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Computer Science Ph.D. Handbook

Monterey, California, Naval Postgraduate School

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COMPUTER SCIENCE PH.D. HANDBOOK

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1. Program Objective

The Ph.D. is the highest degree awarded by universities in the United States and represents the pinnacle of academic achievement. The mission of the Ph.D. degree program in Computer Science is to provide an advanced education in Computer Science to both U.S. and international military personnel and government civilians, advance the basic understanding of the theory and practices of computing, and contribute to the creation and consolidation of knowledge in computer science for the U.S. Department of Defense. We equip our students with the expertise necessary to independently perform state-of-the art research, to formulate and develop creative solutions to novel and existing problems, and to intelligently manage the research of others. In addition to a resident curriculum, the program also supports distance learning options to accommodate special circumstances of military or government civilian students who cannot leave their duty stations on a long term basis.

2. The Computer Science Ph.D. Committee

The Computer Science Ph.D. Committee is responsible, in cooperation with the faculty and the students, for managing all aspects of the Ph.D. process for the department as described in this document. Please contact one of the committee members if you have any unanswered concerns or questions:

Members as of December 2010 (in alphabetical order):

- Dr. Mikhail Auguston maugusto@nps.edu
- Dr. Ted Huffmire tdhuffmi@nps.edu
- Dr. Craig Martell cmartell@nps.edu
- Dr. Bret Michael bmichael@nps.edu
- Dr. Dennis Volpano volpano@nps.edu (Chair)
- Lt. Col. Joel Young jdyoung@nps.edu

Further details of the committee's roles and responsibilities as related to the Ph.D. processes are provided in Section 7.

3. Requirements for Entry

U.S. military officers, foreign military officers, U.S. government civilians and employees of foreign governments may apply. An applicant should have a Master's Degree (or in progress of getting a Master's Degree) in Computer Science. Generally, an acceptable Ph.D. applicant must have above-average grades in a typical Master's degree program. The Computer Science Ph.D. Committee will also take other evidence of research or academic ability into account in making a recommendation as to whether to admit an applicant.

Special tuition requirements apply for enrolling a distance learning Computer Science Ph.D. program. In particular, an applicant must provide funding documents coordinated with the registrar's office to demonstrate the availability of funds to cover at least the first year tuition.

4. Application Procedure

Applicants must follow the standard procedures of their sponsoring organization in applying to a graduate education program. See the Academic Council Policy Manual. Applicants should have the sponsoring organization forward their letter of application to:

Director of Admissions (Code 01C3)
Naval Postgraduate School
1 University Circle, He-022
Monterey, CA 93943
Telephone: (831) 656-3093, DSN 756-3093
Fax: (831) 656-2891, DSN 756-2891
E-mail: grad-ed@nps.edu

The application must include:

- certified transcripts of all courses taken at the university level, including both undergraduate and graduate courses
- results of a current GRE general test if the prospective student is not currently enrolled at the Naval Postgraduate School
- scores on the TOEFL examination if the prospective student is a foreign student who is not a native speaker of English

(Exceptions may be granted upon approval of a "Request for Waiver".)

If available, the following should be included:

- any material demonstrating ability to perform research, e.g., Master's theses and research papers.
- reference letters only if the writer can report direct knowledge of the candidate's technical and research abilities.

Applicants should note that an oral interview (typically a phone call, preferably in person, if possible) may be required to assess the applicant's readiness for entry into the Ph.D. program.

For a sample admission application letter, refer to Section 24.

The Computer Science Ph.D. Committee evaluates each applicant to gauge the minimum amount of time the applicant will need to complete the program. The normal minimum time is three years for a full-time student already proficient at the Master's level in Computer Science or a closely related field at the time of admission. The Computer Science Department may impose the condition that the applicant obtains authorization for at least four years to complete the degree. Applicants are evaluated on their qualifications for completing a high-quality Computer Science Ph.D. degree. Admitted Ph.D. students may begin in any quarter, but it is recommended that the student start in the Fall Quarter (beginning in October) due to the requirements and timing of the Written Qualifying Examination.

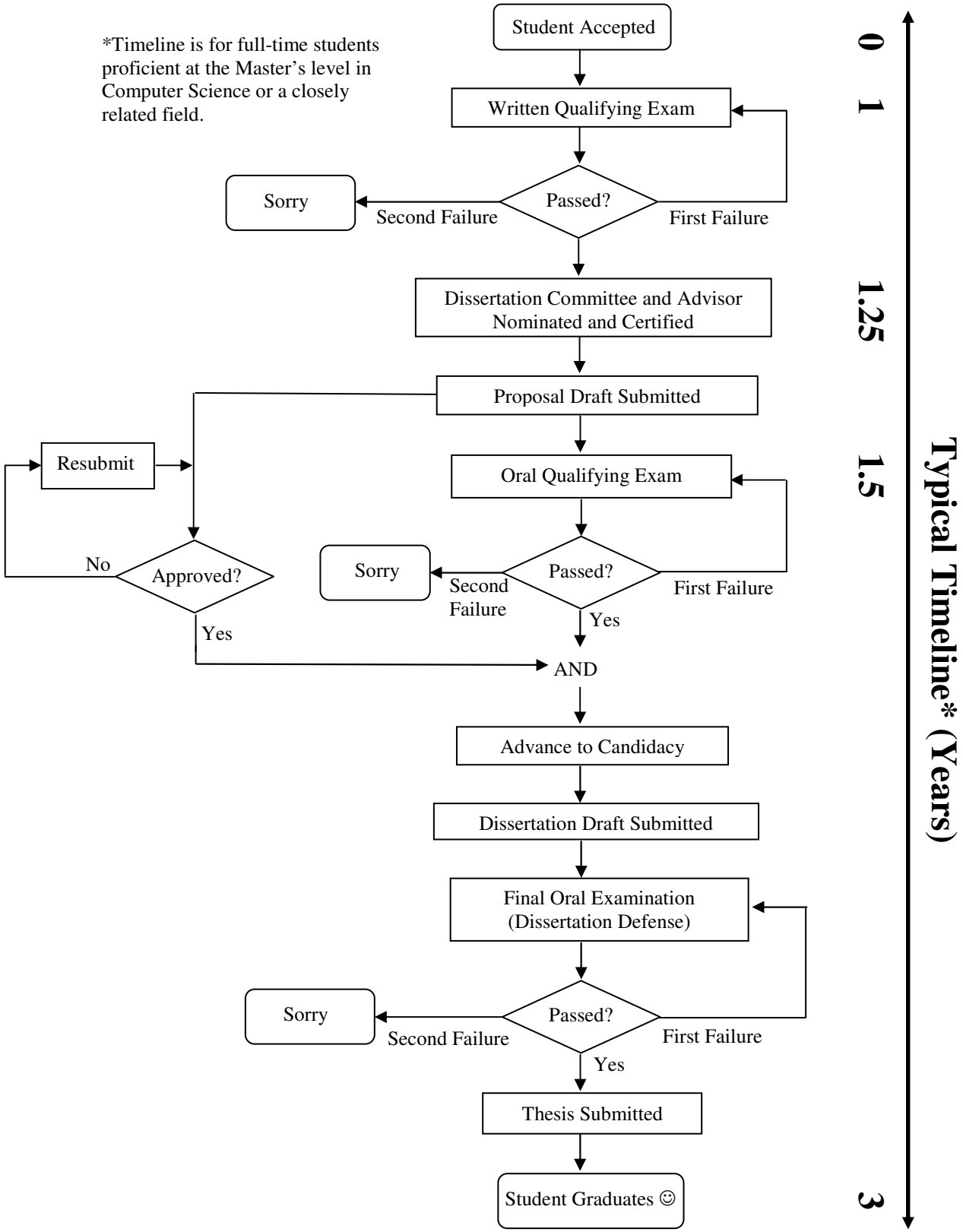
Applicants are cautioned that admission to the Ph.D. program does not guarantee successful completion of the program. It is significantly more difficult to assess the qualifications of a student for a Ph.D. admission than for other degrees. This is because the research activities required for the Ph.D. requires significant creativity and independence. Experience suggests that not all of the students admitted will successfully complete the program. The purpose of the Written Qualifying Examination is to give students early warning if they are likely to have trouble in the Ph.D. program.

5. Degree Requirements

The student must complete the following steps, as detailed in the following sections.

1. Pass the Written Qualifying Examination.
2. Pass the Oral Qualifying Examination.
3. Form a Dissertation Committee.
4. Submit approved Dissertation Proposal to C.S. Ph.D. Committee.
5. Advance to Ph.D. Candidacy.
6. Successfully defended their Dissertation.
7. Submit approved Dissertation.

6. Sequence of Events Leading to a Ph.D.



7. Responsibilities of Computer Science Departmental Ph.D. Committee

Computer Science Ph.D. Committee is responsible for defining and enforcing the standard of performance required of PhD students enrolled in a computer science Ph.D. program. In particular, the Computer Science Ph.D. committee's duties are as follows:

1. Ensure that each student's Ph.D. education plan conforms to the minimum requirements imposed by the Academic Council in the Academic Council Policy Manual.

2. Determine any standing requirements, beyond those of the Academic Council, that must be fulfilled by all Ph.D. students in the Department.

3. Nominate, for approval by the Academic Council, the members of each Ph.D. student's Dissertation Committee, and certifying to the Council that the Committee Chair is qualified.

4. Design and execute the written qualifying examinations and oversee the oral qualifying examinations for each Ph.D. student, and insuring that the nature of those examinations conforms to the requirements of the Academic Council Policy Manual. Actual execution of the oral qualifying exam is normally delegated to the student's Dissertation Committee.

5. Request that the Academic Council advance a student to candidacy for the Ph.D. degree upon approval of a dissertation committee, dissertation topic, and successful completion of all screening, language, computing, and qualifying requirements and exams.

6. Appoint each entering Ph.D. student a Faculty Mentor to guide the student until such time as the student has formed a Dissertation Committee.

7. Review all students' performance statements and evaluate student eligibility to remain in the program. Notify students of any discrepancies and required actions in writing.

Prior to the naming of a dissertation committee and a dissertation supervisor, the departmental Ph.D. committee, with the help of the student's Faculty Mentor, has the responsibility of supervising the student's program of study, After the naming of the dissertation committee and dissertation supervisor, the departmental Ph.D. committee retains the responsibility of overseeing the activities of dissertation supervisor and the dissertation committee, maintaining quality control of the departmental Ph.D. program.

8. Forming a Dissertation Committee

Role of the Student

The burden of successful management of a doctoral student's academic career falls squarely on the student. The student must ensure that the requirements for each stage of the process are met on schedule. This includes filling out the necessary paperwork, scheduling meetings, forming a committee, enrolling in courses, and finding a topic.

Role of Computer Science Ph.D. Committee

The Computer Science Ph.D. Committee approves the composition of the dissertation committee and then requests approval of the dissertation committee from the Academic Council.

Role of the Dissertation Advisor

*The Computer Science Ph.D. Committee oversees the formation of the Dissertation Committee. Faculty without an*y prior experience advising Ph.D. students in Computer Science must petition the Ph.D. Committee for permission to supervise a Ph.D. student. The petition must be in writing and should include a curriculum vita and any other material validating the faculty member's academic qualifications. Advising duty can be shared among multiple faculty members. With the help of the student, the advisor is responsible for submitting paperwork, arranging exam dates, announcing the oral exam to all faculty in the department, and announcing the final defense to all NPS faculty.

The dissertation advisor has the responsibility to supervise the student's program of study in accordance with the requirements of the Academic Council.

The dissertation advisor should have the following qualifications:

- A doctorate degree and demonstrated expertise in his/her field of specialty;
- At least one year of experience serving on a dissertation committee;
- Activity and productivity in research, as evidenced by recent referred publications of his or her research in recognized journals or conferences, or a broad reputation as a productive researcher in his or her field of specialty;

Other evidence may be considered which is pertinent to demonstrating research activity or productivity.

Role of the Dissertation Committee

The candidate's dissertation committee, once established, is responsible for supervising the candidate's completion of his/her degree, including completion of course of study, dissertation research, and production of the dissertation document.

- The dissertation committee is nominated by the departmental Ph.D. committee, which shall designate one or more members to be the dissertation advisor.
- The dissertation committee, at a minimum, has three faculty members from the Computer Science Department and one NPS faculty member from outside the Department.
- The dissertation committee may comprise members from outside NPS such as members from another university or appropriate institution.
- At most one committee member is exempt from having earned the doctorate.

9. Written Qualifying Examination

The purpose of the Written Qualifying Examination is to assess a prospective candidate's proficiency in two major subject areas of Computer Science: *Computation* and *Systems*. The written qualifying exam therefore comprises two separate exams, one in each area. These two exams are administered over two consecutive days with the computation exam administered on

the first day and the systems exam on the second day. Both exams are closed-book, closed-notes, closed-electronics with exceptions granted for accessibility reasons, and are prepared and graded by the Computer Science Ph.D. committee. The exams are offered once per year in the Fall quarter. All candidates, including all distance learning students, must take them at NPS.

Each major subject area has three sections which are covered by the following courses. The syllabi of these courses provide the general scope of the exams. It should be noted that the qualifying exams will go more in depth on some topics than the course work. These topics are clearly identified in the written qualifier study guides along with suggested reading.

Computation

Algorithms (CS3150)[1]
Automata and Formal Languages (CS3101)
Theory of Computation (CS3651)

Systems

Operating systems principles (CS3070)
Programming language design and implementation (CS3111 or CS3022)
Computing architectures (CS3200)

A candidate has four hours to complete each exam in each major subject area. The grading is on a pass-fail basis. The student must pass every section of each major subject area in order to pass the entire written qualifying exam. Graders can augment with a grade with "+" or "-" if they feel that will convey additional information to the Ph.D. committee. There will be at least two graders for each question (usually including the author of the question). Graders will supply brief comments supporting the grades they assign. The Ph.D. committee will supervise the entire grading process and reconcile differences among graders.

If a candidate fails any section of the systems or computation exam then the candidate may take another written exam for that section only within one year. A candidate may retry only once for each failed section. See the Academic Council Policy Manual for more information.

The Computer Science Ph.D. committee makes the most-recently administered written exams available to prospective candidates. It also maintains a study guide which specifies for each of the major subject areas, the committee's expectations of a candidate in that area, and the suggested reading list for each subject. The guide describes techniques, methods and concepts in which a candidate is expected to demonstrate proficiency. These materials are being maintained under an online course management system. A candidate's contact in preparing for the Written Qualifying Exam should be a member of the Computer Science Ph.D. committee.

10. Minor Requirements

The Computer Science Ph.D. Program has the following requirements for a C.S. Ph.D. minor. A student must earn a "B" or better grade in each of the following courses: CS3101, CS3150, CS3200 and CS3070. The Computer Science Ph.D. committee may approve courses taken elsewhere as substitutes for these courses providing they cover the same content.

[1] Current course coordinators: CS3150: Doron Drusinsky; CS3022, CS3101, CS3651: Dennis Volpano; CS3111: Luqi; CS3200: Ted Huffmire.

11. Ph.D. Seminar Requirements

Every Computer Science Ph.D. student is required to enroll each quarter in the Ph.D. seminar. See the Maricel Eddington in the CS Programs Office for enrollment (mmedding@nps.edu).

12. Semi-Annual Progress Report Requirements

Students with dissertation advisors should send their progress reports to their dissertation committee at least once every six months. Students without advisors should send their progress reports at least once every six months to the Computer Science Ph.D. committee chair.

13. Dissertation Proposal

A dissertation proposal must be submitted and approved by the Dissertation Committee. The purpose of the dissertation proposal is to provide the Dissertation Committee with the information needed to determine whether the proposed research topic is suitable for a Ph.D. dissertation. The proposal should describe the student's best current estimate of their research plan. The details in the proposal may be changed later as the research subject is understood in more detail. (See Section 24 for a sample dissertation proposal outline.)

14. Oral Qualification Examination

Usually within one year and no more than two years after the successful completion of the Written Qualifying Examination, the student must successfully complete the Oral Qualifying Examination. Any courses in the study plan must be completed before the student takes the Oral Qualifying Examination. The student gets only two chances to pass the Oral Qualifying Examination (see Academic Policy Manual, Section 5.4.9, shown below).

The Oral Qualifying Examination is administered by the Computer Science Ph.D. Committee. The Computer Science Ph.D. Committee *may* delegate its responsibility for administration of the exam to an Oral Examination Committee. The Oral Examination Committee Chair schedules the oral portion of the Qualifying Examination and is responsible for arranging an Academic Council Representative to attend the oral qualifying examination. See Section 24 for a sample notification memorandum.

The Oral Examination Committee asks any questions that it feels may help decide whether the student has sufficiently broad knowledge of Computer Science and sufficient analytic capability to begin full-time Ph.D. research. Time permitting, other faculty members in attendance may also ask questions of the student. The questions may be on any reasonable topic.

When the Oral Exam Committee is satisfied that the student has been questioned thoroughly, the student leaves the room, the Oral Exam Committee discusses concerns and votes on whether to pass the student; *a unanimous vote is required*. The final overall decision regarding pass or fail of the Oral Qualifying Examination is made by the Oral Examination Committee after the oral examination is completed.

The final result of both the Written and Oral Qualifying Examinations must be reported to the Curricular Officer for Computer Science Programs, the Associate Provost for Instruction, and to the Academic Council not later than two weeks after the scheduled date of the oral examination.

Each member of the Oral Exam Committee shall sign the report. See the Academic Council Policy Manual for more information. A sample Pass/Fail memorandum is given in Section 24.

15. Advancement to Candidacy

The following requirements must be satisfied before a student can be advanced to candidacy for the Ph.D. degree:

1. Approval of the dissertation proposal by the dissertation committee
2. Passage of the Written Qualifying Examination
3. Passage of the Oral Qualifying Examination
4. Completion of all required courses and other studies.

Upon successful completion of the Oral Qualifying Examination, the student must petition the Academic Council for "advancement to candidacy for the doctorate." A memo to the Academic Council from the Computer Science Ph.D. committee must be prepared stating that the requirements for advancement to candidacy have been successfully completed. The Academic Council notifies candidates of advancement to candidacy in writing.

16. Dissertation Preparation Guidelines

Dissertation Topic

The distinct requirement of the doctorate is the successful completion of a scholarly investigation leading to the original and significant contribution to knowledge in the candidate's major area of study. The subject of the investigation must be approved by the dissertation committee, and it must be submitted to the Academic Council no later than the time of the request for advancement to candidacy.

Final Dissertation Guidelines

When the dissertation has been revised and clarified to the satisfaction of each member of the Dissertation Committee, it is ready for signatures. First, each member of the Dissertation Committee must sign it. Then the Thesis Processor checks and ensures that the dissertation format is conformant to NPS guidelines.

17. Final Dissertation Defense

The final oral examination (final dissertation defense) is the capstone event in the path to a Ph.D. The focus of the defense is for the candidate to demonstrate a significant and original contribution to the selected discipline. Furthermore, the candidate is expected to demonstrate a mastery of the topic, its history, its context within computer science, and finally the current state-of-the-art.

The dissertation defense must be scheduled by the student in cooperation with the Dissertation Committee Chair with the following constraints:

- A nearly final draft of the dissertation must be provided to all members of the Computer Science Ph.D. Committee at least one month prior to the date of the scheduled defense. This draft must be approved by the candidate's dissertation committee. The dissertation draft should be made available to all interested faculty one week prior to the defense.

- The candidate's entire Dissertation Committee must be present either physically or via video teleconference, or at last resort via speakerphone.
- The defense must be scheduled at least six months after passing the oral qualifying exam.
- The date, time, and location must be announced to the Computer Science Department at least three weeks in advance.
- The dissertation defense consists of an open presentation of the findings of the research by the candidate, including response to questions from the audience within the allotted time period. Following the public question and answer period, visitors and students will be asked to leave and the faculty will be given the opportunity to ask detailed questions. At the end of this period, everyone, including the student, except for the Academic Council Representative and the Dissertation Committee will be asked to leave. The Dissertation Committee will discuss the presentation and thesis and vote to determine if the student passes the examination. A unanimous vote is required to pass the examination. See the Academic Council Policy Manual for voting rights.

A successful outcome is either that the candidate's dissertation is accepted as is or that specified minor revisions are required. Minor revisions are defined as those reasonably doable in 30 days. If more extensive revisions are required or the committee is unable to achieve unanimity, then the candidate did not pass the Final Dissertation Defense.

18. Checklist for Graduating Students

By Week 12 of the quarter before graduation:
- Student submit draft of complete dissertation to his/her dissertation committee

By Week 1 of the graduating quarter:
- Student submit draft to thesis processor for format check according to Step 1 of the On-line Dissertation Submission procedure
- Student sends the following information to the CS Ph.D. Committee Chair:
  Full name (how name should appear on diploma)
  Mailing address for the diploma
  Will student be attending graduation at NPS?

By Week 3:
- Student gets feedback from the dissertation committee and thesis processor and revises draft accordingly
- The CS Ph.D. Committee will provide graduating student's information to the Computer Science Curricular Office

By Week 4:
- Student provides revised dissertation draft and presentation slides to all dissertation committee members

By Week 6:
- Dissertation committee members provide feedback to student whether dissertation is ready for final defense
- If ready, student schedules final defense by week 8

- If not ready, student withdraws from the graduation list

By Week 8:
- Conduct the final defense
- Withdrawal deadline for graduation
- While student is at NPS, contact the following:
  Caitlin Allion, Academic Council Secretary – to complete National Science Foundation Survey (831-656-2592, cmallion@nps.edu)
  Ms. Sonya Solomon, Graduation Coordinator – for graduation program information (831-656-2075, ssolomon@nps.edu)
  Ms. Pat Paulson, Provost's Secretary – for Cap & Gown and Dissertation Title (831-656-2371, ppaulson@nps.edu)
- Student prepares final version of dissertation responding to issues raised by the committee in the final defense.

By Week 11:
- Graduating student's final week to obtain all necessary signatures for the completed dissertation, dissertation release and security form.

Week 12:
- Graduating students must be present during the graduation week to attend the commencement rehearsal

19. On-line Dissertation Submission Procedure

Once the student has a completed their dissertation document to the satisfaction of their Dissertation Committee, they must submit it to the Naval Postgraduate School using the online submission system. The School's URL is: http://www.nps.edu/research/research1.html

The SharePoint system must be used by all in-residence students. Distance learning students are strongly encouraged, but not required, to use SharePoint. To receive a URL and account information for the SharePoint site, email Rhoda Lynch (rlynch@nps.edu). FAQ's can be accessed from the following URL: http://www.nps.navy.mil/ITACS/KB/browseCategories.asp.

Note that distance learning Students must use a VPN client connection to connect to the site. The VPN client must be installed on the student's home PC. To obtain the VPN client, go to https://www.nps.navy.mil/ITACS/SoftwareLib/index.htm and click on available software. If you have problems, again contact Rhoda Lynch at (831) 656-3128 or rlynch@nps.edu.

Below is a summary of the online submission procedure:

1. Email draft thesis as a Word file to NPS Thesis Processor at thesisdraft@nps.edu. If using SharePoint, email URL.
2. Your Thesis will be returned by email within two days with corrections/comments by NPS Thesis Processor. Retain this email.
3. Student makes necessary corrections recommended by NPS Thesis Processor--corrections are made in word processing version; then corrected version is converted to PDF.

4. To check for corrections in Word 2003, go to arrows in Toolbar by Show button, click accept/reject changes. Click arrow again to take you to the next correction. You can accept (or reject), and it will allow you to make the changes in your thesis.
5. Combine final thesis into one PDF file.
6. Print out PDF version of thesis and provide to your Dissertation Committee Chair.
7. Download and complete the Thesis Release Form (Thesis Release form provides General Info on thesis, release to WWW, Distribution Statement, applicable technology areas related to thesis).
8. Print your Signature Page from your thesis.
9. Obtain necessary signatures on final PDF of thesis. The Thesis office does not require hard copy.
10. Obtain necessary approvals/signatures on Thesis Release Form and Signature Page.
11. Create Special Abstract with email addresses in Word and save as separate file.
12. Prepare Color Page Print Request. (if needed)
13. Email final version of thesis (or SharePoint URL) as one PDF file and special abstract as Word file to YOUR Thesis Processor (whoever did your initial draft review at step 2 above). E.g. ThesisFinal@nps.edu if Pam Silva was your Processor or nmaniego@nps.edu if Nita was your Processor
14. Once the final version (PDF) of thesis and Special Abstract is approved, you will be emailed that as soon as the Dissertation Committee Chair in your department brings the signed original Signature Page, original signed Thesis Release Form, and Color Page Print Request (if needed) to the Thesis Processor, your green card will be completed and given to your Dissertation Committee Chair to mail to you.

20. Time Limits

Students have two years from the date of admission to complete the written and oral qualifying examination. Those who have advanced to candidacy have five additional years from that event to complete their degree.

21. Sample Dissertation Proposal Outline

Dissertation Proposal

<AUTHOR>
<DATE>

I Proposed title of dissertation

II Goals and proposed new contribution.
- A. Introduction to the problem.
- B. Significance of the problem and its potential impact.
- C. Specific goals of proposed research – which subproblems will be solved by the work you propose to do, how do they relate to the overall problem.
- D. Proposed advances to the state-of-the art – in what sense will your proposed work improve over the best previous results, for each issue you plan to address.

III Research strategy and proposed approach.
- A. Tactics for producing the proposed new contribution
- B. Methods to substantiate new contributions including proposed experiments, measurements or theoretical analysis.
- C. Expected delivery of products, if any.

IV Assessment of previous work. For each issue you plan to address in your contributions, find the best relevant previous publications.
- A. Summarize the results and assess their significance in the context of your problem.
- B. Explain the relation to your work – which parts will you use, or is this one of the best previous competing solutions you will improve over.
- C. Point out weaknesses
- D. Explain how you will overcome the weakness or improve on previous results, if you plan to do so.

V Tentative chapter outline for dissertation.
Typically,

Chapter 1 Introduction
Chapter 2 Assessment of previous work
Middle chapters explain your main results, analysis of measurements, experimental results or theoretical analysis of performance, accuracy, or other measures of how good your contribution is.
Last chapter – conclusion and recommendations for future work.

VI Research plan and proposed schedule.

VII List of references.

22. CS Faculty (potential dissertation supervisors)

Mikhail Auguston	Software Engineering, Programming Languages, Compiler Construction, Testing and Debugging Automation, Visual Programming, Computer Security
Valdis Berzins	Software Engineering, Computer Aided Design, Software Evolution and Merging, Software Architectures, Specification Languages, Computer Languages, Program Synthesis and Verification, Knowledge Representation, Engineering Databases
Robert Beverly	Internetworking Protocols, Network Security, Distributed Systems
Chris Darken	Artificial Intelligence, Machine Learning, Natural Language Processing, Virtual People
Rudy Darken	Virtual Environments, Human-Computer Interaction, Human Factors, Training Systems, Wireless Mobile Computing
Peter J. Denning	Technology and Transformation, Networking in Network Centric Operations
George W. Dinolt	Formal Methods, Computer Security
Doron Drusinsky	UML, Verification, Formal Methods, Software Testing, Run Time Verification, Temporal Pattern Matching, Automatic Test Generation, Real Time Model Checking, Temporal Logic, Extended Regular Expressions, Visualization, Knowledge Models
Simson L. Garfinkel	Computer Forensics, Usability and Security, Privacy Technology, Information Policy, and Personal Information Management
John Hiles	Agent Modeling, Complex Adaptive Systems
Ted Huffmire	Computer Architecture, Computer Security
Cynthia E. Irvine	Information Assurance, Multilevel Security, High Assurance Security Engineering, Network Security, Security Models, Distributed Systems Security, Security Requirements Engineering, Information Assurance Pedagogy, Systems Architecture
Mathias Kölsch	Computer Vision, Virtual and Augmented Reality, Human-Computer Interaction
Ted Lewis	Legacy IT Systems, Critical Infrastructure Protection, Network Science
G.M. Lundy	Computer and Telecommunications Networks, Internetworking, Network Security, Network Protocols, High Speed Networks, Application of Networks
Luqi	Software Engineering, System Automation, Software-Intensive System Modeling, Computer-Aided Prototyping, Specification Languages, Engineering Automation for System Requirements, Design Methodology, Real-Time and Embedded Systems, Software Tools, Software Evolution, Software Architecture, Software-Intensive System Safety, Signal Processing, Control System Design, Collaborative and Network Centric Applications
Craig Martell	Modeling Communication and Coordination Among Agents, Natural-Language Processing, Machine Learning, Robotics

Robert B. McGhee	Military Robotics, Computer Architecture, Computer Graphics
Bret Michael	Engineering Dependable Distributed Systems for Defense and Intelligence Applications
Thomas W. Otani	Object-Oriented Modeling, Visual Query Languages, Software Development for Mobile Devices, Computer Science Education
Neil C. Rowe	Applied Artificial Intelligence
Man-Tak Shing	Software Engineering, Real-Time Systems Modeling and Scheduling, Software Architectures for Embedded and Distributed Systems, Computer-Aided Prototyping, Software Reengineering, Engineering Automation for Computer Based Systems
Gurminder Singh	Wireless Mobile Computing, Mobile Devices, Wireless Data Services
Dennis Volpano	Networking, Logics, Theory of Computation, Proof Methodologies, Decidable Theories, Static Analysis, Programming Languages
Geoffrey G. Xie	Network Control and Management, Network Security, Extreme Networking (Underwater Acoustic Networks, etc.), Multimedia Systems
Joel Young	Artificial Intelligence, Machine Learning, Classification, Pattern Recognition, Probabilistic Modeling

23. Computer Science Ph.D. Milestones

PO	Computer Science Program Officer
PCC	Computer Science Ph.D. Committee Chair
DCC	Dissertation Committee Chair/Supervisor
DC	Computer Science Department Chair

Milestone	Documentation	Signatures	Notes
Applicant review by Ph.D. Committee completed	PCC updates AMS PCC notifies grad-ed@nps.edu and department PO, or International Student Office	PO, PCC, DC for foreign students only	Foreign students use yellow form which requires PO, PCC and DC signatures
Written qualifying exam taken	PCC updates Qualifying Exams record in Python PhD Module if student passed	None	Student has up to 12 months to retake if necessary
Preparation for oral qualifying exam completed	Oral qualifying exam memo to AC	PCC	Submitted by PCC to AC 6-12 months after passing the written exam
Oral qualifying exam taken	Results of oral exam memo to AC (pass or fail) PCC updates Qualifying Exams record in Python PhD Module if student passed	PCC	Submitted within two weeks to AC, Vice Provost for Academic Affairs and PO
Nomination of dissertation committee and supervisor by Ph.D. Committee	Appointment of dissertation committee memo to AC	PCC, DC	Ph.D. Committee and DC certify supervisor is qualified under AC guidelines for this role Registrar enters members into Python once approved by AC
Dissertation committee change	Dissertation committee appointment change memo to AC	PCC, DC	Registrar updates Python if approved by AC
Dissertation proposal approved by dissertation committee	AC notified of approval and dissertation topic via advancement to candidacy memo	Members of Dissertation Committee	Registrar updates student's status in Python

Dissertation proposal approved and study program completed	Advancement to candidacy memo to AC	Members of Dissertation Committee and PCC	Includes dissertation topic approved by dissertation committee Registrar updates Python if approved by AC
Dissertation draft as basis for defense completed	Dissertation defense memo to AC	Members of Dissertation Committee	DCC provides copy to the PCC at least one week prior to scheduled defense; Registrar notes AC rep to attend dissertation defense in Python
Dissertation defense completed	Results of dissertation defense memo to AC	Members of Dissertation Committee, PCC, DC and Dean	If candidate passes defense then memo includes nomination of candidate for Ph.D. Registrar notes date AC approves nomination in Python
Graduation extended	Graduation deadline extension memo to DC or AC	Ph.D. candidate	Three 1-yr extensions can be granted by DC; all others by AC

24. Sample Letters/Memoranda

Sample Admission Application Letter
Sample Appointment of Dissertation Committee Memorandum
Sample Oral Qualifying Examination Memorandum
Sample Results of Oral Examination Memorandum
Sample Advancement to Candidacy Memorandum
Sample Dissertation Defense Memorandum
Sample Results of Dissertation Defense Memorandum
Sample Graduation Deadline Extension Memorandum
Sample Dissertation Committee Appointment Change Memorandum

Sample Admission Application Letter

<Your Return Address>

Date:

Director of Admissions (Code 01B3)
Naval Postgraduate School
589 Dyer Rd., Rm. 103C
Monterey, CA 93943-5100

To Director of Admissions:

Please accept my application to the Ph.D. program in Computer Science at the Naval Postgraduate School. I have enclosed the following application materials:

Certified transcripts from [Enter Academic Institution here[2]]

Results from a recent GRE general test[3]

Results from a recent TOFEL test[4]

Master's Thesis entitled [Enter thesis title here[5]]

Research paper entitled [Enter paper title here[4]]

Reference letter from [Enter name of reference here[4]]

Thank you for your consideration.

Sincerely,

<Your Name>
<Your Job Title>

---

[2] Transcripts for all undergraduate and graduate courses taken at the university level should be included. Repeat this line as many times as needed to cover all courses taken.

[3] Only necessary if the prospective student is not currently enrolled at NPS.

[4] Only necessary if the prospective student is not a native English speaker.

[5] Only include when available, Delete when not available, Repeat as needed.

Sample Appointment of Dissertation Committee Memorandum

<DATE>

MEMORANDUM

From: Chair, Computer Science Ph.D. Committee
To: Academic Council

Subj: Appointment of Dissertation Committee

1. <NAME> was accepted into the Computer Science Ph.D. program on <DATE>.

2. The Computer Science Ph.D. Committee requests the following dissertation committee be formed to guide their research.

   <COMMITTEE MEMBERS, their FIELDS OF EXPERTISE, their DEPARTMENT and INSTITUTION AFFILIATIONS>

3. <NAME> will conduct his research in the area of <AREA OF RESEARCH>.

4. To allow <NAME> to more effectively organize a program of study, action on this request is requested at the earliest convenience of the Council.

_____
<Name>
Chair, Computer Science Ph.D. Committee

Copy to:
<Ph.D. Candidate>
<Dissertation Committee Members>

Sample Oral Qualifying Examination Memorandum

<DATE>

MEMORANDUM

From: <NAME> (Chair, Oral Examination Committee for <NAME>)
Code <CODE>, <Department Name>
Naval Postgraduate School
Monterey, CA 93943
Via: <NAME> (Chair, Computer Science Ph.D. Committee)
To: Academic Council
Code O1B, Associate Provost for Instruction
Naval Postgraduate School
Monterey, CA 93943

Subj: Ph.D. Oral Qualifying Examination

1. In accordance with Academic Council Policy, the purpose of this memorandum is to inform the Academic Council of the upcoming Ph.D. Oral Qualifying Examination for my Ph.D. Student, <NAME>.

2. I have arranged for <NAME> Ph.D. Oral Qualifying Examination to be held at <DATE/TIME> in <LOCATION>.

3. We request attendance by a representative of the Academic Council.

4. If you have any question, please give me a call at <PHONE>.

_____
<Name>
<Title>

Copy to:
<Name>, Chair, Ph.D. Committee
<Dissertation Committee Members>
<Council Representative NAME>
<Ph.D. Candidate>

Sample Results of Oral Examination Memorandum

<DATE>

MEMORANDUM

From: Chair, Oral Examination Committee
To: Academic Council, Code O1B
Via: Chair, Computer Science Ph.D. Committee
Subj: Result of Ph.D. Oral Qualifying Examination

1. Results of Dissertation Committee's Ph.D. Oral Qualifying Examination of <S_NAME>.

   <Chair_Name> (Chair): Pass/Fail_____

   <Committee Member>: Pass/Fail_____

   <Committee Member>: Pass/Fail_____

   <Committee Member>: Pass/Fail_____

   <Committee Member>: Pass/Fail_____

2. As Chairman of the Ph.D. Dissertation Committee, I am hereby informing the Academic Council of the Dissertation Committee's decision to pass ( )/fail ( ) <S_NAME> on the Ph.D. Oral Qualifying Examination.

_____
<Name>
Chair, Dissertation Committee

Copy to:
<Name> Chair, Dissertation Committee
<Computer Science Curricular Officer>
<Ph.D. Candidate>

Sample Advancement to Candidacy Memorandum

<DATE>

MEMORANDUM

From: Chair, Computer Science Ph.D. Committee
To: Academic Council, Code O1B

Subj: Advancement to Candidacy for <NAME>

1. The dissertation committee has approved the dissertation topic proposed by <NAME>

   <Name> (Dissertation Supervisor): _____

   <Committee Member>: _____

   <Committee Member>: _____

   <Committee Member>: _____

   <Committee Member>: _____

2. The student completed all the other necessary requirements of Ph.D. Candidacy as outlined by the Academic Council and Department of Computer Science. I consequently recommend <NAME> to be advanced to candidacy at this time.

_____
<Name>
Chair, Computer Science Ph.D. Committee

Copy to:
<Name> Chair, Dissertation Committee
<Ph.D. Candidate>

Sample Dissertation Defense Memorandum

<DATE>

MEMORANDUM

From: Chair, Dissertation Committee
Via: <Name>, Chair, Computer Science Ph.D. Committee
To: Academic Council, Code O1B

Subj: Dissertation Defense for <NAME>

1. The Dissertation Committee has received a draft dissertation and determined that <NAME> is ready for a dissertation defense.

   <Name> (Dissertation Supervisor): Agree/Disagree_____

   <Committee Member>: Agree/Disagree_____

   <Committee Member>: Agree/Disagree_____

   <Committee Member>: Agree/Disagree_____

   <Committee Member>: Agree/Disagree_____

2. <NAME> will appear before the Dissertation Committee on <DATE> at <TIME> in <LOCATION> to defense his/her doctoral dissertation entitled "<TITLE>"

3. We request attendance by a representative of the Academic Council.

_____
<Name>
Chair, Dissertation Committee

Copy to:
Associate Provost for Instruction, Code 01B
<Dissertation Committee members>
<Computer Science Faculty>
<Ph.D. Candidate>

Sample Results of Dissertation Defense Memorandum

<DATE>

MEMORANDUM

From: Chair, Computer Science Ph.D. Committee
To: Academic Council, Code O1B

Subj: Results of Dissertation Defense

1. <NAME> has successfully completed all the requirements for a Ph.D. in Computer Science. His dissertation entitled: "<TITLE>" was successfully defended before this committee on <DATE OF DEFENSE>.

_____
<Name>
<Title>
Chair, Dissertation Committee

_____
< Committee Member >
<Title>

_____
<Committee Member>
<Title>

_____
<Committee Member>
<Title>

_____
<Committee Member>
<Title>

2. This committee nominates <NAME> for the degree, Doctor of Philosophy in Computer Science.

_____
<Name>
Chair, Computer Science PhD Committee

Copy to:
Dissertation Committee
Chair, Computer Science
Chair, Computer Science Ph.D. Committee

Sample Graduation Deadline Extension Memorandum

<DATE>

MEMORANDUM

From: <name and contact info of student>
To: Dr. Doug Moses, Secretary, Academic Council, Code 01B
Via: <name of dissertation committee chair>
Prof. Peter Denning, Chair, Computer Science Department, Code CS
Prof. Peter Purdue, Dean, GSOIS, Code 06

Subj: Petition for extension of graduation deadline

<State the period of extension and the justification here.>

_____
<Name>

Copy to:
Dissertation Committee
Chair, Computer Science Ph.D. Committee
Chair, Academic Council

Sample Dissertation Committee Appointment Change Memorandum

<DATE>

MEMORANDUM

From: Chair, Computer Science Ph.D. Committee
To: Chair, Academic Council Doctoral Committee, Code O1B

Subj: Dissertation Committee Appointment Change

<State the requested changes and provide justifications here.>

_____

<Name>
Chair, Computer Science Ph.D. Committee

Copy to:
<Name> Chair, Dissertation Committee
Dissertation Committee members
<Ph.D. Candidate>