Introduction
This handbook describes policies and procedures related to the academic programs:
Computational Sciences and Informatics (CSI) doctoral program,
Computational Science (COMP) masters program, and
Computational Techniques and Applications graduate certificate (CCTA)
offered by the Department Computational and Data Sciences (CDS) in the
College of Science (COS) at George Mason University. The research and
teaching activities of the Computational Sciences program of SPACS reflect
the recognized role of computation as part of a triad with theory and
experimentation, leading to a better understanding of nature, and to the
solution of complex problems in science, engineering, and society. Additional
information regarding curriculum and entrance requirements may be
obtained through the website cds.gmu.edu
This handbook enters in effect 01/15/2011. Previous handbook can be found
at http://cds.gmu.edu/content/cds-graduate-handbook-previous

Admission to the Graduate Programs
There are several different types of admissions status used in the CDS
department, as explained below:

1. **PhD Degree Status** - The student may be enrolled either full-time or
   part-time in the CSI doctoral program.
2. **Provisional PhD Status** - Provisional admission into the CSI doctoral
   program.
3. **MS Degree Status** - Full admission into the COMP master program.
4. **Provisional MS Status** - Provisional admission into the COMP master
   program.
5. **Certificate Status** - Full admission into the CTAC certificate program.
6. **Non-Degree Status** - Non-degree students may take up to 12 credit
   hours of coursework which may be applied towards a degree program
   at a later date if approved. Students who later choose to seek
   admission into a degree program must reapply for admission using the
   regular graduate application.

**Note**: Provisional admission into one of the degree programs CSI, COMP,
and CTAC may be offered to students who have a GPA below 3.00 or who
may require remedial preparation in either Science, Mathematics, or
Computation. In such cases, the admissions letter will indicate courses that
the student must take (usually before enrollment or during the first
semester in the CDS program). Upon successful completion of the indicated
courses with a minimum average GPA of 3.33, the student will be notified by
letter that he/she has advanced from provisional status to degree status.
This change in status will also be documented in the student’s file. All credits
of graduate level work earned during provisional status will be applied towards the student’s degree program unless otherwise indicated.

**Student Orientation**

Students are encouraged to attend an orientation session during the first week of the Fall and Spring semesters. This meeting provides incoming students with an overview of program and GMU resources, including computer facilities, library facilities, offices, and staff. Staff members from SPACS and other GMU units will also attend to answer questions. Topics include policies and procedures for the academic programs and for addressing student concerns.

**Temporary Advisor**

The student will be assigned a temporary academic advisor upon acceptance into the program whether the status is degree, provisional, or certificate. The name and phone number of the temporary advisor are included in the acceptance letter. It is imperative that the temporary advisor be contacted as soon as possible to discuss enrollment in classes. Several forms should be completed during the meeting with the advisor as follows:

1. **Building and Room Access Form** need to be filled in by new students with the receptionist of the Dean's office.
2. **Computer Account Form** – Request an account to use the instructional computer cluster. These forms must be returned to the CDS office on the 3rd floor of the Research Building.

**Student Meetings**

Students meet as a group once each semester with the Computational Sciences graduate program coordinator to discuss general issues and concerns.

**Student Mailboxes**

The SPACS assigns mailboxes to all full-time students and also to those part-time students who request one. The mailboxes are located in the SPACS office on the 3rd floor of the Research 1 Building. Students should check their folder frequently for important notices and announcements.

**Student Cubicles**

Full-time CSI doctoral students are assigned cubicles in the Research 1 Building. Students may request a cubicle by notifying the pertinent office. Full-time students are given first priority, but we do try to accommodate all students who request space. In some cases, cubicles may be shared by two individuals. Students may not change cubicles or use a desk that has not been assigned to them.

**Doctoral Program Procedures**
The CSI doctoral program includes several important milestones that are documented in the student's file using a series of Program Forms that are available in the website, http://cds.gmu.edu. Note - the Forms referred to in this page are located in the Course and Degree Planning Form file.

I. Proposed Coursework

The student should meet with the temporary advisor to create a preliminary listing of anticipated coursework, which is documented on Form #1. Credits from a previous graduate program should be listed on this form. Credits taken in Extended Studies at GMU should also be listed. This form should be completed during a meeting with the temporary academic advisor and filed with the program office.

Note: Students in the CSI Ph.D. program may submit no more than 6 credits in each research reading courses (CSI 796, 996) toward the satisfaction of course requirements for the CSI Ph.D. degree and no more than 3 credits toward the satisfaction of the COMP master degree. Students in the CSI and COMP programs may submit no more than three 500-level courses toward the satisfaction of course requirements for the corresponding degree.

II. Doctoral Dissertation Committee

1. Once a student has completed over half of the 48 credits of coursework, the student should begin to work with the assigned temporary academic advisor to select a general area of scientific investigation and to identify possible dissertation directors. The student communicates with the faculty members, and is encouraged to sign up for a directed reading/research course as a means of investigating the area of research they might wish to pursue.

2. The student selects a faculty member who is willing to become the dissertation director. The dissertation director has the primary responsibility for leading the technical direction and content of the student’s research. The dissertation director must be approved by both the Graduate Coordinator and the COS graduate dean.

3. Once the dissertation director is selected and approved, the student forms a Dissertation Committee, which consists of a minimum of four instructional full time faculty members including the dissertation director and the committee chair (who is usually the dissertation director). The chair and at least one other committee member should be regular instructional full time professors of the Computational Sciences program. One member of the CSI committee should have primary GMU affiliation outside the CSI concentration within which the dissertation resides. Once the committee is formed, the membership is listed in Form #2, which must be signed by all committee members.
and the Graduate Coordinator, before being forwarded to the COS Academic Affairs Office for approval by the COS graduate dean.

4 The chair of the committee should be familiar with CSI and university policies and procedures regarding the advancement of a student through the entire process leading to the doctorate. The chair is responsible for organizing all meetings of the committee and ensuring that the proper procedures are followed.

5 The purpose of the dissertation committee is to guide the student through the research and writing of the dissertation, and also to evaluate whether the student is prepared to advance to doctoral candidacy. One of the primary roles of the committee is to prepare and administer the student’s doctoral candidacy examination in accordance with the policies of the CDS department and the College of Science.

6 A faculty member may leave the committee at any time. The replacement member must receive the consent of the rest of the dissertation committee members, the Graduate Coordinator, and the COS graduate dean. If the committee membership is modified, then a revised Form #2 must be completed and submitted for approval.

III. Program of Study
The student develops a detailed program of study including COS coursework taken in non-degree status as well as graduate courses taken prior to admission. All committee members and the Graduate Coordinator must approve the program of study as reported on Form #3, which is filed with the program office. Once the program of study is approved, the student can register in CSI 998 Dissertation Proposal. Course transfers will be approved by the Graduate Coordinator and filled with the Registrar by approving Form #3. Reduction of credits should be approved by the Graduate Coordinator in Form #3 but the reduction will appear in the student transcript when the student is advanced to candidacy.

IV. Candidacy Examination
1 The Candidacy Examination consists of written, oral, and computational parts. All parts are mandatory, according to the regulations of the individual degree program, as explained in the details below. The Candidacy Examination should determine mastery of fundamental knowledge and familiarity with current research in topics that contribute directly to the dissertation research area.

2 The composition of the Candidacy Examination is defined by a list of topics that are reasonably well understood in the scientific and technical community. Material covered may include content from courses taken by the student. After agreement is reached between the student and the committee, the list of exam topics and the proposed
exam date of are documented on Form #3, which is filed with the CDS office.

3 The written and computational parts of the exam must be submitted to the Graduate Coordinator by the Chair of the student’s committee at least one week prior to the examination.

4 The written portion will be administered and taken on campus and completed without collaboration, in a room assigned by the committee chair. In most cases, it is expected that the student will have the option of choosing a subset of questions to answer.

5 After completion of the written portion of the exam, the computational project is assigned, if applicable. In general, the student will have two weeks or less to complete the computational project.

6 The oral exam will be scheduled and administered by the committee, and can include discussion of the student's computational project, the student's proposed dissertation research, and the student’s performance on the written portion of the exam.

7 The Candidacy Examination is graded by the committee, which informs the student of the results in a timely manner. The entire exam process should be concluded within one semester.

8 Students have two opportunities to pass the Candidacy Examination.

V. Results of Candidacy Examination

Upon successful completion of all portions of the exam, Form #4 is filled out and signed by the committee members and the Graduate Coordinator and forwarded along with the graded exam to the program office for addition to the student’s file.

VI. Doctoral Dissertation Proposal

1 Students must prepare a detailed Dissertation Proposal and present the proposal to their committee for the approval. Proposals must be approved by the dissertation director and the dissertation committee and will also be reviewed by the Graduate Coordinator.

2 The proposal should contain sufficient text, illustrations, tables, equations, and bibliography.

3 The proposal should include a detailed description of the work to be undertaken; its relation to previous published work; and the scientific, mathematical, and computational methods to be employed. Proposals should also include a clear set of goals, methods, and models, and a discussion of the expected results and their anticipated significance. The discussion should also include any limitations on the generality of these results.

4 Proposals should discuss hardware/software issues including computational tools, techniques, and algorithms to be utilized in the research.
VII. Advancement to Candidacy
1 After successful completion of all portions of the Candidacy Examination and the approval of the Dissertation Proposal, the student is advanced to Doctoral Candidacy. Advancement to candidacy is documented by Form #5, which should be attached to the dissertation proposal and forwarded to the Graduate Coordinator for review, approval, and submission to the COS dean's representative.
2 Forms #4 and #5 document that the student will be advanced to candidacy. The COS Academic Affairs Office notifies the Registrar of advancement and eventual reduction of credits. At that time, the student’s status formally converts to doctoral candidate.
3 Once advanced to candidacy, students must be continuously enrolled in a minimum of three credit hours per semester (however, see item 3 below for exceptions).

VIII. Dissertation Research Hours (CSI 998 and 999)
1 Once a student has a fully approved dissertation committee and is within one semester of taking the Candidacy Examination, the student may register for 998, Doctoral Dissertation Proposal, in order to develop a proposal for submission to the dissertation committee.
2 Once a student has reached candidacy by passing the Candidacy Examination and having the Dissertation Proposal approved by the committee, then the student must maintain continuous enrollment in 999, Doctoral Dissertation, until the dissertation is completed.
3 The total number of credit hours of 998/999 must be at least 24 for graduation (however only 24 can be included on the graduation application). Furthermore, the number of 999 hours must be at least 6 credits. Having reached doctoral candidacy, the student must enroll in at least 3 hours of 999 each semester until 24 hours of CSI 998/999 have been completed, after which the student may register for one credit of 999 each semester and be considered a full-time student. The student must also take at least one credit of 999 during the semester of their graduation.

IX. Doctoral Dissertation
A dissertation is a written piece of original, independent work that demonstrates the doctoral candidate's mastery of the subject matter, methodologies, and conceptual foundations in their chosen field of study. Content should:
• be relevant and current in the chosen area
• demonstrate an understanding of theoretical/experimental research and development issues
• demonstrate a mastery of computational tools and techniques
• make a contribution through either new results or new techniques
• be acceptable for publication in a refereed journal. A pre-defense in front of the committee should take place a month prior to the defense.

Note: The dissertation must be submitted directly to the Library along with all approval signatures per their requirements and instructions. Guidelines for the content and general format of the doctoral dissertation may be found at www.gmu.edu/library/specialcollections/dtwebguide.htm. Fenwick Library, for step-by-step instructions on preparing the dissertation.

X. Graduation Procedures
Students may access Graduation information at www.cos.gmu.edu. They must complete and submit a Graduation Intent Form, which can be filled out on-line. The Application for Graduation must be completed by the student, reviewed by the Chair of the dissertation committee and approved by the Graduate Coordinator. This form is forwarded by the Graduate Coordinator to the COS Academic Affairs Office for review and approval by the COS graduate dean. A copy is made for the student's file and for verification of the program requirements. The approved graduation application is forwarded to the graduation section of the Registrar's office for final processing. The graduation application is also available on-line.

Application for Graduation Dates
a. Spring March 31
b. Summer March 31
c. Fall October 31

Dissertation Due Dates
a. Spring March 31
b. Summer July 15
c. Fall November 15

Please note that the above dates are approximate and can change each semester. Check the COS website, www.cos.gmu.edu, for current information.

1 When the doctoral dissertation thesis is completed, a candidate must arrange with his/her committee to schedule the final defense, which is open to the public. After verifying a date with members of the committee, contact the COS Academic Affairs Office to schedule a room.

2 A pre-defense of the dissertation must occur at least one month prior to the final defense.
3 It is the responsibility of the candidate and his/her committee to correct any errors in thesis content. After review by Robert Vay, rvay@gmu.edu, Special Collections, Fenwick Library, the candidate must bring a draft to the Johnson Center Library for review by the GMU community. The COS Academic Affairs Office staff will prepare a flyer announcing the candidate’s dissertation topic and final defense date. This will be distributed to the GMU community and must be posted at least two weeks prior to the final defense.

4 After the final defense, the candidate must obtain all required signatures (in black ink) and must submit the following documents to Robert Vay, wing 2C, Fenwick Library:

- Three original signature sheets (black ink). Please type out the members’ names next to their signatures on bond paper.
- Two original copies of the complete dissertation printed on 100% cotton bond paper. (check in the library for updates)
- One copy for microfilming along with a check for $55.00 and completed application form for UMI Dissertation Services.
- Completed National Research Council Survey.
- Form #6 is filed with the CDS office to close the student file, and a copy of the student dissertation should be filled with the GMU Library.

**Master Program Procedures**

The COMP master program with thesis option includes formation of a master's committee and approval of the student's program of study. These steps are similar to the doctoral program. The master's thesis committee is composed of three GMU regular instructional full time faculty members with in the Computational Sciences program. Master's thesis forms are available in the website, http://cds.gmu.edu.