Computer Science

MCS Graduate Handbook

2018 - 2019

MANUAL OF THE MASTER OF COMPUTER SCIENCE DEGREE AND CONCENTRATIONS

ARIZONA STATE UNIVERSITY

2018 - 2019

CSE graduate degrees please contact:

Office of Graduate Programs
Of Computer Science
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CSE on the web: http://cidse.engineering.asu.edu/forstudent/graduate/computer-science/
E-mail address: cidse.advising@asu.edu

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I. Introduction to the Computer Science Program

The Master of Computer Science (MCS) is a non-thesis degree is available for ground and online campuses. The program is ideal for students with undergraduate education in computer science or related studies. This degree features advanced course work and provides numerous opportunities for interdisciplinary study. Ground campus students can concentrate their studies in the following areas: Big Data Systems (BDS) and Cyber Security (CS).

II. Objective of the handbook

The purpose of this handbook is to provide guidance and information related to admission, degree requirements, and general policies and procedures. Please note that in some cases you will find differences between the Graduate College policies and procedures and the computer science program requirements. In these cases, CSE has established higher standards. Students must satisfy both sets of requirements. Please note that policies and procedures are occasionally amended to improve the program. Changes will be communicated to students through e-mail, which is our primary form of communication. We will also post any updates to this handbook on our website cidse.engineering.asu.edu.

III. Student responsibility

All students are expected to become familiar with university and program policies and procedures and abide by the terms set forth. Information is available online at the following websites:

- Graduate College – http://graduate.asu.edu
- Graduate College policies and procedures https://graduate.asu.edu/policies-procedures
- The Computer Science Program – http://cidse.engineering.asu.edu/forstudent/graduate/computer-science/
- The International Students and Scholars Center – https://issc.asu.edu/, if applicable.
- The Ira A. Fulton Schools of Engineering – http://engineering.asu.edu

IV. Faculty responsibility

The members of the faculty of computer science have diverse backgrounds and knowledge. They are available to assist you in your plan of study and your educational and career goals. We encourage you to take the opportunity to make individual appointments with faculty members with whom you have common interests. Please refer to the list of the faculty names, areas of expertise, and research interest on CIDSE Website.

V. Admission and eligibility to the MCS degree programs

The Master of Computer Science (MCS) degree requires a background in engineering, math, sciences, or closely related fields. However, in some cases students with non-traditional educational backgrounds will be considered for admission. These students may be required to take foundational courses to better prepare for the graduate coursework. A student is encouraged to contact a graduate advisor in the School of Computing, Informatics, and Decision Systems Engineering Advising Center to obtain advice on their educational pursuits.

Eligibility - Prior to applying to the MCS program, students are required to have completed three semesters or 12 credit hours of calculus, including multivariate calculus.

Application - All students are required to submit an application and all required supporting materials with the Office of Graduate Admission and pay the required fee in order to have their application properly processed.

Application deadlines –
To receive full consideration, we ask that you have all the required documents submitted by the deadline.

	Fall	Spring	Summer
On-Campus	December 1	August 1	N/A
Online	July 20	November 15th	April 15

GRE scores –. All ground (Tempe campus) students, except ASU undergraduate CSE, are required to submit official general Graduate Record Examination (GRE) scores directly to the Office of Graduate Admissions. The average GRE scores for students admitted into the MCS program have been 153 or 63 percentile verbal, 163 or 88 percentile quantitative, and 4.0 analytical. However, admission decisions are made on the basis of the entire application packet. We do not require specific subject GRE scores. The ASU institution code is 4007. If department code is required use 000 for GRE.

A GRE is not required for online students in all the MCS online programs.

At any time a student wants to switch to the ground program, he/she will be required to meet the ground admission requirements.

English Proficiency - The University requires all international applicants from a country whose native language is not English to provide the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IETLS) scores. CSE uses 575 (paper-based) or 90 (internet-based) TOEFL or 7 for IETLS or Pearson 65 as minimum expectations for admission. Note that your application will not be processed until the university receives official TOEFL scores, which are valid two years from the start date of the degree program. There are some exceptions for students who have been living in the United States and would like to have the TOEFL waived. They should consult the Office of Graduate Admissions. Please address all TOEFL questions to the Office of Graduate Admission. The ASU institution code is 4007. If department code is required, use 99 for TOEFL.

Personal statement - The application must include a personal statement. The statement should explain professional goals and reasons for desiring to enroll in the MCS program.

Letters of recommendation –Three letters of recommendation **are required for Tempe campus** students, of which at least one should come from former faculty. There is no standard form for letters of recommendation. Our current application process allows students to submit the letter of recommendations electronically by indicating the names and the e-mails of the recommender. In turn, the Office of Graduate Admission sends an e-mail to the recommender alerting him or her to go online and submit a recommendation. We encourage letters from people who know you well, such as teachers, professional associates and supervisors. Ask people who can comment on your academic, emotional, intellectual and professional development.

Letters of recommendation **is not required** and is optional **for MCS online students**. For those students who want to strengthen their application packet, it is recommended that one of the letters of recommendation come from a former faculty.

GPA requirement - To be considered for the MCS program, we require a minimum cumulative GPA of 3.25 in the last 60 credit hours of the undergraduate degree.

Application evaluation - Several factors are taken into consideration when evaluating a student's application: the student's cumulative GPA, major, institution, GRE scores (Tempe campus), personal statement, letters of recommendation (Tempe and for online if submitted),and performance in individual courses.

Deficiencies - Depending on prior academic preparation and accomplishments of an applicant, deficiency courses may be specified to ensure adequate background preparation.

Below is a list of pre-requisites along with the associated ASU course numbers:

- CSE 230 - Computer Organization and Assembly Language Programming
- CSE 310 - Data Structures and Algorithms
- CSE 330 - Operating Systems
- CSE 340 - Principles of Programming Languages
- CSE 355 - Introduction to Theoretical Computer Science
- CSE 360 - Introduction to Software Engineering

Deficiency coursework completed with a grade of "C" or better at the undergraduate level will satisfy the requirements. A grade of "B" or better is required for all assigned deficiency coursework at the post-baccalaureate level.

Waiver Process: Students wishing to have their course syllabi examined as evidence that deficiencies have been satisfied must submit a petition form. Submit an e-mail to cidse.advising@asu.edu with the Petition for Reevaluation of Deficiency Course form and supporting documents (such as syllabus, catalog description, or university transcripts) to prove that you have met the requirements. Be advised that the documents you uploaded during the admission application have been evaluated. Submit only **new** information when requesting a reevaluation of assigned deficiencies. Once the petition has been reviewed it is final. There will be no future petition or consideration request. If after evaluation the petition is not approved, the student may choose to take the deficiency test-out examination.

Deficiency test-out exam (on-campus students) - On the day before Welcome Day in fall and spring semesters, a classroom will be set aside to allow students entering with deficiencies (listed in the admissions letter) to take a test to establish whether they possess basic knowledge of the course sufficient to have an assigned deficiency waived. Students may take up to three test-out exams. **This scheduled testing period is the only opportunity for deficiency test-outs. No other arrangements will be made for students to test-out of assigned deficiencies.**

Deficiency test-out exam (online students) – As of Spring 2019 there will be an ETS Computer Science Major Field Test available to test out of deficiency requirements.

Notice of Admission - CSE submits its recommendation of admission to the Office of Graduate Admission, who will then send the final notice of admission to the applicant in writing via email. You may check your application status on My ASU (my.asu.edu).

Pre-admission credits and Transfer Credit
A student can transfer a maximum of six (6) credit hours of graduate coursework from another accredited institution, as specified in the ASU Graduate Policies and Procedures. A student must prove the graduate-level credit hours with grades of "B" or better were not used towards a previous degree, per Graduate College policy. Pre-admission credits must have been taken within three years of admission to the ASU degree program to be accepted. A course with a grade of "Pass", "Credit", or "Satisfactory" is not acceptable for transfer. A student who wishes to transfer credits from another institution should contact the graduate advisor in the CIDSE Advising Center to initiate the transfer credit process.

Transfer between programs
A student who would like to switch from a Ph.D. to a Master's or switch Master's degree programs from MCS to MS or vice versa on the Tempe campus should follow the Computer Science Degree Change process. With approval, twelve credit hours are eligible to transfer into the Master's program.

Online students changing from online campus to a ground campus program will be required to submit a new application for admission. Students changing from the MCS on ground to MCS Online should consult with Academic Advisor before submitting a request.

Students who want to change from a Master's to a Ph.D. in Computer Science must submit a new application with ASU Graduate College. Admission to the Ph.D. program can be denied. If admitted, the student is allowed to transfer only 12 credits from the original uncompleted program to the new program.

VI. MCS Degree Requirements
Degree requirements for the MCS include a minimum of 30 semester hours beyond deficiency courses.

The MCS is comprised of three major milestones, which all students are required to complete successfully prior to graduation:

a) Completion of coursework,
b) Filing an approved plan of study
c) Successful completing a project portfolio

An accelerated computer science degree (4+1) program for ASU undergraduate computer science and computer systems engineering students is available. There are also concentrations in Information Assurance and Big Data Systems for ground campus students only. The

requirements for the different programs are below. The accelerated program allows a maximum of nine credit hours to be shared between the undergraduate and the graduate programs.

a. Formulation of the Plan of Study
A student needs to submit a plan of study (iPOS) online through MyASU before the end of their first semester of attendance. The final iPOS is subject to approval by the supervisory committee and by the Graduate Program Chair. After approval at the School level, the final iPOS is forwarded to the Graduate College for approval.

The iPOS must contain a minimum of 30 semester hours of approved graduate-level work. At least 24 of these hours must be CSE-5XX credits at ASU. All 30 semester hours must be from formal course work (including CSE 591 and 598). CSE 590 will not be allowed as part of the MCS program.

All MCS students must take and pass at least three credit hours in each of the three core areas: Foundations, Systems and Applications and earn a grade of B or better in all area courses. All MCS students must complete a project portfolio from three courses in which the student received a "B" (3.00) grade or higher.

Approved 400 and 4XX/5XX level: A maximum of 6 credit hours of 400-level coursework is allowed. A maximum of 12 hours of a combination of 400-level and cross-listed courses (4XX/5XX) is allowed. If a 400-level course is cross-listed with a 500-level course, students will be required to enroll in the 500-level.

MCS in Computer Science
Program requires the following: 30 credit hours and a portfolio.

Required Core Courses: 9 credit hours
- Foundations (3)
- Systems (3)
- Applications (3)

Elective Courses: 21 credit hours

Students choose 21 credit hours of other elective course work approved by their academic advisor. Coursework selected as part of the area core may not be used as elective coursework on the same plan of study.

Culminating Experience: Project Portfolio, 0 credit hours

MCS in Computer Science (Cyber Security) (*currently only available on-campus*)
Program requires the following: 30 credit hours and a portfolio.

Required Core Courses: 9 credit hours
- Foundations (3)

- Systems (3)
- Applications (3)

Required Concentration Courses: 15 credit hours of coursework in Cyber Security.
12 credit hours from:

- CSE 539 Applied Cryptography (3)
- CSE 543 Information Assurance and Security (3)
- CSE 545 Software Security (3)
- CSE 548 Advanced Computer Network Security (3)

And 3 credit hours from the following

- CSE 466 Computer Systems Security (3)
- CSE 467 Data and Information Security (3)
- CSE 469 Computer and Network Forensics (3)
- CSE 531 Distributed and Multiprocessor Operating Systems (3)
- CSE 534 Advanced Computer Networks (3)
- CSE 565 Software Verification, Validation, and Testing (3)

*Electives: 6**

*If a student selects any of the concentration courses that are also listed as a core area course, additional coursework may be required to complete the degree. Students should check with their academic advisor to ensure that the total credit hours of their plan of study are equal to 30.

Culminating Experience: Project Portfolio, 0 credit hours

MCS in Computer Science (Big Data Systems Concentration) (*currently only available on-campus*)
Program requires the following: 30 credit hours and a portfolio.

Required Core Courses: 9 credit hours

- Foundations (3)
- Systems (3)
- Applications (3)
-

Required Concentration Courses: Following 9 credit hours

- CSE 510 Database Management System Implementation (3)
- CSE 512 Distributed Database Systems (3)
- CSE 572 Data Mining (3) **or** IEE 520 Statistical Learning for Data Mining (3)

*Electives: 6 credit hours from the following**

- CSE 515 Multimedia and Web Databases (3)
- CSE 546 Cloud Computing (3)
- CSE 573 Semantic Web Mining (3)
- CSE 575 Statistical Machine Learning (3)
- CSE 578 Data Visualization (3)

*Electives: 6 **

*Additional elective coursework may be required. If a student selects any of the concentration courses that are also listed as a core area course, additional coursework may be required to complete the degree. Students should check with their academic advisor to ensure that the total credit hours of their plan of study are equal to 30.

Culminating Experience: Project Portfolio, 0 credit hours

Project Portfolio
All students admitted to the MCS degree program must complete a project portfolio. The portfolio is a compilation of three completed projects that were finished in three MCS program courses; students must write a portfolio report that includes the highlights of the three projects. All 500-level regular courses are eligible for portfolio as long as the student can get attestation from the instructor that they have done at least 30% of project work for the course in combination with an in-class project and additional out-of-class (self-study) work. The student must have received a final grade of "B" or better in the course to use it for their portfolio.

VII. General Information, Policies and Procedures

a. Financial assistance and/or fellowships
There are limited funds for MS thesis and PhD. students. We encourage students to pursue assistantships outside of CSE, not limiting your search to CSE. Information regarding other sources of financial assistance are available on the following websites:

- Financial aid: https://students.asu.edu/financialaid
- Graduate College: https://graduate.asu.edu/pay-for-college

b. Fulton: https://graduate.engineering.asu.edu/graduate-fellowships/ **Continuous Enrollment**

Once admitted to a graduate degree program or graduate certificate program, students must be registered for a minimum of one credit hour during all phases of their Graduate College, including the term in which they graduate. This includes periods when students are engaged in research, working on or defending theses, or in any other way utilizing university resources, facilities, or faculty time.

Registration for every fall semester and spring semester is required. Summer registration is required for students taking examinations, completing culminating experiences, defending theses, or graduating from the degree program.

To maintain continuous enrollment the credit hour(s) must:

- Appear on the student's Plan of Study, OR
- Continuing registration (595, 795), OR
- Be a graduate-level course

Grades of "W" and/or "X" are not considered valid registration for continuous enrollment purposes. "W" grades are received when students officially withdraw from a course after the

add/drop period. "X" grades are received for audit courses. Additionally, students completing work for a course in which they received a grade of "I" must maintain continuous enrollment as defined previously. Graduate students have one year to complete work for an incomplete grade; if the work is not completed and the grade changed within one year, the "I" grade becomes permanent. Additional information regarding incomplete grades can be found at http://asu.edu/aad/manuals/ssm/ssm203-09.html.

c. Leave of Absence Policies

Graduate students planning to discontinue registration for a semester or more must submit a Request to Maintain Continuous Enrollment form. This request must be submitted and approved before the anticipated semester of non-registration. Students may request to maintain continuous enrollment without course registration for a maximum of two semesters during their entire program.

Having an approved Request to Maintain Continuous Enrollment by the Graduate College will enable students to re-enter their program without re-applying to the university. Students who do not register for a fall or spring semester without an approved request are considered withdrawn from the university under the assumption that they have decided to discontinue their program. Students removed for this reason may re-apply for admission to resume their degree program; the application will be considered along with all other new applications to the degree program.

A student with a Graduate College-approved Request to Maintain Continuous Enrollment is not required to pay tuition and/or fees, but in turn is not permitted to place any demands on university faculty or use any university resources. These resources include university libraries, laboratories, recreation facilities, or faculty time.

d. Maximum Time Limit

Master's students must complete all program requirements within a six-year period. The six-year period starts with the semester and year of admission to the Master's program. Graduate courses taken prior to admission that are included on the Plan of Study must have been completed within three years of the semester and year of admission to the program.

Any exceptions must be approved by the supervisory committee and the Graduate College Dean. The Graduate College may withdraw students who are unable to complete all degree requirements and graduate within the allowed maximum time limits.

e. Registration requirements for research assistants (RA) and teaching assistants (TA)

Students awarded an assistantship within the **Ira A. Fulton School of Engineering are required to be registered for 12 credit hours**. Audit credit hours do not count toward the 12 credit hours.

Students who obtain an assistantship outside the Ira A. Fulton School of Engineering are required to be enrolled a minimum of 6 credit hours. Audit credit does not count towards the 6 credit hours. Enrollment in 1 credit continuing registration (CSE 595) does count toward the 6-hour requirement.

TAs and RAs are treated as residents for tuition purposes. To be eligible for tuition remission, TAs and RAs must be employed a minimum of 10 hours per week (25 percent Full-Time Equivalency {FTE}). TAs/RAs working 10-19 hours per week (25-49 percent FTE) receive a 50 percent remission of tuition for the semester or summer session of their employment. TAs/RAs working 20 hours per week (50 percent FTE) do not pay tuition during the semester or summer session of their employment. In addition, the university pays the individual health insurance premium for those TAs and RAs working 20 hours per week (50 percent FTE). The TA/RA offer does not cover additional fees beyond tuition.

f. Policy for Maintaining Academic Satisfactory Progress

Each semester, the computer science program reviews students' files for satisfactory progress toward completion of the degree. All students who fall in one of the four categories are placed on probation or withdrawn from the program:

1) Satisfactory progress;
2) Academic probation;
3) Progress probation;
4) Withdrawal from the CSE program.

1. **Satisfactory progress** means that a student does not have any academic or progress probationary issues. In addition to the probationary rules, satisfactory progress includes communication each semester with the student's committee chair regarding his/her progress.

2. **Academic Probation**

A student who has been admitted to a graduate degree program in CIDSE with either regular or provisional admission status, must maintain a semester grade point average (GPA) of 3.0:

1. in all work taken for graduate credit (courses numbered 500 or higher)
2. in the coursework on the student's approved plan of study
3. in all coursework taken at ASU (overall GPA) post-baccalaureate

A student will be placed on academic probation if one or more of the student's GPAs listed above falls below 3.0. Students will be notified by mail and e-mail when placed on academic probation.

A student will earn academic good standing by obtaining a 3.0 or better in the GPAs listed above in the next nine credit hours or the next two semesters (Fall & Spring), whichever comes first*

Students will also receive an academic probation notice/letter if one of these pertains to your academics:

- Received a "C", "D", or "E" in a required deficiency course.
- Deficiency GPA below 3.0.

3. **Progress probation** pertains to issues dealing with making progress toward a degree. The following are notices/letters you will receive if one of these pertains to your academics:

- Lack of progress toward completing deficiencies as listed on your admission letter.
- Failure to complete the project portfolio.

4. **Withdrawal from the CSE program**:
An MCS student may be removed from program for any of the reasons listed below:

1. Cumulative GPA is less than 3.0 for two consecutive semesters (the student with such a cumulative GPA will be put on probation after the first semester).
2. The Cumulative GPA is less than 3.0 in the course of two consecutive semesters (the student is put on probation with such GPA after the first semester).
3. Failure to complete deficiencies within the time allowed, as determined by the admissions committee.
4. Failure to meet a requirement specified for the MCS degree, including not making satisfactory progress toward the completion of the degree.

A student is recommended for withdrawal from the CSE program if she or he fails to meet the probationary standards placed upon in the semester mentioned in the probationary letter. The student will receive a letter from the computer science program explaining the reasons for the withdrawal. The student will have 5 calendar days from the date of the letter to appeal the decision. The CSE Graduate Program Committee (GPC) will review the case and will make the necessary recommendation. The graduate program chair, on behalf of the GPC, will provide a written explanation of the outcome. If the outcome is favorable, the student will have to meet all the outlined requirements at the end of the specified period. The student will be required to sign an agreement acknowledging the recommendations and the consequences if the agreements are not met. If the GPC recommends that the appeal is not granted in favor of the student, the graduate program chair, on behalf of the GPC, will recommend to the Dean's Office to withdraw the student from the CSE program. The student will then have the opportunity to appeal to the Ira A. Fulton Schools Standards Committee, which reviews the student's case and makes the final ruling to Associate Dean and the CSE program. If the appeal is not granted in favor of the student, the Dean's Office of Academic and Student Affairs will recommend to the Graduate College to withdraw the student from the CSE program. Please refer the Graduate College on policies and procedures or contact the graduate advisor in the CIDSE Advising Center.

g. Filing for Graduation

During the final semester, a student must file an application for graduation with the Graduation Office of the Registrar on My ASU. The student's approved final plan of study (iPOS) must be on file with Graduate College before the student can apply for graduation.

h. Academic Integrity

The highest standards of academic integrity are expected of all graduate students, both in the academic coursework and in their related research activities. The failure of any graduate student to meet these standards may result in serious consequences, including suspension or expulsion from the university and/or other sanctions as specified in the academic integrity policies of individual schools, as well as the university.

Violations of academic integrity include, but are not limited to: cheating, fabrication, tampering, plagiarism, or aiding and/or facilitating such activities. At the graduate level, it is expected that students are familiar with these issues and each student must take personal responsibility in their work. In addition, graduate students are expected to follow university guidelines related to the Student Code of Conduct. University policies related to academic integrity and code of conduct are available in the Office of the University Provost, or at https://provost.asu.edu/academic-integrity.

i. **CSE 584 Internship** Curricular Practical Training (CPT) is an academic experience usually obtained at off-campus work settings, allowing the student to apply knowledge and skills gained in various classes. It is intended as a unique, hands-on learning experience to provide students with a number of valuable skills that they can use upon graduation from their graduate degree programs. Accordingly, it is not available to full-time or part-time workers regularly employed by the company where the internship is proposed.

   The CPT is available to both domestic and international students. However, F1 and J1 visa international students must work with the International Students and Scholars Center (ISSC) and submit additional documentation to obtain work authorization. Furthermore, international students must include the CPT course CSE 584 (1 credit hour) as an integral part of their program of study, reflected by their approved iPOS.

   Addition of the CPT credit(s) should be done at the initial submission of the student's iPOS. Later additions of CPT will not be allowed under any circumstance. The Internship course cannot be included on an approved iPOS once all required coursework has been completed.

   The CSE Program Chair will determine the need for a CPT internship in such cases in consultation with the graduate academic advisor. Note that approval of an iPOS with the CSE 584 credit confirms that the internship is an integral part of the degree requirements as planned by the student. Additional internship that is not part of the 30 credit hours can be removed from the iPOS. Note: Only internship courses can be removed from the iPOS. Courses that are approved as part of the overall degree program in the iPOS can only be substituted with another approved coursework.

   In order to be eligible for internship, a student must be in **good academic standing (cumulative, graduate, and iPOS GPA of 3.0 or above) and not have an academic integrity violation** in a course for two full semesters (summer semesters not included) from the initial reporting of the incident. For example, a sanctioned academic integrity violation initially reported on April 15, 2018 will make the student ineligible for this approval until the end of spring 2019 semester.

International students need to be aware of immigration policies and regulations, which may jeopardize their academic status. Hence, it is strongly recommended for international students to consult with the International Students and Scholars Center (ISSC).

All students (domestic and international) may take part in an out-of-state internship in the summer session. The eligibility requirements for CPT internships remain the same as mentioned.

During the regular fall and spring semesters, international graduate students in F-1 status must register for a minimum of nine (9) credit hours to maintain full-time status and be enrolled in a minimum six (6) credit hours of in-person, on-campus coursework at the ASU Tempe campus. A maximum of three (3) credit hours of online courses is permitted. The CSE 580 practicum course will not count as satisfying the student's "physical presence" at ASU. Students will not be able to take part in internships outside the Phoenix metropolitan area. In some cases students may be approved to do an internship in Tucson or other nearby locations to Phoenix, as long as the student is able to prove they can physically attend their courses on campus.

Required documents and forms for the internship proposal must be submitted to the CIDSE Advising Office at least four weeks prior to the internship start date. Students will not be able to request late-add registration of the CSE 584 Internship credit to their class schedule after the add/drop deadline of each semester.

An approved proposal is required before commencing the internship. The request will include a statement from the employer that indicates they understand that the work is to satisfy a degree requirement. A sample letter and other required forms are available on the CIDSE CPT website. Students must receive approval from the graduate program director before registering for CSE 584. In order register for the CSE 584 - Internship, a student must have a **cumulative, graduate, and iPOS GPA of 3.0 or above** and not have an academic integrity violation in a course for two full semesters (summer sessions not included) from the initial reporting of the incident. A final plan of study must be filed with the Graduate College showing the internship credit before registering for CSE 584. All application materials for an internship must be completed by the last day of regular registration for any semester. The student must take classes appearing on the plan of study the semester following the internship.

Renege: (verb) to fail to carry out a promise or commitment
It is unethical for students to continue to seek or consider other employment opportunities once an offer has been accepted. CIDSE expects students to honor an acceptance and withdraw from all employment seeking activities. Students who accept an offer from an organization and later renege/decline the offer will be prohibited from further requesting future CPT pending a meeting with the Assistant Director.

A five-page final report is required at the end of the internship before a grade and credit is given. The final report must be submitted to the reporting supervisor for comments and then

to the faculty advisor for grade assignment. Refer to the CIDSE CPT website for guidelines to prepare the final report.

j. Engineering Student Organizations

There are dozens of engineering student organizations and teams ranging from honors and professional associations to groups creating underwater robots, concrete canoes and launching rockets. Student organizations are excellent opportunities to learn about career possibilities as many of the student groups operate in conjunction with industry professional societies … get involved today! Please visit http://studentorgs.engineering.asu.edu/ for a list of Engineering Student Organization.

k. Instructional Concerns and Course-Related Complaints

Being part of a large university creates opportunities to learn from a diverse instructor population with different teaching styles and modalities for delivering course content. Courses are offered by a diverse set of faculty, including those who are research intensive, those whose primary responsibility is teaching, and part-time faculty who are working in the field. Based on enrollment or modality of offering, faculty may also be supported by graduate student teaching assistants and graders. This diverse higher education delivery platform may differ significantly from the high school experience, and while it provides opportunity to expand the student's ability to learn and develop problem solving skills, concerns and conflicts with requirements and instructors may occasionally arise. CIDSE students with instructional concerns should review and adhere to the following guidelines for attempting to resolve their issues. First and foremost, keep in mind that the faculty and advising staff are experienced, dedicated educators that are here to help you achieve your educational goals but at the same time, as an engineering and computer science program, they have a responsibility to ensure standards are maintained and student outcomes are achieved prior to graduation. The university culture recognizes the value of diversity in multiple dimensions as well as the presumption of expertise and academic freedom of the faculty.

Communicate with your Instructor

If you have a difference of opinion with your instructor or teaching assistant (TA), or have concerns about technical or administrative aspects of the course, visit the instructor or TA during office hours or contact them via email (if you cannot visit them during the office hours). Express your concerns clearly and respectfully and ask for help. Be sure to provide succinct information about what you are having trouble understanding in the course or your concern. Instructors and TAs are here to help. Please remember that you are responsible for prerequisite knowledge/skills required for a course and regularly studying the material taught in the course. The teaching staff may not be able to help you with your problem if you lack the prerequisite knowledge/skills or have not been keeping up with the course material. As a guideline, you should be spending three hours studying every week for each hour of course credit. Thus you should schedule 8-10 hours of time each week to devote to each 3-credit course. In addition, make sure to resolve the issues as soon as they occur and maintain all documentation. For example, if the assignment instructions are not clear, get the clarification on the day the assignment is assigned and do not wait until the deadline of the assignment.

If, after communicating with your instructor or TA, you are still having problems in the course, connect with your academic advisor to understand your options moving forward.

Connect with your Graduate Program Chair

If you are unable to resolve the concern after initial contact with the instructor or the TA, and you have met with your academic advisor, you should then connect with the graduate program chair for your degree (or the department offering the course). The graduate program chair will confer with the instructor and/or TA to better understand the concern and try to resolve the problem. Please note that before meeting with the graduate program chair you should have made a reasonable effort to meet with the course instructor (not just the TA) and get the issue resolved. When contacting the graduate program chair, provide all the relevant details such as the course syllabus, assignment handout, email exchange with the instructor, etc. so that the graduate program chair can promptly act on your concerns. Please be brief and precise in the description of your concerns. In some cases, the graduate program chair would like to meet you. When coming for the meeting please bring along all the relevant documents.

If the instructional concern is not resolved with the graduate program chair or the department offering the course, contact the Associate Dean of Academic Affairs Office for the college offering the course for assistance.

Remain Focused

When faced with instructional concerns, it is important to remain focused on the rest of the course while addressing specific areas that are under review. Be sure to stay connected with your academic advisor if there are any changes in your situation.

NOTE:

- Misrepresentation of facts or disrespectful behavior when confronting your instructor or teaching assistant is considered an academic integrity violation.
- Maintain all documentations.
- Act proactively and promptly.

In Summary, Guidelines for Avoiding Problems

- Be sure you have the necessary prerequisite knowledge before starting a course;
- Attend class and online exercises regularly;
- Devote time each week to studying to avoid falling behind;
- Contact the TA (if assigned) or instructor during office hours at first sign of trouble and come prepared to ask precise questions and to explain your difficulty
- Accept the fact that you grow intellectually and professionally by being challenged and learning to deal with diverse expectations and environments.

Process for Resolving Conflicts in Grading, Course Expectations, etc.

- Contact the TA (if available) or instructor to explain your concern and seek resolution;

- If the TA/instructor has attempted to assist you but you are still having academic difficulty that is causing personal stress or hindering your academic success, see your Academic Advisor;
- If the TA/instructor is not responsive or does not provide a legitimate response/accommodation, then contact your graduate program chair.
- If you still feel there is a legal, ethical, or procedural violation that is victimizing you, contact the Office of the Associate Dean of Engineering for Academic Affairs.
- Circumventing this process will be considered a violation of professional ethics and protocol.

List of Approved 500-level Area Courses

Highlighted courses are planned to be offered online through ASU Online for MCS Online Students ONLY

Course Prefix	Course Title	Foundations	Systems	Applications
CSE 509	Digital Video Processing			X
CSE 510	Database Management System Implementation			X
CSE 511	Data Processing at Scale			X
CSE 512	Distributed Database Systems			X
CSE 515	Multimedia and Web Databases			X
CSE 520	Computer Architecture II		X	
CSE 522	Real-Time Embedded Systems		X	
CSE 530	Embedded Operating Systems Internals		X	
CSE 531	Distributed and Multiprocessor Operating Systems		X	
CSE 534	Advanced Computer Networks		X	
CSE 535	Mobile Computing		X	
CSE 536	Advanced Operating Systems		X	
CSE 539	Applied Cryptography		X	X
CSE 543	Information Assurance and Security		X	
CSE 545	Software Security		X	
CSE 546	Cloud Computing		X	
CSE 548	Advanced Computer Network Security		X	
CSE 550	Combinatorial Algorithms and Intractability	X		
CSE 551	Foundations of Algorithms*	X		
CSE 552	Randomized and Approximation Algorithms	X		
CSE 555	Theory of Computation	X		
CSE 556	Game Theory with Applications to Networks	X		
CSE 561	Modeling and Simulation Theory and Applications		X	
CSE 563	Software Requirements and Specification		X	
CSE 564	Software Design		X	
CSE 565	Software Verification, Validation and Testing		X	
CSE 566	Software Project, Process and Quality Management		X	
CSE 569	Fundamentals of Statistical Learning and Pattern Recognition	X		
CSE 570	Advanced Computer Graphics I			X
CSE 571	Artificial Intelligence			X
CSE 572	Data Mining			X

CSE 573	Semantic Web Mining			X
Course Prefix	**Course Title**	**Foundations**	**Systems**	**Applications**
CSE 574	Planning and Learning Methods in AI			X
CSE 575	Statistical Machine Learning			X
CSE 576	Topics in Natural Language Processing			X
CSE 577	Advanced Geometric Modeling I			X
CSE 578	Data Visualization			X
CSE 579	Knowledge Representation and Reasoning	X		

4XX and courses do not apply toward the required area courses.

Students who took CSE 465 will not be able to take CSE 543 for credit. These courses are anti-requisites.

Approved 400-Level courses to count toward CSE graduate program electives

Highlighted courses are planned to be offered online through ASU Online for MCS Online Students ONLY

CSE 408 Multimedia Information Systems
CSE 412 Database Management
CSE 414 Advanced Database Concepts
CSE 432 Operating System Internals
CSE 434 Computer Networks
CSE 438 Embedded Systems Programming
CSE 440 Compiler Construction I
CSE 445 Distributed Software Development
CSE 446 Software Integration and Engineering
CSE 457 Theory of Formal Languages
CSE 459 Logic for Computing Scientists
CSE 460 Software Analysis and Design
CSE 463 Introduction to Human Computer Interaction
CSE 464 Software Quality Assurance and Testing
CSE 466 Computer Systems Security
CSE 467 Data and Information Security
CSE 468 Computer Network Security
CSE 469 Computer and Network Forensics
CSE 470 Computer Graphics
CSE 471 Introduction to Artificial Intelligence
CSE 472 Social Media Mining
CSE 476 Introduction to Natural Language Processing
CSE 477 Introduction to Computer-Aided Geometric Design

A maximum of 6 credit hours of 400-level coursework is allowed. A maximum of 12 hours of a combination of 400-level and cross-listed courses (4XX/5XX) is allowed. If a 400 level course is cross-listed with a 500 level course, students will be required to enroll in the 500 level.