week during the term of appointment. Quarter-time Teaching Assistants are expected to work 8-10 hours per week. In order to be eligible for a Teaching Assistantship, graduate students need to be enrolled in at least 6 SCH's during the long semester or 3 SCH's during the summer semesters. In addition, TA's need to be in good academic standing with a GPA of at least 3.0.

Examples of main responsibilities	- hold office hours - grade papers - conduct or assist with lab sessions - assist in studio courses - provide supplemental instruction in undergraduate courses.
Standard half-time TA work expectations during appointed term	16-20 hrs/week
Quarter-time TA work expectations during appointed term	8-10 hrs/week
SCH enrollment requirement	- at least 6 SCH's during the long semester (Fall or Spring) 3 SCH's during the summer semesters
GPA requirement	good academic standing with a GPA of at least 3.0

1.1.2   Appointment Process

Graduate Students may apply for Teaching Assistantships by filling out the forms available from the Department Secretary. Students should be sure to include their resume with their application. Application needs to be submitted each semester.

1.1.3   Assessment

Each Semester Teaching Assistants will be evaluated by their supervising faculty member.

1.1.4   Compensation

Half-time Teaching Assistants are paid a rate of $3000 per semester and are given in-state tuition waivers. Half-time Teaching Assistants are also eligible to enroll in the university's group medical insurance program. Quarter-time Teaching Assistants are paid a rate of $1500 per semester and are not eligible for in-state tuition waivers or enrollment in the university's group medical insurance program.

1.2. Research Assistantships

1.3. Responsibilities

The primary responsibility of Research Assistants is to assist a faculty member in the conduct of their research. Eligibility requirements are the same as those for teaching assistants.

1.1.5   Appointment Process

Research Assistants are funded through the sponsoring faculty member's grants. These may be internal grants provided by the college or external grants provided by other agencies. The application process for RA's is similar to that of TA's except that the process often starts with a conversation between the student and faculty member. The application is available from the Department Secretary and online at https://www.uhcl.edu/science-engineering/documents/cse-ra-application.pdf.

1.1.6   Assessment

Research Assistants are evaluated by the sponsoring faculty member each semester.

1.1.7   Compensation

Research Assistants are paid approximately a rate of $3000 per semester and are given in-state tuition waiver. Research Assistants are also eligible to enroll in the university's group medical insurance program.

2. Candidate Plan of Studies and working with your Faculty Advisor

2.1. Purpose of CPS

The purpose of the Candidate Plan of Study (CPS) is to track each student's progress towards degree completion. It spells out the specific requirements needed to complete the degree

and is signed by the student and student's faculty advisor. The official CPS is kept in the CSE Dean's office but students are encouraged to keep their own copy. The process of creating a CPS typically starts a few months after a student arrives on campus. Creating the document begins with a meeting between the student and their faculty advisor. They will fill out a CPS worksheet where it will be determined when the student will take what classes and which capstone option will be selected.

2.2. Scheduling Appointments with your Faculty Advisor

Every graduate student is assigned a faculty advisor when they are admitted to the program. The name of the faculty advisor, along with their email address, is listed on each student's admission letter. Students are responsible for arranging initial appointments with their faculty advisor. Student's faculty advisor will be their main point of contact with respect to their degree progress.

2.3. Questions to ask your advisor

During your first meeting with your advisor, you may want to discuss issues such as: long-term career goals, areas of research interest, preparation for Doctoral programs or the work-force, time constraints in completing the degree, etc. You are not obligated to work on a research project or thesis with your faculty advisor.

The most important decision in CPS process is whether you will do an MS thesis or choose instead the capstone project option. The decision should be based on your long-term goals including plans for pursuing a PhD and your interest in and aptitude for research. Your advisor will assist you in making that decision.

3. Research Opportunities

3.1. Purpose of research at UHCL

As UHCL is considered a Teaching University, the primary purpose of research is for the educational enhancement of our students. As such, faculty see student involvement in research as a learning opportunity and should be encouraging and supportive. Any results such as the publishing of articles or the awarding of grants is considered secondary to student learning outcomes.

3.2. On-Campus vs Off-campus research

Because of our proximity to NASA and high-tech industry, there are often opportunities for students to pursue research off-campus. For the purposes of thesis and non-thesis work this is not distinguished from on-campus research. Students should however make sure their Faculty Advisor and the Program Chair are aware of any research they are involved in that does not involve a full-time UHCL faculty member.

3.3. Research Opportunities

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Research opportunities are often offered by UHCL Faculty Members, Members of our Advisor Board, the UHCL Career Services office and sometimes by student organizations. Students need to discuss such opportunities with the faculty.

4. Dispute Resolution

4.1. Informal Resolution with Instructor

In the interest of the program, we take dispute resolution very seriously. Whenever possible, it is preferable that students resolve any issues with their instructor directly. This is best done during the faculty member's office hours or before/after class when the discussion can be done privately.

4.2. Escalating Issues to the Chair

If a student is unsuccessful in resolving an issue with the instructor, the next step is to escalate that dispute to the Program Chair. The student should arrange to meet with the Program Chair or send him or her an email stating the issue. The Chair's duty is then to investigate the issue, listen to all sides and try to form a resolution. If the Program Chair cannot resolve the issue, the student may go to the Department Chair for help.

4.3. Escalating Issues to Dean/Associate Dean

Beyond the Program, issues must be written in order to be considered by the Dean/Associate Dean. This may take the form of an email. Before sending a complaint to the Department Chair, Associate Dean or Dean, the student should to try working within the Program to solve the issue.

4.4. Escalating Issues beyond the CSE Dean's Office

In extreme cases, issues may need to be escalated to the Provost or President. In these situations, the issue must be in writing and the Program/College should have had the opportunity to address the issue. In cases where the upper administration receives a student complaint, they rarely investigate it if the college was unaware of the complaint. Policy requires sending the complaint to the program, department or college where it originated.

5. Co-ops and Internships

5.1. Finding an Internship or Co-op

UHCL has made a conscious decision to centralize all internship information into the Office of Strategic Partnerships. This office maintains a database of all internship information and vets each company before they can hire UHCL students as interns. This makes it straight-forward for students to identify potential internships and know they are with reputable organizations.

5.2. Application Process

Once a student identifies an internship, they will need to get an offer letter from the organization and fill out the appropriate UHCL internship documentation. The Office of Strategic Partnerships is available to help with the process. In addition, students need to meet basic GPA and residency requirements in order to qualify. The application process generally takes a few weeks so students should be sure to start early.

5.3. Assessment of Experience

Each internship should have a UHCL faculty member as instructor of record as well as a supervisor on the internship. Both the student and supervisor will need to fill out a survey of the experience in order to assess the student and the internship site. Some programs also require that students complete an oral and/or written report after returning from their internship. If there is a problem at any time during the internship, the student should let the faculty instructor of record know immediately. In addition, if the internship is outside of the United States, it should be registered with the study abroad program.

6. Independent Studies

6.1. Purpose of Independent Studies

Independent studies are often used in emergency situations or whenever teaching a regular course is impractical. UHCL faculty are working to ensure that they teach as few independent study courses as possible although they will teach them as necessary.

6.2. What can and can't be used for independent studies

In some situations, a student may need a course to graduate but that course will not be offered in its regular rotation for several semesters. In that situation, an independent study may be used. Independent studies are not meant to be used for elective courses. They are also not meant to be used for courses which would be offered under normal rotation during the next semester.

6.3. Application Process

All Independent Study courses must be approved by the faculty member teaching them, the Program Chair, Department Chair and Associate Dean of the College. This process starts with filling out an independent study form with the instructor and the instructor providing some justification of the independent study to the Program Chair.

7. Other Issues

7.1. Sexual Misconduct

Sexual Misconduct is defined as unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature. Every university has a specific policy on dealing with sexual misconduct, which should outline the rights and process for every party involved in a sexual misconduct dispute. Graduate students should be aware of this policy because; 1) as students, they could be the victim of sexual misconduct; 2) as teaching assistants, they could be accused of sexual misconduct. Sexual misconduct is not limited to male-female interactions or even interactions between teachers and students. In order to avoid false allegations, it is recommended that teachers should never have closed-door private meetings with students and should not have official course related meeting off-campus. The teachers must be familiar with the University's policies concerning sexual misconduct. https://www.uhcl.edu/policies/title-ix/

7.2. Campus Services outside of the Program

Beyond the academic programs, UHCL offers a wealth of services that are designed specifically to help students become successful. When the student needs help with their writing or to prepare for a job interview, they can contact the Division of Student Affairs at https://www.uhcl.edu/student-affairs/.

Software Engineering Program Specific Items

With a Master of Science in Software Engineering from UHCL, students will be prepared for leadership roles in industries that contribute to the development of application software, software tools, techniques, and methods that center around the development of mobile and cloud-based applications as well as business applications and others. The degree prepares students to be effective and contributing members of software project management and project development teams in both agile and plan based environments. The degree strives to produce responsible critical thinking students who can work well in teams and communicate problem design, requirements, and implementation results using both written and oral communication methods. Studies in this degree address the foundations, methodologies and tools used in the management, planning, design, testing and engineering of software systems. By providing a careful balance between theory and practice, the plan prepares students for central software positions in industry, government and institutions where software engineering has become a key activity.

8. Software Engineering Program Specific Items

8.1. Software Engineering degree plan

The MS in Software Engineering degree plan consists of 30 total credit hours. This includes 18 credit hours of core courses (3 hours each), plus 12 hours of electives chosen. These twelve hours may be taken as part of the thesis or non-thesis options. The non-thesis option requires 9 credit hours of electives and 3 credit hours of capstone project, while the thesis option requires 6 credit hours of electives and 6 credit hours of thesis. Typically the thesis option is chosen by those planning to pursue a PhD in the future. The software engineering degree prepares students for key software positions in industry, government and institutions where software engineering has become a key activity. It prepares students for jobs such as system analyst, requirements engineer, software architect, software project manager or software process designer as well as prepares student to fully contribute to project development and project management within both plan-based and agile based environments.

9. Assigned Foundation courses and waivers

9.1. Purpose of Assigned Foundation Courses

During the admissions process, students are assigned foundation courses if they lack the requirements in their undergraduate background needed to be prepared for all required classes as well as to have the skills expected by employers of graduates holding the MS degree. These are typically undergraduate foundation courses in Computer Science or Software Engineering.

9.2. Foundation course waiver

Foundation courses may be waived only by approval of the SWEN faculty waiver committee. Students should discuss the waiver possibility with their faculty advisor before proceeding to requesting a waiver form. The process requires the student filling out the proper waiver form (Obtained from SCE Academic Advising, submitting it, and supporting documents, back to the SCE Academic Advisor. The SWEN faculty making up the waiver committee make the decision whether to waive a foundation course. A request for waiver maybe submitted based on the grounds of coursework shown on the student's transcript that appears to be the required foundation course or its equivalent, documentation of demonstrated work experience, and additional information such as the syllabi and content coverage of the course being proposed as equivalent to the foundation course. Course waivers may not be submitted without such documentation. Waivers are rarely granted as students transcripts are carefully screened before acceptance and only courses deemed necessary are added as foundation course. The waiver process exists to accommodate documented work experience or possible oversight of transcript courses.

10. Core Courses

10.1. SWEN Core Courses

The SWEN MS degree requires the completion of all core courses. Core courses shall not be waived. Those are mandatory courses that has to be completed by all students. SWEN 5236 and SWEN 5237 must be taken in a student's first semester of enrollment. If a student has an assigned foundation course, it should also be taken in the first semester of enrollment.

Core Courses

SWEN 5236	Engineering Software I Credit Hours: 3
SWEN 5237	Engineering Software II Credit Hours: 3
SWEN 5239	Agile Software Development Credit Hours: 3
SWEN 5233	Software Architecture Credit Hours: 3
SWEN 5432	Software Engineering Life Cycle Credit Hours: 3
SWEN 5534 or SWEN 5135	Reuse and Reengineering or Configuration Management Credit Hours: 3

11. Software Engineering Curriculum

The graduate plan in software engineering leads to the Master of Science (M.S.) degree. The plan prepares students for key software positions in industry, government and institutions where software engineering has become a key activity. It prepares students for jobs such as system analyst, requirements engineer, software architect, software project manager or software process designer as well as prepares student to fully contribute to project development and project management within both plan-based and agile based environments. The M.S. plan requires a total of 30 hours of study. The plan allows for one of four optional specializations:

- Gaming
- Robotics Software
- Software Project Management
- Data Mining

Students accepted in the software engineering program must file a Candidate Plan of Study (CPS) with their assigned faculty adviser within the first semester of study. The CPS, once completed, will list all courses the student must take to fulfill the degree requirements. Specializations in one of the areas listed above may be selected. If a specialization is chosen electives must be chosen from within the specialization. A student is not required to select a specialization. . Students may also participate in internships with appropriate approval. Internship are given only three hours of credit toward the degree and may substitute for a single three-hour elective.

11.1. Credit earned before acceptance

No more than **six** hours of graduate-level software engineering classes may be applied to the SWEN degree if taken without admission into the program. No more than six hours graduate credit may be transferred to the software engineering degree.

11.2. Requirements

Students seeking admission into the degree plan in Software Engineering should hold a bachelor's degree in computer science, computer engineering or other computing or engineering related discipline and have a grade point average (GPA) of 3.0 or greater on the last 60 hours of course work. The GRE is waived if one of the following conditions is met: (i) Applicants with a GPA 3.0 or above; (ii) Applicants with at least one year of post-graduate full-time work experience in a computing field. For those applicants not meeting these waiver requirements a minimum GRE score (verbal + quantitative) of 290 points with a minimum quantitative score of 145, a verbal score of 140 is required. It is also possible for an applicant with significant software development work experience to apply this work experience as an offset to a borderline GPA or to demonstrate competency in computing in the case of a nonrelated degree. If an applicant is applying with the intention of having their work experience considered in lieu of GPA or GRE or a degree outside of the listed related degree areas, then the application materials should include both a letter from the student and a resume summarizing the candidate's professional experience in the area of software

development. Once admitted, the student must file a candidate plan of study (CPS) in the first semester of enrollment.

If applicants have a bachelor's degree from a non-computing related discipline they can be expected to be assigned one or more foundation courses in computing unless the student has relevant computing classes on their transcript or can demonstrate proficiency by virtue of work experience. These courses may include programming in C, programming in Java and a course in data structures.

All applicants must have had courses in programming though data structures or their equivalent. A degree in Computer Science will suffice and no foundation courses will be required of those students holding a BS in Computer Science. For students holding other degrees, one or more courses may be added as foundation courses for those students found to be lacking in one or more of these areas. Foundation courses may be taken at UHCL or any other accredited university Foundation courses assigned will be added to the CPS and must be completed in the first year of enrollment or before. Alternately, students may enroll in the Software Engineering Certificate program to gain foundation knowledge and then apply to the SWEN MS. Certificate courses with grades of B or better will apply to the SWEN MS degree.

11.3. Online Option

The software engineering M.S. Online program can be completed fully online. The degree plan for the M.S. online has the same curriculum requirements, same core and elective requirements and entry requirements as the traditional M.S. program. All core courses are offered fully online. Students needing foundation work for entry may consider choosing the SWEN online certificate as preparation for entry into the SWEN MS program.

12. Degree Requirements

12.1. Software Engineering Core Requirements (18 hours)

SWEN 5236 Engineering Software I Credit Hours: 3
SWEN 5237 Engineering Software II Credit Hours: 3
SWEN 5239 Agile Software Development Credit Hours: 3
SWEN 5233 Software Architecture Credit Hours: 3
SWEN 5432 Software Engineering Life Cycle Credit Hours: 3
SWEN 5534 Reuse and Reengineering Credit or SWEN 5135 Configuration Management: Hours 3
(SWEN 5236 and SWEN 5237 must be taken in the first semester of enrollment. SWEN 5236 is offered in the first 8 week session followed by SWEN 5237 in the second 8 week session every fall and spring semester)

12.2. Software Engineering Capstone Option

Software Engineering Capstone Option (3 hours of Capstone + 9 hours of electives)

SWEN technical elective 4000-6000 level 6-hour

SWEN 6837 Software Engineering Capstone Project Credit Hours: 3

12.3. Additional Information

- Capstone enrollment is limited to students who are in their graduating semester (last 9 hours of study including capstone) and have completed any required foundation courses identified on their CPS.
- Courses taken as electives in SWEN require permission of the faculty adviser before enrolling. Non-SWEN courses at times may be taken as electives but require permission of the faculty adviser and must be in an area of study that is beneficial to the SWEN degree.

12.4. Software Engineering Thesis Option

Software Engineering Thesis Option (6 hours of thesis + 6 hours of electives)

6-hours SWEN technical electives 4000-6000 level,

3-hours SWEN technical electives 5000-6000 level

SWEN 6939 Master's Thesis Research Credit Hours: 6

12.5. Additional Information

- Thesis: Students must form a thesis committee and prepare a thesis proposal in the semester prior to enrollment into thesis.
- An Independent Study course may be used to prepare a thesis proposal. A thesis proposal must be prepared and a thesis committee formed and such proposal must be approved by SWEN program chair before enrollment into thesis. Only three such hours of Independent Study are allowed.
- Contact the CSE academic advising office for instructions.
- Courses taken as electives require permission of the faculty adviser before enrolling.

12.6. Regarding Internship

Internship requires approval from the SWEN internship committee as well as permission of the faculty adviser. SWEN Internships may only be taken in the Summer. Fall and Spring are not eligible. **To apply:** If you meet the below eligibility requirements, gather the below application information and email it to datta@uhcl.edu who will forward the application to the SWEN Internship committee. No Internship enrollment will be allowed without approval through this committee.

 Eligibility Requirements: Students must, at minimum, meet the following criteria to be eligible to apply for consideration for a SWEN Internship:

- Have a cumulative UHCL GPA of 3.8 or above.
- Have a minimum of 18 hours of earned credit earned toward the SWEN degree which corresponds to the students official CPS.
- Have a demonstrated history of well above average performance in all SWEN Classes.
- Transcript from UHCL contains no history of Academic Suspension or Probation.
- Transcript from UHCL contains no repeat classes taken to replace grades of C – or below.
- Transcript from UHCL contains no C's (C-, C or C++) in SWEN MS degree plan courses.

Application information needed: Internships applications in SWEN require an official letter on company letterhead which explicitly designates the following:

- Company and Hiring Manager / Supervisor
- The dates of internship related employment, both start and end date
- (the employment period must be during the summer session and may not overlap with spring or fall session and student may not be enrolled in other courses simultaneously),
- The average number of work hours per week.
- The location of the employment.
- The salary to be paid.
- A description of job duties (job duties must directly reflect software engineering tasks).
- An offer letter must be signed and dated by the hiring manager/supervisor.

13. Specializations

13.1. Software Engineering Specializations

Students interested in a specialization in software engineering such as gaming, robotics, data mining or project management should choose electives from the specializations listed below. Any course within a specialization is an allowable elective.

13.2. Gaming Specializations

- DMST 5131 Game Design and Theory
- DMST 5132 3D Modeling

13.3. Robotic Software Specialization

- CENG 5437 Mobile Robots
- CENG 5435 Robotics and ROS

13.4. Software Project Management Specialization

- SWEN 4320 Introduction to Software Process and Project Management
- SWEN 5230 Software Project Management (only one of 4320 or 5230 may be taken)

13.5. Data Mining Specialization

Pick 2 courses from below:

- SWEN 5139 Data Science and R in Software Engineering
- CSCI 5832 Financial Data Mining
- CSCI 5833 Data Mining: Tools and Techniques

14. Thesis option

14.1. Thesis Option Overview

The Thesis option is a traditional thesis which requires a committee of three faculty and a formal defense. Program policy states that the thesis chair of any SWEN thesis committee

must be a full-time faculty member of the SWEN program. While the thesis option allows students to get more deeply involved in research, there is no guarantee that a student can complete a thesis within a specified amount of time. A thesis should require a minimum of one year of work with a student enrolling in two successive semesters of 6 hours of thesis. Thesis is worth 3 hours of credits but is considered incomplete until it is finished and requires enrollment into each semester until completed.

Students interested in the Thesis option should sign up for SWEN 5939 Independent Study (as an elective) in the year/semester before they expect to enroll in thesis in order to prepare a thesis proposal. The student should discuss this with their faculty advisor and update their CPS to reflect this intention. In the independent study course, they will write their thesis proposal and have it approved by their thesis advisor and committee members before signing up for SWEN 6939 Master's Thesis. Students should consider carefully who they select for their thesis committee chair and the committee chair and members have to agree to serve as part of their thesis committee. Students signed up for the thesis option should provide a progress report to their entire committee every long semester they are enrolled in thesis until they graduate. These progress reports may be used to evaluate whether or not the student is making significant progress or if they should consider switching to the capstone option.

15. Capstone Option Overview

The capstone option requires the completion of SWEN 6837 Software Engineering Capstone Project. Within this course students will be assigned a semester long project within software engineering that requires the student to utilize the knowledge learned in their previous Software Engineering course and apply this knowledge to satisfactory completion.

15.1. Choosing the best option for you

The Software Engineering MS offers both thesis and capstone options for completing the master's degree. The capstone option is a three hour project-based course which involves developing a software application and its surrounding software life cycle documents as defined by the instructor or as defined by an external client who provides requirements from an industry application. Thesis work requires the equivalent of 6 hours of course credit, and is research based, not application based, and as such expected to require a longer time commitment. Whereas capstone can be completed in one semester, thesis should require two long semesters at minimum, though it can take several years. The thesis should result in work that can be extended into Ph.D. research or to exhibit that you have the capability to do research.

16. Software Engineering Certificate

16.1. Requirements

An applicant must hold a bachelor's degree in a computing related field, a course in computer programming or related work experience, and an undergraduate GPA of 3.00 or higher. The GRE is not required for admission to the SWEN Certificate program.

IMPORTANT: Certificate students are limited to 12 credit hours while they are in the certificate program, and must take the 4 classes listed below. Taking classes other than those listed below means the student will not receive the certificate. After 12 hours

earned/enrolled, a registration hold prevents certificate-seekers from further registration. All grades must be at least B-.

After successfully completing the software engineering certificate with all certificate course grades B- or better, a student will meet the foundation requirements for the Software Engineering MS program and the 12 hours completed for the certificate will apply to the SWEN graduate program if accepted. The student must still apply to the SWEN MS program and still exhibit a GPA of 3.0, or better.

16.2. Certificate Required Courses

SWEN 5236   Engineering Software I – Credit Hours: 3

SWEN 5237   Engineering Software II – Credit Hours: 3

SWEN 4320   Introduction to Software Process and Project Management – Credit Hours: 3

SWEN 4346   Software Testing – Credit Hours: 3

17. Other Issues

17.1. First Semester Classes

Students must enroll in SWEN 5236 and SWEN 5237 in their first semester of enrollment. If they need additional courses in their first semester they may choose to also enroll in SWEN 4346 Software Testing, SWEN 4320 Software Process and Project Management, SWEN 5135 Configuration Management, or SWEN 5432 Software Engineering Life Cycle. If a student has been assigned foundation courses as part of their acceptance into SWEN students must enroll in their foundation courses in their first semester as these course are foundational and meant to be completed before proceeding past Engineering software I and Engineering software II. Foundation courses may be taken from any accredited university or at UHCL. Students who have questions regarding this should see their assigned faculty advisor. A student's admission letter designates the faculty advisor.

17.2. When should I register for classes?

Students should register for classes as soon as possible. While most students think they have to pay as soon as they register, students have a time period, which extends a few days after a semester starts, until the university official "census date" before a student is officially dropped for lack of payment. This tends to be about 10-12 days into the semester and is the real deadline for making a tuition payment. This date should be indicated on the UHCL website or the official UHCL academic calendar also found on the UHCL website.

17.3. Do I need to take a Data Structure Course assigned as a foundation?

If your acceptance letter lists Data Structures as a foundation/prerequisite, you will need to take that course. It will not be waived unless you have a course listed on your transcript that is labeled specifically as "Data Structures". Courses named "Programming with C and Data Structures" or other such combination courses will not suffice. A dedicated course in Data Structures from an accredited university is required. If you have not taken this it will be assigned as a foundation course and added to your degree requirements upon acceptance. You may take the course at UHCL or any other accredited university. After completing the

course you need to submit your transcript (if it is not a UHCL course) to academic advising to include in your academic record.

17.4. Why is Data Structures listed as a foundation course in my acceptance letter?

If a student's transcript does not show evidence of successful completion of Data Structures, it will be added to your degree requirements in your acceptance letter.

17.5. Where should I take the Data Structures Course?

Students may choose to take this course from UHCL or any accredited university or college. Online or face to face courses are each acceptable.

17.6. How can I become a Teaching Assistant (TA)?

Students must make application with the department secretary if they are interested in becoming a TA. TA's are selected either by the program chair or faculty of the course the TA position is available for. Students in their second or later semesters are typically selected over students in their first semester as students need to have taken the course before being selected as a TA for that course.

17.7. Full-time or Part-time

Students are free to attend part time or full-time. Full time students are those enrolled in 9 hours or more, while enrollment in less than 9 hours reflects part time. The Software Engineering program has both part time and full time students in most classes. Many part time students work full or part time while also enrolling in classes. Software Engineering's 8 week class offerings make it particularly beneficial, time management wise, for working students to concentrate on one course at a time and still complete at least two courses in a semester. When deciding to pursue graduate education full-time or part-time, a student must weigh several items: time to complete the degree, economic situation, chance of success, and career goals.

17.8. 8-week course format

All of the Software Engineering graduate courses use an 8-week course format with the exception of the 16 week capstone course and thesis. Each long semester has two 8-week sessions. The time required to be successful in a graduate-level engineering course depends upon a student's level of preparation, their ability to focus on the course, and their level of academic maturity,   A typical graduate-level course at SWEN program requires about 10-15 hours per week.

17.9. Time Considerations

While full-time dedicated and prepared students typically graduate in 1.5 to 2 years, part-time students can take over 3 years.   A full-time student should expect to spend about 30-45 hours per week on coursework. Online courses will require the same time commitment. Although there is a significant amount of time required for these courses, most students have the freedom to choose when to devote time to their studies. Because of this, graduate school requires excellent time-management skills and students are responsible for monitoring their progress toward a degree.

Thesis work, whether for a Bachelors, Masters or Ph.D. typically requires much more time than courses with a defined beginning and end within a single semester, and thus more planning and time management is needed. When considering a thesis, consider that it can take up to two to three times the time and effort of the project option. If you cannot devote that much time, you may want to consider the project option.

17.10. Fully Online Option vs. Traditional Option

The SWEN program is offered as both a traditional program and as an online program. When students make application to the program they make application to one or the other. In the students' admission letter, it is clearly stated whether the student belongs to the fully online (online major) or traditional program. The fully online program requires the same rigor and effort as the traditional program. If you are admitted into the fully online program, you will need to register for those class sections designated as 100% online. (See below).

17.11. There are two online sections of the same course, which do you register for?

SWEN online courses are typically offered as two sections. One online section has the 'location' as **UH Clear Lake** and this section is for registration by traditional students who did not apply to SWEN's 100% Online program, whereas the other online section has the 'location' as **UHCL Online** and is for those students who applied and were accepted as fully online students. These two sections are for registration purposes only. The two sections will typically be combined for instruction purposes and both taught by the same instructor. Both are online sections of the same course with the same course material. It can be confusing to students who are designated as 100% online students to find they can only register into classes marked at UHCL online only. If you are a 100% online student then you must choose the appropriate section to enroll or the system will not allow it. If there is a partially online or face to face class you are interested in taking that has no UHCL Online section and you are a 100% online student please contact the department secretary or program chair and they will work with you in how to proceed.

17.12. Controlled Classes

There may also be courses listed in the spring, summer or fall schedule that are designated as controlled and these courses require permission from the program chair to enroll. The Capstone Project is typically controlled as capstone must be taken in the graduation semester. Students must email the department secretary to the placed on the approval list for any controlled courses. Students are sent permission codes that allow then to register in a controlled course sometime in the month previous to class starting. Students should not expect to receive these codes earlier as all requests are collected and grades from the previous semester must be available for review before these decisions are made. Transcripts will be reviewed for this approval.

17.13. How to Switch between Traditional and Online Options or Change to the Newest Catalog

Students can change their program option or change to most recent catalog year. For example, if you want to change from the online option to the traditional option or if you want to change to the latest catalog year, the student should contact an academic advisor at the CSE's Academic Advising office to initiate this process. Note that an academic advisor is a

school staff member, it is not a faculty advisor. It is important to understand your faculty advisors cannot initiate this switching process. Michelle Gutierrez GuiterrezM@uhcl.edu is the current academic advisor contact for all SWEN students.

18. **Student Groups**

There are several student groups students may join. Two such groups are the R ladies Club or Institute of Electrical and Electronics Engineers (IEEE) Students chapter. The R Ladies Club is a local UHCL group which currently has no national affiliation. The IEEE chapter is a local student with national affiliation with IEEE. Either group can provide a social outlet as well as valuable career advice.

19. **UHCL Computing account**

Upon enrollment at UHCL, you will receive an academic computing account through University Computing and Telecommunications (UCT). This is the standard procedure for new students, faculty and staff employees. This account is your official UHCL account and the email account you will receive will be used in official UHCL communications. You will need to be sure and check your UHCL mail account regularly. You will use this account to login to your courses in Blackboard as well email and other platforms the university may provide.