



**Halmos College of Natural
Sciences and Oceanography**

**Halmos College of Natural Sciences and
Oceanography (HCNSO)**

Directions for the Capstone Track Student

This publication is designed to help students through the various stages of their master’s degree. For full requirements, please consult the Catalog at

<http://www.nova.edu/ocean/academics/course-catalog/index.html>

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NSU HCNSO Guidelines to the Capstone Student

1. Definition of the Capstone paper

A capstone paper is a scholarly manuscript, based upon a comprehensive literature search, review, and synthesis of the chosen topic. It is similar to a thesis, inasmuch as data need to be acquired and analyzed within the framework of a scholarly article with the exception that these data can be acquired from the literature. A comprehensive literature search is expected and students are encouraged (where appropriate) to talk with workers actively engaged in research relevant to the topic. In this way, students can obtain current information for inclusion for their capstone and also demonstrate their ability to explore datasets. The capstone is bound like a thesis using the Oceanography Library approved cover (see Center librarian) and should be presented in good word processed laser-printed quality. One hard-bound copy is required for the library; the other copies will be kept electronically. The paper should contain at minimum:

- Title page
- Table of Contents (detailed outline, using outline headings in text, same format)
 1. Introduction
 2. Statement of Purpose or Objectives
 3. Methods
 4. Results or Review
 5. Summary and Conclusions
 6. References

Before starting a capstone, students should read some of the completed capstone papers in the Oceanography Library. After choosing a topic, students must check that the subject area is novel and has not been dealt with by a previous capstone. A list of all capstones completed is available in the graduate student office. There are no set guidelines on length, but most capstone papers are around 50 pages in length (excluding tables and figures).

2. Course Schedule – What to take for courses

a. Timelines (Single and Joint Majors)

All majors are required to take five core classes:

- Biostatistics (I or II)
- Marine Chemistry
- Marine Ecosystems
- Marine Geology
- Concepts of Physical Oceanography

i. Single Major Capstone

Single major students, those taking either marine biology, coastal zone management, OR marine environmental sciences must have the following course requirements (minimum of 45 Credits):

- 5 Core Courses
- 8 Elective Courses (either OCMB, CZMT, BMME, or MEVS)¹
- Directed Independent Study (DIS) for developing proposal
- 6 Capstone Credits (minimum)

¹ Students are allowed to take 2 courses outside of their major focus. For example, a marine biology major can take two CZM courses as part of their 8 electives. The exception is the biological science

The following is a recommended timeline for the single major capstone student:²

YEAR 1

Session	1	2	3	4	5
	Core 1 Elective 1	Elective 2	Core 2 Core 3	Elective 3	Core 4 Elective 4
	SELECT PROFESSOR/ ADVISOR		LIBRARY SEARCH & PROPOSAL		

YEAR 2

Session	1	2	3	4	5
	Core 5 Elective 5 CAPSTONE Project	Elective 6 CAPSTONE Project (1 credit)	Elective 7 Elective 8 CAPSTONE Project		

ii. Joint Major Capstone

Joint major students, those taking a two of the three majors (marine biology, coastal zone management, or marine environmental sciences), must have the following course requirements (57 Credits):

- 5 Core Courses
- 12 Elective Courses (chosen from 2 of the 3 specialties)
- 6 Capstone Credits (minimum)

The following is a recommended timeline for the joint major capstone student:³

YEAR 1

Session	1	2	3	4	5
	Core 1 Elective 1	Elective 2	Core 2 Core 3	Elective 3	Core 4 Elective 4
	SELECT PROFESSOR/ ADVISOR		LIBRARY SEARCH & PROPOSAL		

YEAR 2

Session	1	2	3	4	5
	Core 5 Elective 5	Elective 6 Elective 7	Elective 8 Elective 9 CAPSTONE Project	Elective 10 CAPSTONE Project (1 Credit)	Elective 11 Elective 12 CAPSTONE Project

² Alternately, students with busy day jobs may opt to move through the program at a more relaxed pace. Note, to be eligible for federal financial aid, a student must be registered for one 3 credit course each session. International students must register for a minimum of 6 course credits or 3 capstone credits each session.

³Footnotes 1 & 2 also apply to the joint capstone major.
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3. Selecting a Major Professor

The selection of a major professor should normally take place about nine months into the program. The explicit procedure is that the student approaches a potential major professor with their ideas about a capstone project. If the professor agrees to serve as advisor, the student must write a proposal and choose a second committee member.⁴

4. Choosing a committee

The capstone committee must consist of at least two Halmos College of Natural Sciences and Oceanography (HCNSO) faculty members. Occasionally an adjunct professor can substitute for one of the HCNSO faculty, but this is at the discretion of the Program Director.

5. Writing the Proposal

The proposal is a demonstration by the student and the involved faculty that the student is indeed ready to produce a thesis that will allow graduation according to the standards of Halmos College of Natural Sciences and Oceanography (HCNSO). This forms the basis of an understanding that the faculty involved (including the head of department, who has final signing authority) will allow graduation if the student produces a document with agreed-upon quality and content. To avoid unpleasant surprises and undue delays to a student's graduation, a proposal is only acceptable once it demonstrates, in all matters, that the student will indeed be able to produce the thesis/capstone and meet the high quality criteria required by the department. Fairness to student and committee as well as maintenance of academic integrity is the utmost concern here. A proposal will not be accepted if the style, presentation, and content are not to the quality as would be accepted in the thesis. This because it may give the student a wrong impression of what is acceptable as a thesis – leading ultimately to unnecessary delays at submission stage. Therefore, the proposal should be seen as a “mini-thesis” that is at the same stage the blue-print for the work that will be done in the thesis. Thinking about methods, familiarity with data that need to be analyzed, thorough knowledge of the literature, etc, are not to be delayed until the thesis writing-stage, but must have been brought to fruition already at proposal stage and the proposal will be evaluated as such. This is the only way that can assure full awareness of faculty and student of what content exactly is expected. A thesis proposal must therefore be as well thought out and perfect in format and style, and understanding of work-flow, as the thesis will be expected to be.

There are no firm guidelines about a proposal (this will be dictated by the supervisor), however, the proposal normally consists of the following elements:

- Title of the proposed capstone paper
- An introduction to the topic to be reviewed
- Statement of the significance of the work
- An outline of how the paper will be organized (i.e. proposed chapters and subject areas) showing evidence of a preliminary literature review
- References/Bibliography (Literature cited and literature to be reviewed)(at least 50 citations are recommended, significantly less and the topic may not warrant review)

Develop the topic.

The student should develop their project by discussing options with faculty. The major professor is a source of ideas, help, and direction as is the Director of Academic Programs. But, the student must take the project beyond the conceptual stage, by doing library readings before formulating a proposal.

⁴ A proposal (approved by both committee members) is required to be submitted to the graduate program office before a student can register for capstone credits.

Write the proposal.

Start in the library. The student should review the current literature to determine how the problem relates to previous work and to assess its feasibility and significance. For a literature review, the student should obtain an idea of the quantity of information available (breadth of topic) and any previous reviews of the subject. For the proposal, the review should be thorough but does not need to be fully and completely developed. Any proposal submitted without evidence of a literature search will probably be rejected out of hand, as well as a proposal that is poorly written. Ultimately, acceptance or rejection of the proposal is at the discretion of the committee.

6. Acceptance of Proposal

The major professor and committee member will review a proposal draft. The student may meet and discuss issues with the professor and committee. The committee members make a final decision as to whether the proposal is defensible and sign a cover sheet (signature page) available on the website (<http://cnso.nova.edu/forms/approval-for-capstone-proposal.pdf>). The student must then submit a copy of the approved proposal and its signature page to the program office before registering for capstone credits.

7. Registering for Capstone Credits

Once the proposal is accepted by the committee and submitted to the program office, the student may register for capstone credits in the next session. Students must register under their major professor's section code. If the student does not know this, ask the program office or look it up on the website under Current Course Offerings: <http://cnso.nova.edu/academics/fall-course-offerings.html>. **Once a student starts registering for capstone credits, they cannot stop registering for credits until the capstone is completed and defended. Only in exceptional circumstances (at the discretion of the director) will a leave of absence be granted.**

Students must register for at least two consecutive sessions of capstone, for a total of 6 credits. The student should be ready to defend at this time. If the student's committee states that the capstone is not defensible, the student must register for additional capstone credits until the committee is satisfied.⁵

8. Final Exam- The Assessment of Learning Outcomes (the Rubric Exam)

Prior to graduation all Masters' students must take a pass/fail test on the learning outcomes of their program (i.e. MB, CZM, MES, BS, MA). Students failing the test will be required to retake it prior to graduation; the test may be retaken multiple times. After finishing all coursework and prior to the oral defense of thesis or capstone the student will take a closed-book written test. Students may schedule the exam online at <http://nsuoc.wufoo.com/forms/rubric-schedule-request>. Once information is submitted the student will receive a confirmation email with a link to the calendar of available times for the rubric exam.

The questions will concern general knowledge (specifically, the material learned in all 5 CORE courses and 5 of the 8 electives) and will be directed at the learning outcomes of the individual courses.

⁵ Students intending to defend in the second session *must* allow for time for revisions and changes demanded by the committee. Most capstones require about two months of "fine-tuning". Do *not* expect to submit a draft to your committee and defend a few weeks later.

9. Report of Progress (Progress reports)

This report is required from each student registered for directed independent study or capstone credits by the end of each term of registration. The completed report is turned into the Program Office by the student's advisor. The form is available online at: <http://www.nova.edu/ocean/tools-resources/student-forms.html#progress-report>

The report will include the following information:

- Student's name and date
- A brief narrative synopsis of work completed since the last report – for example, details of experiments conducted and literature reviewed.
- Target date for dissertation completion
- Estimate of time spent on dissertation work this term
- A list of problems experienced (if any)
- Major professor's comments
- Major professor's signature

10. Defending the Capstone

On completion of the capstone paper to the major professor's satisfaction, it is formally submitted to the other committee member. Once the committee is satisfied the defensible copy must be submitted to the program office for final acceptance. This includes an electronic copy and a cover sheet signed by all committee members. This can be found under Student Forms on the Halmos College of Natural Sciences and Oceanography's website at: <http://cnso.nova.edu/forms/approval-for-capstone-defense.pdf>

The capstone defense will consist of an open defense. For the defense, requirements include a 30- to 50-minute oral presentation (with appropriate visual aids) to the faculty, student body, and other interested persons. The committee then will question the candidate in private on the capstone work and related aspects. This private session is closed and limited to the candidate, members of the committee, and interested faculty members. The committee then takes a vote in closed session. The capstone paper may be accepted, accepted with revision, or rejected.

The Halmos College of Natural Sciences and Oceanography faculty ultimately must pass on acceptability. The student should consult frequently with the committee during all phases of capstone work for continuity and in order to avoid problems during the formal defense. If the paper is not acceptable, the student receives the grade of "F" for the course. If the paper and defense are acceptable, the student receives a grade of "P". If the paper is acceptable, but requires only minor corrections, the student will receive a grade of "P" when the corrected paper is accepted.

All MS capstone paper defenses must be scheduled at least one week in advance through the Program Office. Notice will be provided to the faculty and student body. At least one week prior to scheduled capstone paper defenses, a copy of the work *with its approval page (Appendix 2)* must be submitted to and reside in the program office. This defensible copy must be complete, including, for example, all relevant materials, appendices, figures, and data tables (where appropriate, figures and tables should be incorporated into the text). The copy (or reproductions thereof) will be available for review to any interested faculty member. The capstone must be considered at least 95% complete, or it will not be acceptable for defense. *If the defensible copy is not submitted in time, the defense will be rescheduled.* Once the defensible copy is submitted, additional revisions should not be made or circulated prior to the defense.

11. Timeline

To Recap: when preparing for a defense, the student must complete the following timeline:

- The student's committee must agree that the capstone is defensible (>95% complete)
- The student must coordinate a defense date between their committee and the program office
- A defensible copy of the capstone must be submitted to the Program Office not later than one week prior to the set defense date
- The student must present a 30 to 50 minute oral presentation, complete with visual aids for the committee, faculty, staff, students and other interested parties
- The student and committee meet in a closed session for the final section of the defense

12. The Final Chapter – how to finish and exit the program

a. Final Submission

At least three signed final copies of the successfully defended capstone paper must be submitted in correct form to the Oceanography librarian for binding. The cost of binding is the student's responsibility. One bound copy is normally presented to the supervising professor, one copy is lodged in the graduate student office, and one copy resides in the library. An electronic copy and a list of keywords are also required by the library. The student may submit additional personal copies for binding. To avoid additional tuition, the final capstone must be submitted to the program office *within four weeks* of the oral defense. Capstones with major revisions after the oral defense will be required to register for an additional term.

b. Printing requirements

A left-hand margin of one-and-a-half inches is essential. Final copies of capstones with a left-hand margin less than one-and-a-half inches will be rejected. This is necessary to prevent loss of text during binding. All other margins should be one inch. Word processing should be neat and clean and laser-printed. Inkjet printing is unacceptable. Color images should be printed on a laser color printer. For the final copies, paper must be of good quality, 20 pound, 25 percent cotton (rag) bond (fine business paper). More information can be found in the [Oceanography library guide](#).

c. Sample Cover and Approval Sheets

Students should follow the sample title and approval sheets from the attached appendix (Appendix 1 and 2) or from the library or the program office. These approval sheets, or signature pages, must be on the same quality paper as the capstone. All of the copies submitted to the library, program office and major professor must have original signatures.

d. Application for Degree/Conferral

Once the student has turned in the capstone for binding, they are ready to complete the degree. Please take a moment to review your name, address, and telephone number in WebSTAR to ensure that we have the correct information on file should we need to contact you in the future. Make any corrections to your address and telephone number while in WebSTAR.

It is important that you also view your online transcript (i.e., degree, major, grades, etcetera) while in WebSTAR. Should you find any discrepancies, please notify us immediately by sending an email to: missy@nova.edu.

As part of this process, you should review your account to ensure there are not holds and/or outstanding balances. This will expedite the degree conferral process, and as such, facilitate smoother processing on your behalf.

Once everything is correct in WebSTAR, you need to submit your application for degree. Please go to <https://www.nova.edu/sbin/degreeapp/> and fill out the online form (see Appendix 3 for sample).

The last step in the application degree process is to remit payment (\$100). Once the information on the Degree Application Request form is completed and submitted online, there will be a link given to go to for payment. No degree will be conferred until payment is received and all financial obligations have been met.

Once the online form is complete, a survey will be sent to the student via email. Students must return any Halmos College of Natural Sciences and Oceanography (HCNSO) keys. The student must also make sure all books have been returned to the library. Any incomplete items will result in a delay in conferment of the degree.

Once all of the above has been satisfied, the diploma will be conferred at the end of the month, and will be mailed to the student within 2 months.

Appendix 1. Sample Cover

HALMOS COLLEGE OF NATURAL SCIENCES AND OCEANOGRAPHY

TITLE

By

Name of Student

Submitted to the Faculty of
Halmos College of Natural Sciences and Oceanography
in partial fulfillment of the requirements for
the degree of Master of Science with a specialty in:

Your Major Here

Nova Southeastern University

Date

Appendix 2. Sample Signature Page

A Capstone Paper

Submitted in Partial Fulfillment of the Requirements for the Degree of

Masters of Science:

Insert Major here

INSERT NAME HERE

Nova Southeastern University

Halmos College of Natural Sciences and Oceanography

Month Year

Capstone Committee Approval

Dr. *** ***, Major Professor

Dr. *** ***, Committee Member

Appendix 3. Screen shot of application for degree Degree/Diploma Application for: Your Name here

Required fields marked with an asterisk (*).

Degree Major:*	<input type="text" value="Master of Science (OS) Coastal Zone Management"/>
Minor:	<input type="text"/>
Concentration:	<input type="text"/>
2nd Major:	<input type="text"/>
2nd Minor:	<input type="text"/>
2nd Concentration:	<input type="text"/>
Daytime Phone #:*	<input type="text"/>
(Include Area/International Code)	

In the space below, type your name EXACTLY as you want it to appear on your diploma.*

(First, Middle, Last Name, Suffix)

NOTE: *If your name contains a special character (for example, é,ü, etc) this system will not accommodate the inclusion of them. As such, please send an email to us (diplomas@nova.edu) indicating the special characters that should appear in your name in addition to completing this application.*

Please indicate the address where your diploma is to be mailed (NO P.O. Box)

Address Line 1:*	<input type="text"/>
Address Line 2:	<input type="text"/>
City:*	<input type="text"/>
State:*(U.S.Addresses)	<input type="text" value="Florida"/>
Province (Non U.S.addresses):	<input type="text"/>
Country:	<input type="text" value="Antigua & Barbuda"/>
Zip/Postal Code:*	<input type="text"/>
Phone #:	<input type="text"/>

Please verify that all information is accurate and correct prior to clicking the "Submit Request" button.

<input type="button" value="Submit Request"/>	<input type="button" value="Reset Form"/>
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