

GRADUATE STUDIES PROGRAM GUIDE

School of Marine Science
Virginia Institute of Marine Science
College of William and Mary

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I. INTRODUCTION

This Guide is intended to supplement the graduate catalog of the School of Marine Science and to serve as a working reference for students and their advisors in the School's graduate studies program. The Guide provides brief descriptions of the provisions and requirements that are associated with the student's career as a graduate student. The Guide also contains examples of forms necessary to effect the provisions and requirements and to document a student's progress and achievements in the course of their career.

The material contained in the Guide is a compilation of current information available from the most recent graduate catalog, administrative policy/procedure memos and Academic Council minutes. (The dates of administrative or Academic Council action on a given policy are noted in parentheses throughout the Guide.) Because this material will be updated as needed, students or advisors should consult with the Office of the Dean of Graduate Studies periodically for the most recent revisions.

Some of the information contained in this Guide is not a matter of policy. Specifically, the guidelines for preparation of a Prospectus are simply suggestions that may be modified by individual faculty members. Students should consult with their advisors to achieve a clear understanding of what will be expected of them.

Scheduling forms may be printed directly from this book by clicking on the name of the form wherever "Applicable forms" are listed in this Guide.

II. GRADUATE PROGRAM REQUIREMENTS AND PROVISIONS

A. GRADUATE PROGRAM DESCRIPTION

By the end of a student's second year in the School, he/she must either be granted an exemption from or have passed core courses, MS 501, 501L, MS 502, MS 504, and MS 505.

Additional courses are required as follows:

- Students in Biological Sciences: MS 526
- Students in Coastal and Ocean Policy: MS 542, MS 690, MS 691 and distribution requirements as specified by the department.
- Students in Environmental Sciences: M.S. students must take a minimum of two (2) and Ph.D. students must take a minimum of four (4) of the following courses: MS 563, MS 564, MS 565, MS 566, MS 573, MS 638, MS 640 AND MS 641.
- Students in Fisheries Science: MS528 and one of the following: MS 625, MS 667, 670, or MS 672
- Students in Physical Sciences: Students must take one course in his or her discipline as follows:

Physical Oceanography: MS 520

Geological Oceanography: MS 522

Marine Chemistry: MS 524

In addition, all students in Physical Sciences must take at least one advanced course (550-level or higher) appropriate to the student's specialty (marine chemists must include MS 555)

- Students should check with their major advisor to determine additional required courses for their discipline.

Degree credit is granted only for coursework in which a student earns a grade of "C" or above. A graduate student may repeat one course outside the core curriculum in which a grade of "C" or lower is received. The grade earned initially remains a part of the student's record and is included in computations of quality point requirements. Any student receiving more than one "D" or "F" in a program of study will not be permitted to continue in the School of Marine Science. (16 May 90)

Master of Science Program Students

At least one year of each student's program must be spent as a full-time resident student as defined in the general degree requirements in the current catalog.

At least thirty-six (36) semester credits of advanced work, of which at least 9 hours must have been earned in courses numbered 550 or above, with a grade average of 3.0 or better, are required for the M.S. degree. In addition, a student must have registered for thesis credit (MS 599) for at least one semester (the student may have repeated this registration). No more than six hours of thesis credit may be counted toward the minimum 36 hours required for the M.S.

Credits more than seven (7) years old and earned in the program in which the student is currently enrolled will be deleted from the accumulation of credits required for a degree. Credits acquired while enrolled in previous programs here or elsewhere generally are not be subject to this limitation.

Doctor of Philosophy Program Students

A minimum of three years of graduate study beyond the baccalaureate is required. At least one academic year must be or have been spent in residence as a full-time Master of Science or Doctor of Philosophy student of the College of William and Mary at either the Williamsburg or the Gloucester Point campus, or both, as defined in the general requirements. (21 May 86)

At least 42 credit hours of advanced work, of which at least 15 credit hours must have been earned in courses numbered 550 or above with a grade point average of 3.0 or better, are required for the Ph.D. degree. In addition, a student must have registered for dissertation (MS 699) at least one semester. At least 9 but no more than 12 dissertation credits may be counted toward the minimum 42 credits for the Ph.D. degree.

Credits more than seven (7) years old and earned in the program in which the student is currently enrolled will be deleted from the accumulation of credits required for a degree. Credits acquired while enrolled in previous programs here or elsewhere generally are not subject to this limitation.

B. RESIDENCY AND REGISTRATION REQUIREMENTS

General

Students generally are bound by the requirements stated in the School of Marine Science graduate catalog which is in effect when they enter the School. The following are the minimum requirements. The separate disciplines and individual advisory committees may prescribe additional requirements for their students.

Residency

To fulfill the full-time academic residency requirement of the School of Marine Science, students must:

1. Successfully complete the core course requirements;
2. Be a full-time student in good standing for two consecutive semesters.

Registration Requirement

All active students (i.e. those working toward completion of a degree program who have not been granted leave) are expected to be full-time students, that is, registered for a minimum of nine (9) credit hours each semester during the academic year, and one (1) credit hour for each term of the Summer session. Students must be registered in the semester during which they graduate.

Through permission of the Dean of Graduate Studies upon favorable recommendation of the Academic Status & Degrees committee, students may be allowed a single semester of Research Graduate Status. Students in RG Status are allowed to pay part-time tuition (3-credit minimum) in their final semester (i.e., the semester in which they complete their thesis/dissertation and graduate).

C. EXEMPTION FROM REQUIRED COURSES

General

Students may petition for exemption from any of the required core courses (MS501 L, MS502, MS504, MS505) if they have already completed similar studies elsewhere. Because examinations and final grades in these courses form the basis for the comprehensive examination requirements, grades from other schools must be B or higher. However, to fulfill the comprehensive examination requirement, the student may be required to pass the final examination in MS501 and/or MS502, or pass a comprehensive examination. Unlike the other core courses, exemption from modules of MS501 (physical, chemical, geological and biological oceanography) requires the student to successfully pass an examination for each pertinent module.

Core Courses MSS01L, MS502, MSS04, MSS05

The petition for exemption must be sent to the Academic Status and Degrees Committee c/o the Graduate Registrar, Watermen's Hall 233. With the exception of MS501L, the petition must include documentation of course work elsewhere that is to supplant the core course(s) and a statement from each School of Marine Science faculty teaching a course for which exemption is sought. The faculty member's statement must indicate that he/she has reviewed the student's previous studies and is satisfied that those studies are sufficient to permit exemption from the core requirement. Because of the unique character of these courses, the exempted student may want to audit or take some or all of the courses.

Core Course MSS01 Modules

Incoming students who have had comparable coursework in one or more of the four sub-disciplines of this course (biological, chemical, geological and physical oceanography) may take a Bypass Examination to place out of the respective module which covers that subject in the course. If all modules are by-passed, then the student will be exempted from the course in its entirety. Should one or more module be required, the student will need to complete the interdisciplinary portion of the course in addition to the required module(s). This will be accomplished by attending lectures and passing examination sections pertaining to the required modules and interdisciplinary sections.

Prior to taking the Bypass Examination, the student can review course materials for MS501 using the web-based CourseInfo[®] software. Typically, the Bypass Examination is a comprehensive examination designed to test the overall knowledge of the student, and the student's ability to write clearly and synthesize information. As this course is designed to be an interdisciplinary synthesis course (6 credit hours) and to serve as a *de facto* comprehensive exam, the Bypass Examination for each subject module can be expected to be a rigorous examination of the student's knowledge of the area.

A Bypass Examination is a written one and is administered by the instructor of that module. It will be given in August approximately one week prior to the start of the class. The student is required to contact the Dean of Graduate Studies by August 14 to request the examination. Results will be available before the beginning of the class to allow students to prepare his or her final class schedule.

Applicable Form(s): Application for Core Course Exemption

D. TRANSFER OF ACADEMIC CREDIT

On the recommendation of the Academic Status and Degrees Committee and the approval of the Dean of Graduate Studies, a regular student may apply up to 15 hours of graduate credit for courses equivalent to the SMS core courses (MS 501-505) earned at another accredited institution. Command of material in MS 501-505 must still be demonstrated. Incoming students can petition for up to six hours of other graduate work not already applied toward another degree, but the total transfer cannot exceed 15 hours. The credits must have been earned in courses appropriate to the student's program in the School and must fall within the time specified by the general college requirements for degrees. Credit may be transferred only for courses in which the student received a grade of "B" or better and may not be counted in compiling his or her quality point average at William and Mary. (22 June 99)

Applicable Form(s): *Application for Transfer of Academic Credit*

E. WITHDRAWAL FROM COURSES

A student who desires to withdraw from a course should apply to the Office of the Dean of Graduate Studies. If the withdrawal occurs before mid-semester, a grade of “W” will be automatically assigned for each course for which the student is registered. If the withdrawal occurs after the end of the 10th week of classes (mid-semester), the student will be awarded a “W” or “F” by the instructor of each course for which the student is registered, depending upon the student’s grade at the time of withdrawal. (16 May 90)

A student wishing to withdraw from a course (or courses) because of medical reasons after mid-semester may apply to the Academic Status and Degrees Committee for approval. If the Committee verifies the legitimacy of the medical reason for withdrawal, grades of “W” will appear on the transcript. (16 May 90)

Applicable Form(s): *Change in Graduate Student’s Registration*

F. BYPASS OF MASTER OF SCIENCE DEGREE

A superior student originally accepted to the master's program may petition for permission to bypass the Master of Science degree and proceed directly toward the doctorate. The petition, which should be submitted to the Academic Status and Degrees Committee, may not be submitted until the following minimum requirements have been met.

- Completion of the core course requirements for the M.S. (501, 501L, 502, 504, 505) degree and any courses required by the student's department with a grade point average of at least 3.5.
- Submission of a statement by the student's advisor of the student's **achievements and demonstrated potential** to conduct independent research.
- Acceptance by the student's Advisory Committee of a draft of the prospectus for the student's intended doctoral research.
- Recommendation by the student's Advisory Committee to bypass the Master's degree.

The Academic Status and Degrees Committee will recommend to the Dean of Graduate Studies whether or not permission to bypass should be granted. Appeals of an adverse decision of the Academic Status and Degrees Committee may be made in accordance with the procedures as set forth in the Bylaws of the School of Marine Science. It is important that a student submit the bypass form in a timely fashion; typically, no later than the start of the third year.

In order to apply the doctoral program mileposts equitably, the Academic Status and Degrees Committee will determine an "effective completion date" of the doctoral program, which normally will be designated as 72 months from date of matriculating at SMS/VIMS.

Applicable Form(s): *Application to Bypass Master of Arts Degree*

G. TIME LIMITS FOR DEGREE PROGRAM

All requirements for the Master of Science degree must be completed within three (3) calendar years after commencing graduate study. For the Doctor of Philosophy degree, all requirements should be completed within four (4) to six (6) calendar years after commencing study for the degree, the required time depending on the previous degree and experience of the candidate. (Refer to time limits table below.) (AC 29 September 1993)

Time Limits for Completion of Degree Work

Master of Arts

36 months

Doctor of Philosophy

48 months --student entered with SMS/VIMS Master's degree

60 months--student entered with M.A. or M.S. degree

72 months--student entered with B.A. or B.S. degree

Time Extension

Extensions of the time limits for completion of degree requirements can be obtained in exceptional cases by petitioning the Committee on Academic Status and Degrees. Upon favorable recommendation of that Committee the Dean of Graduate Studies may grant an extension. Students who have exceeded their time limits for completion of their degree programs and who are not on approved time extensions will not be allowed to register in the School of Marine Science. (20 November 85)

Applications for time extensions should include: 1) explanation of the necessity for an extension; 2) letter from the student's advisor; 3) endorsement of the student's Advisory Committee; and 4) a time table for completion of the degree. The time table for completion should identify specific steps that can be judged by the student's Advisory Committee and/or the Academic Status and Degrees Committee.

As a matter of practice, only six-month time extensions are recommended by the Academic Status and Degrees Committee, even when longer periods of time are needed to complete degree requirements. Subsequent extensions will normally be granted only if identifiable progress, in conformance with the time table, is accomplished and if the request is endorsed by the student's Advisory Committee.

Applicable Forms: *Application for Extension of Time Limit for Degree Program*

H. LEAVE OF ABSENCE

A student may request a leave of absence from the program for a specific period of time. Leaves of absence will relieve the student of the obligation of paying tuition while still remaining as a student in good standing. Normally leaves of absence are granted for up to one year, although in some circumstances these can be extended. A student must terminate the leave of absence and be a registered student in the semester he/she completes degree requirements or graduates. (16 May 90)

It is understood that a student on a leave of absence will not be present at the Virginia Institute of Marine Science, utilizing any of the facilities, or requiring any faculty involvement in his/her activities.

A leave of absence does not extend the time limit for completion of degree requirements. The “clock continues to run” throughout the leave.

Students applying for a leave of absence must obtain appropriate faculty signatures on an Application for Leave of Absence form and return it to the Dean of Graduate Studies. Once the leave is approved, the student must obtain signatures on the Student Check-Out Sheet to ensure proper documentation of his or her absence from the School.

Applicable Forms: *Application for Leave of Absence*
 Student Check-Out Sheet (2 pages)

I. WITHDRAWAL FROM THE PROGRAM

Withdrawal from the program constitutes termination of the student's program of study in the School of Marine Science. Withdrawal may be voluntary on the part of the student or be imposed by the School of Marine Science for reasons of academic deficiency. A student who fails to register for a regular semester (fall or spring) once the student has begun his/her graduate study, and who has not requested a leave of absence or permission to withdraw, will be placed on a leave of absence for one semester by the Dean of Graduate Studies. If the student has not applied for a leave of absence prior to the end of registration for the next regular semester, or if the Dean of Graduate Studies is not able to justify continuing the leave of absence, the student's record will be marked withdrawn unofficially.

Students withdrawing from the program should obtain appropriate faculty signatures on a "Change in Graduate Student's Registration" form and a "Student Check-out Sheet". Both forms should be returned to the Dean of Graduate Studies.

Reinstatement After Withdrawal

A student wishing reinstatement after withdrawal must reapply to the School of Marine Science under the procedures in effect at the time of reapplication.

Applicable Form(s): *Change in Graduate Student's Registration*
Student Check-Out Sheet

III. GRADUATE STUDENT STATUS

A. REGULAR AND PROVISIONAL GRADUATE STUDENTS

Students may be admitted to the Master's or Doctoral program as either regular or provisional graduate students. A student must be a regular student to graduate.

Provisional students are entered in a degree program but have deficiencies in their undergraduate programs which disqualify them as regular graduate students. A provisional student may petition the Academic Status and Degrees Committee for regular student status after successful completion of those requirements stipulated in his/her notification of admission. Graduate credit earned by a provisional student will be applied toward the graduate degree upon conversion to regular student status. Time limits toward graduation become effective when the provisional student begins course work.

Application for change of status should be on the appropriate form and have the endorsement of the student's major professor or interim advisor.

Applicable Form(s): *Application for Change of Student Status*

B. RESEARCH GRADUATE STUDENT STATUS

Upon the recommendation of a student's major professor, advisory committee, and the Academic Status and Degrees Committee, the Dean of Graduate Studies may approve a student obtaining Research Graduate Status **for a single semester**. This generally would be the semester in which the student completes the thesis and graduates.

The following conditions must be met:

1. The student has completed all required coursework.
2. The student is not employed significantly in any activity other than research and writing in fulfillment of degree requirements.
3. The student is present on the campus or is engaged in approved field work related to his or her thesis or dissertation.

While classified as a Research Graduate Status, a student may register for a maximum of 9 credits of thesis or dissertation per regular semester upon payment of the part-time rate for only three credit hours of thesis/dissertation. The student may elect to utilize up to two (2) of the three paid credits hours for formal course work.

A Research Graduate student may register for additional course credit only upon payment of the generally applicable additional part-time tuition.

A Research Graduate student is eligible for services (e.g., student health and athletic events) only if required fees are paid.

Students who are approved for RG Status should check with the SMS Registrar about proper registration procedures.

Applicable Form(s): *Application for Research Graduate Student Status for Final Semester of Enrollment*

IV. FINANCIAL AID AND TUITION INFORMATION

A. DESCRIPTION OF FINANCIAL AID PROGRAM

Financial aid in the form of graduate research assistantships, teaching assistantships, workshops and fellowships is made available to a large portion of the student body. An important aspect of the School of Marine Science financial aid program is to provide experiences that are important to the professional training of marine scientists while at the same time ensuring that such experience does not substantially compromise their educational program toward completion of the degree.

The graduate research assistantship and fellowships permit students to give part-time (i.e. twenty hours per week) assistance to the conduct of a faculty member's research that may (or may not) be used as a basis for their own thesis or dissertation research. Fellowships are awarded for one year, and renewable for an additional two (2) years upon satisfactory academic progress. In addition to providing the same stipend support as for graduate research and teaching assistantships, graduate fellowships provide for a full-time tuition and fee waiver.

Teaching assistantships provide part-time student assistance to the classroom or laboratory activities of SMS faculty. It is generally assumed that the time commitment for all assistantships is approximately the same (i.e. twenty hours per week).

Funding for assistantships is obtained from both state and contract or grant funds. Every effort is made to continue funding once a student has been assigned to an assistantship, but support is not guaranteed throughout a student's tenure. All students on assistantships are eligible for consideration for resident or in-state tuition (see Section IV C, Eligibility of Out-of-State Students for In-State Tuition Rates). Students holding a full-time graduate assistantship may not hold any other employment of a remunerative nature without the advisor's and Dean of Graduate Studies approval.

Graduate workshops are used as a vehicle to allow SMS students to be hired on an hourly basis to satisfy the operational needs of the Virginia Institute of Marine Science. A particular workshop assignment may be recurring but is generally considered to be short-term in duration. A limit of 100 workshop hours is applied to all graduate workshops. This limit is intended to apply to all students holding a full research assistantship or its equivalent. In the case of students not holding a full research assistantship or its equivalent in a given fiscal year, or for those with no financial support from SMS/VIMS, this limitation does not apply. In such cases, the 100 hour workshop limit will be waived, and workshop hours will be adjusted to allow a given student to receive, in a given fiscal year, compensation from the Institute totaling the equivalent of a twelve-month full research assistantship. Students who might qualify for such a waiver must petition the Dean of Graduate Studies for approval.

B. ASSISTANTSHIP TIME LIMITS

No student will be permitted to hold an assistantship indefinitely. Maximum number of months allowed to complete degree requirements are:

36 months	Master of Science
48 months	Doctor of Philosophy --student entered with SMS/VIMS' M.S.
60 months	Doctor of Philosophy --student entered with outside M.A or M.S.
72 months	Doctor of Philosophy --student entered with B.A or B.S.

Students who do not complete degree requirements in the time allowed and who wish to maintain their assistantships beyond these time limits must secure the approval of their major professor and Advisory Committee, and submit a request for a waiver from this role to the Academic Status and Degrees Committee (see page 14).

If recommended by the Academic Status and Degrees Committee, extensions may be approved by the Dean of Graduate Studies.

[NOTE: Assistantship funding includes student support from both general institutional funds and grants/contracts awarded to the institution.

Applicable Form(s): Application for Extension of Time Limit for Degree Program (page 14)

C. ELIGIBILITY OF OUT-OF-STATE STUDENTS FOR IN-STATE TUITION RATES

Students who are residents of the Commonwealth of Virginia pay approximately one-third the tuition of out-of-state students. To obtain legal domiciliary status, a person must be domiciled for at least one year in Virginia. An application and a list of other factors used to determine Virginia domicile are available at <http://www.wm.edu/registrar>. These forms are also available under “tuition helps” in the Current Students’ information on the VIMS website.

The School of Marine Science, following the State Council of Higher Education’s guidelines, permits eligible out-of-state students to pay in-state tuition. Under these guidelines, non-resident graduate students who are employed by the Virginia Institute of Marine Science in the context of having teaching, research, or other graduate assistantships that pay an annual rate of at least \$4,000 or more (at least \$2,000 per semester) are eligible for a waiver of out-of-state tuition. In addition to the eligibility requirements stated in the State Council of Higher Education’s guidelines, the following Institute policy must be reiterated:

1. The privilege is contingent upon the finances of the Institute as well as upon the approval of the Provost of the College of William and Mary. It is granted for only one semester at a time. It may be cancelled or withdrawn at any time the Dean feels it is fiscally responsible to do so.
2. Payment of in-state tuition by out-of-state students is a privilege which must be applied for every semester by the student who wishes to qualify. In order to qualify, a non-resident student of the School of Marine Science must meet the guidelines of the State Council of Higher Education and additional standards set by the School as follows:
 - a. A student must be in good standing academically with a “B” average or better.
 - b. A student must be in good standing financially, having paid all fees and having received no more than the maximum tenure for assistantship support at the beginning of the semester for which a waiver of out-of-state tuition is granted unless an extension of the limit on assistantship support has been obtained from the Academic Status and Degrees Committee. The maximum tenure for assistantship support is three (3) years for a master’s student, four (4) years for a Ph.D. student who entered with a SMS/VIMS’ M.S., five (5) years for a Ph.D. student who entered with an outside master’s degree, and six (6) years for a Ph.D. student who entered with a bachelor’s degree.
3. Before an out-of-state student will be allowed to pay in-state tuition, he or she must have his or her application approved by the Dean or his designee which, in addition to institutional policy, is contingent upon approval by the Provost. (Please use the applicable form, returning it when registration is completed).
4. Students holding fellowships or internships may not be eligible for waivers of out-of-state tuition if (a) funds are provided from non-Institute sources or (b) the research activities carried out under the fellowship or internship are independent of, and unrelated to, the educational activities of the Institute.
5. All faculty should be extremely careful that these policies be adhered to when talking to prospective students or when counseling their own students and make no unqualified promises involving this privilege.

Applicable Form(s): *Application for Privilege of Paying In-State Tuition as an Assistantship Holder*

Application for Virginia In-State Privileges (for students seeking Virginia domicile)

V. PROGRESS WITHIN THE GRADUATE PROGRAM

A. PROGRAM MILESTONES

In addition to course and credit-hour requirements, the student’s timely completion of two major milestones, Acceptance of the Prospectus and Admission to Candidacy, has been adopted by the faculty of the School of Marine Science to represent acceptable progress toward completion of degree work. (AC 29 September 1993)

Milestones	Master of Science		Doctor of Philosophy (entered w/ VIMS M.S.)		Doctor of Philosophy (entered w/ outside M.A./M.S.)		Doctor of Philosophy (entered w/ B.A./B.S.)	
	TIME LIMITS		TIME LIMITS		TIME LIMITS		TIME LIMITS	
	Target	Default	Target	Default	Target	Default	Target	Default
#1								
PRE-QUALIFYING INTERVIEW	12mo	18mo	18mo	24mo	18mo	24mo	18mo	24mo
-Major Advisor Selected								
-Committee Selected/ Research Topic Identified								
#2								
ADMISSION TO CANDIDACY	24mo	36mo	24mo	36mo	36mo	48mo	36mo	48mo
-Core Courses Passed								
-Departmental Courses								
-Pre-qualifying Interview Completed								
-Qualifying Exam Passed/ Prospectus Completed								

Students are expected to complete all degree work within the following time limits established by the faculty:

- 36 months - Master’s candidate
- 48 months - Ph.D. candidate (entered w/SMS/VIMS’ M.S. degree)
- 60 months - Ph.D. candidate (entered w/outside M.A., M.S. degree)
- 72 months - Ph.D. candidate (entered w/B.A., B.S. degree)

Students exceeding these limits must apply to the Academic Status and Degrees Committee. In exceptional cases, if recommended by the Committee, time extensions may be approved by the Dean of Graduate Studies.

The Dean of Graduate Studies monitors the progress of all students. To continue in a degree program, a student must make satisfactory progress towards the degree. If the faculty of a program in which a student is enrolled determines that satisfactory progress is not being made, a student may be required to withdraw because of academic deficiency. A student may appeal a determination of lack of satisfactory progress to the Academic Status and Degrees Committee. (16 May 90)

Academic Probation

A student will be placed on probation for receipt of a grade below C (<2.0) or a cumulative average less than a B (<3.0). In the case of a grade deficiency in a core course, the student must retake the course (see policy below “Retaking a Core Course”) and receive a grade of B- or better, or successfully pass a comprehensive exam. The grade of any retaken course, however, will not be counted in the student’s cumulative average. Probation will last until a student’s cumulative average is raised to at least a B (3.0), and will in no circumstances last longer than one calendar year.

If, during probation, the student receives a grade less than a C (<2.0), receives a semester average less than a B (<3.0), or fails to raise cumulative average to at least a B (3.0), the penalty is automatic dismissal from the School of Marine Science, with the possibility of appeal to the Academic Status and Degrees Committee for reinstatement.

Retaking a Course

Degree credit is granted only for coursework in which a student earns a grade of “C” or above. A graduate student may repeat one course outside of the core curriculum in which a grade of “C” or lower is received; however, the initial grade earned remains a part of the student’s record and is included in computations of quality point requirements. Any student receiving more than one “D” or “F” in a program of study will not be permitted to continue in the School of Marine Science. (16 May 90)

Retaking a Core Course:

In the case of a grade deficiency in a core course, the following policy applies:

1. Students receiving a D or F in a core course must retake the course and receive a grade of B- or better.
2. Students receiving a C+, C or C- may either retake the course or take an exam as defined by a Remedial Plan.
 - a. The remedial plan will be designed and approved by the relevant core course instructor(s), the student’s advisor and the Dean of Graduate Studies.
 - b. The remedial plan will specify the exam or the course-retake option required.
 - c. The exam will be in written form and administered in august of each year, prior to Fall semester.
 - d. The exam will be formulated and graded by the core course instructors and will consist of questions focusing on specific weakness(es) of the student, as determined by the core course instructors and detailed in the remedial plan.
 - e. The plan will be discussed with the student.
 - f. The plan must be approved prior to the Add/Drop deadline of the semester following the unsatisfactory course performance.
4. The student will be on probation until satisfactory completion of the approved remedial plan, but in no case will probation last longer than one year.
5. Failure to satisfactorily complete remedial plan within one year (defined as B- or less in the core course or on the exam) will result in dismissal of the student from the graduate program.

Applicable Form(s): *Milestone Progress Check Sheet*

(13 Sept 00)

1. MAJOR PROFESSOR AND COMMITTEE SELECTION

Master of Science Degree

The Advisory Committee are chosen by the student and approved by the Dean of Graduate Studies must consist of at least **four** members. A majority of the Committee must be members of the faculty of the School of Marine Science, although persons with appropriate qualifications from outside the School of Marine Science may serve on the Committee. In addition, the Committee should provide breadth both within the student's field of study as well as within the larger field of marine sciences. **Students are required to have representation from faculty with strong backgrounds in both the life and physical sciences on each Committee.**

Doctor of Philosophy Degree

The Advisory Committee, chosen by the student and approved by the Dean of Graduate Studies, must consist of at least five members, at least one of whom must be from outside the College of William and Mary. A majority of the Committee's members must be members of the faculty of the School of Marine Science, although persons with appropriate qualifications from outside the School of Marine Science may serve on the Committee. In addition, the Committee should provide breadth both within the student's field of study as well as within the larger field of marine sciences. **Students are required to have representation from faculty with strong backgrounds in both the life and physical sciences on each Committee.**

Applicable Form(s): *Notification of Selection of Major Professor and Declaration of Department*

*Notification of Selection of Advisory Committee (Master of Science)
(Doctor of Philosophy)*

Request for A Change in Advisory Committee

2. PRE-QUALIFYING INTERVIEW

Every student should have a pre-qualifying interview with his/her Advisory Committee prior to his/her qualifying exam. The “interview” provides insight as to the student's thesis/dissertation topic as well as possible background deficiencies (i.e. further courses or reading). The student is made aware of the expectations of his/her Committee regarding prospectus and background knowledge.

The student will be asked to give a 5-10 minute oral presentation describing his/her interests and goals. The Committee will then discuss with the student the requirements to meet these goals. In most cases the interview should not last more than one hour.

The interview is not an exam; one does not pass or fail the interview. Rather, the pre-qualifying interview provides useful information for both the student and the Committee. Recommendations by the Committee will be summarized in writing on the *Pre-Qualifying Interview* form.

Master of Science students should have their pre-qualifying interview before the end of their first year at the School, i.e., before the beginning of their second fall semester. Ph.D. students should have the interview before the end of the second fall semester. In most cases the qualifying exam will be taken within six months after the pre-qualifying interview.

Applicable Form: *Pre-Qualifying Interview*

3. PROSPECTUS

Every student in the School of Marine Science is required to prepare a Thesis or Dissertation Prospectus for approval by his or her Advisory Committee. (17 February 82)

The prospectus should be a formal presentation of the selected research hypothesis. It should include an introduction, literature review, methods section, preliminary results where appropriate and a bibliography. The purpose of the prospectus is to present the rationale for selection of the hypothesis and the methodology to be used in testing the hypothesis. The prospectus will be reviewed by the student's Advisory Committee for: 1) appropriateness to the degree sought; 2) scientific merit; and 3) soundness of the research approach. Eight (8) to fifteen (15) pages is the typical length of a prospectus.

If the prospectus is properly written and if it is accepted by the student's Committee, it should be useable (with minor modifications) as the corresponding sections of the final thesis or dissertation. Care and attention to the preparation of a prospectus will both eliminate misunderstanding between student and Committee about the research project, and significantly reduce the effort required for final preparation of the thesis or dissertation.

Introduction. The introduction should provide a general overview of the field of study in which the research will be conducted. It should identify the current status of the field and indicate how the study hypothesis relates to topics of interest in the field. As appropriate, the introduction should also indicate how the methodology utilized in the study compares to other research efforts in the general field.

In general the introduction should answer the questions "What is the study?" and "Why is this study being done?"

Literature Review. The literature review should be as complete as possible, but need not be exhaustive. The review should establish the background for the selection of both the hypothesis and the methodology. To that end the review should include: 1) significant works that have advanced understanding of the field to its current state; 2) works that identify information needs (particularly ones to be met by the proposed study); 3) results of similar studies on the same or related subjects; 4) examples of all methodologies applicable to the study subject; and 5) works that indicate most appropriate or potential new methodologies for the proposed study.

In general, the review should support the material contained in the introduction and provide the setting (in terms of already available data) for discussion and analysis of the study results. It is important that the literature review be compiled and presented in logical sections (similar to those enumerated above). It is not acceptable to present an abstract of each pertinent reference located without respect to what aspect of the citation is significant (i.e. results, methodology, discussion, etc.).

Most students have some difficulty deciding what should be included in a literature review. While the decision is not always easy, if you concentrate on the purpose of the review and remember an exhaustive annotated bibliography is not the objective, preparation is usually simplified.

Methods. This section should detail both the sampling design and the data analysis. The single greatest problem encountered in the conduct of research projects is the collection of vast quantities of data without definite plans for analysis. The data collected must be pertinent to the hypothesis and must be adequate to test the hypothesis. The sampling program and the data requirements must be flexible enough to accommodate minor unforeseen problems or delays without crippling the project.

Specific attention should be paid to data analysis. Forethought in this area can prevent collection of needless information or failure to collect crucial data. Failure to identify data analysis methods could be a major flaw in a prospectus that would prevent its acceptance.

Bibliography. The bibliography should include all citations from the literature review or elsewhere in the prospectus. It should be prepared in the format required for the thesis or dissertation.

Applicable Form(s): *Notification of Acceptance of Prospectus*

4. QUALIFYING EXAMINATION FOR THE DOCTOR OF PHILOSOPHY DEGREE AND THE MASTER OF SCIENCE DEGREE

Administered by the Student's Advisory Committee, the qualifying examination will be chaired by a moderator who is not a member of the student's Committee. (AC 19 May 95)

The student must satisfactorily demonstrate knowledge of facts and theory in his/her field of specialization and in other subject areas as required by the student's Advisory Committee. It will be advertised and open to any interested faculty members of the College. The exam should be taken well in advance of the student's dissertation defense, usually by the end of the third semester (M.S.) or fourth semester (Ph.D.).

Announcement of the Exam

Announcement of the examination should be made to the faculty two (2) weeks prior to the examination date. The Dean of Graduate Studies' office will prepare and distribute the announcement.

Applicable Form(s): *Scheduling of Qualifying Examination*
Announcement of Qualifying Examination
Qualifying Examination Grade Form

5. ADMISSION TO CANDIDACY

Application for admission to candidacy for either the Master of Science or Doctor of Philosophy degree must be made on the approved form to the Academic Status and Degrees Committee. *Provisional graduate students cannot be admitted to candidacy.* The requirements for admission to candidacy for both the Master of Science and Doctor of Philosophy degrees are as follows:

Upon a favorable recommendation of the student's Advisory Committee and the Academic Status and Degrees Committee, followed by a majority vote of the faculty of the School of Marine Science and the approval of the Dean of Graduate Studies, a student may be admitted to candidacy after completion of the following requirements:

1. The student must have achieved a grade point average of B (3.0) or better, averaged over all courses taken for credit at the time of application for admission to candidacy.
2. All core courses required by the School of Marine Science, including MS 501, 501L, MS 502, MS 504, and MS 505, must be passed with a grade of B- or better (or successful completion of a comprehensive examination must be documented) or officially exempted, and all other courses specifically required by the student's Advisory Committee or department must be completed (18 Sept 1996).
3. The qualifying examination and prospectus must be completed.

Applicable Form(s): *Application for Admission to Candidacy*

6. PREPARATION OF THESIS OR DISSERTATION

A student's thesis or dissertation should be prepared in draft form for review by all members of his/her Advisory Committee well in advance of the proposed date for the defense. The document should be prepared in the required format (see appended Guide and/or refer to recently accepted theses and dissertations from the School of Marine Science). The draft should include all intended artwork in as close to final form as possible. The student should allow at least two to three weeks for the Committee to review the draft and should anticipate at least two iterations prior to preparation of a final draft. In other words, the first draft should be prepared a minimum of two and one half months prior to the proposed date for the defense. Following a timely review by a student's major advisor, **a complete and final draft should be submitted to all committee members no less than thirty (30) days prior to the dissertation or thesis defense.** The committee members are responsible for a timely review of all drafts.

The thesis or dissertation in final form with signed approval sheets must be presented to the College approximately two weeks prior to the date of commencement. Each dissertation, when submitted, must be accompanied by two copies of an abstract of not more than 350 words. This abstract, or summary, will be published in Microfilm Abstracts for national distribution. No dissertation will be accepted without this abstract.

Submitting Copies of the Dissertation or Thesis for Binding

Information for submitting to the Swem and VIMS libraries copies of the approved dissertation or thesis for binding is available from the SMS Graduate Registrar or in Appendix I of this guide. In general, however, the following applies:

A minimum of five (5) copies of the student's dissertation or thesis are required by the College and/or School, which includes:

- One (1) copy for Swem Library (acid-free paper required)
- Two (2) copies for VIMS Library (acid-free paper required)
- One (1) copy for Major Professor
- One (1) copy for student (Students also may have additional copies bound by the VIMS library)

Note: One **additional copy** of the dissertation or thesis, **bringing the total to six**, is requested of each Fisheries Science student. The additional copy will be placed in the Fisheries Science library.

Prior to submitting copies of their dissertations or theses for binding, students may pay appropriate binding fees and, if required, microfilming fees to the VIMS Cashier's window. Receipts must be presented or shown to appropriate staff member of the Swem and VIMS libraries when submitting the unbound copies of the dissertations or theses.

Xeroxed copies of binding fee receipts must be submitted to the Dean of Graduate Studies Office, c/o the SMS Graduate Registrar, Watermen's 233.

Applicable Form(s): *Final Draft Distribution Form*

Approval Sheet Format

Agreement Form (actual form is a four page, two sided document available from the Graduate Registrar's Office, Watermen's 233)

Binding Form for VIMS Theses and Dissertations

Guide for Writers of Master's Theses or Doctoral Dissertations
(see Appendix I)

7. THESIS OR DISSERTATION DEFENSE

The defense of a thesis or dissertation will consist of two parts. First, all students are required to present a seminar to the marine science faculty, staff and students on their thesis or dissertation research. (21 May 86) The seminar will be advertised and open to any interested individuals. Second, immediately following the seminar, the student will undergo an oral examination (i.e., the defense of his or her thesis or dissertation). The defense will be chaired by a moderator who is not a member of the student's committee (19 May 95) **and** administered by the student's Advisory Committee. Any interested faculty members of the College are invited to attend. The examination will focus on the student's research project.

The seminar and defense will not be scheduled until after preparation of a final draft of the thesis or dissertation that is a minimum of thirty (30) days. At the conclusion of the defense the Advisory Committee will vote to accept or reject the document indicating their decision on the Thesis/Dissertation Defense Acceptance Form. This form must be signed by all Committee members and submitted to the Graduate Registrar, Watermen's 233.

If the thesis or dissertation is acceptable, all Advisory Committee members will also sign the approval sheet to be included with bound copies of the document. At least three (two of the five required may be photocopied) copies of the approval sheet, prepared on acid free bond paper should be available at the conclusion of the defense for Committee signatures.

Unanimous committee approval is necessary for satisfactory completion of a student's thesis or dissertation defense and final version of the thesis or dissertation. In the event that unanimity has not been achieved following the defense or after at least the second reading or a revised thesis or dissertation by one dissenting committee member, the student may appeal to the Academic Status and Degrees Committee for an independent review. The Academic Status and Degrees Committee may, at their discretion, appoint an independent **reader** from the SMS faculty to render a substitute opinion which, if in agreement with the majority, will signify the acceptance and permit the independent reader to sign the approval form(s) in lieu of the dissenting committee member. Only one substitution of approval shall be permitted through appeal to the Academic Status **and** Degrees Committee. (25 Feb. 91)

Scheduling and Announcement of Seminar and Defense

Announcement of both the student's seminar and defense should be made to the faculty at least two (2) weeks prior to the scheduled date.

The student may use the attached form to provide information to the Dean of Graduate Studies' Office for the preparation and distribution of the announcement to the faculty.

Announcement of the seminar to the entire VIMS community is completed by the Seminar Committee. The attached form may be used for requesting the announcement.

Applicable Form(s): *Scheduling of Seminar and Defense*
Seminar Scheduling Request Form
Thesis/Dissertation Defense Acceptance Form

8. GRADUATION

All students must be registered for the semester in which they graduate. At the beginning of the semester in which the student intends to graduate he/she must notify the Graduate Registrar by completing the Notice of Candidacy form. This notice is not irrevocable and in the event graduation cannot be achieved the student should notify the Graduate Registrar in writing as soon as possible.

Diplomas for the Master of Science and Doctor of Philosophy degrees are mailed to the recipients after the graduation date. The student must complete a Diploma Distribution Form and send it to the Graduate Registrar in order to receive his/her diploma.

Commencement Participation: Degrees are conferred by the College in May, August or December of each year. Commencement Exercises are held each year in May; therefore, students graduating in either August or December traditionally are invited to the following spring's ceremonies.

Students in the School of Marine Science may be granted permission to participate in commencement exercises prior to completion of their degree requirements if they meet certain eligibility criteria. For instance, a student planning to finish all degree requirements during the summer for graduation in August may petition the Dean of Graduate Studies for permission to attend the prior May's ceremonies. The student must (1) advance to candidacy in his or her degree program no later than April 1 and (2) forward a letter from his or her advisor to the Graduate Dean stating the reasonableness of completion of all degree requirements by August. (23 June 1998)

In cases where a student is given permission to "walk" in May commencement prior to completing his or her degree the following August, the student should check with the SMS Graduate Registrar regarding specific deadlines. A follow-up with the Graduate Registrar will help to assure the inclusion of the student's name on the printed program of the applicable May commencement.

Applicable Form(s): *Notice of Candidacy for Graduation/Diploma Distribution Form*

VI. GRADUATE STUDENT CHECK-OUT PROCEDURES

The following forms are part of the final check-out paper work required by the School of Marine Science. Return all completed, signed forms to the SMS Graduate Registrar, Watermen's Hall.

Verification of Receipt of Thesis/Dissertation by Swem Library

An SMS graduate student must take a copy of the "Verification of Receipt of Thesis/Dissertation by Swem Library" to the main campus library when turning in the Swem copy of his or her dissertation or thesis. A Swem staff member authorized to accept the dissertation or thesis copy for binding must sign the slip.

The library verification slip must be returned to the SMS Graduate Registrar.

Graduate Survey Form

The information requested in the Graduate Survey Form is pertinent to the accurate compilation of statistical reports of the School of Marine Science. A survey form will be mailed to each candidate for graduation prior to each semester's deadline for graduation. It should be returned to the SMS Graduate Registrar (Watermen's 233) with other completion papers.

Student Check-Out Sheet

This form is required of all students leaving the School, whether temporarily (leave of absence) or permanently (graduation or withdrawal). Failure to obtain proper signatures and turn in the form to the Graduate Registrar (Watermen's 233) may result in delays in the finalization of paper work associated with a student's assistantship or degree program status.

Survey of Earned Doctorates

The purpose of the *Survey of Earned Doctorates* is to gather national data about doctoral recipients. All doctoral candidates should complete the Survey and return it to the SMS Graduate Registrar. It will be forwarded to the National Opinion Research Council.

Applicable Form(s): *Verification of Receipt of Thesis/Dissertation by Swem Library*
 Graduate Survey Form
 Student Check-Out Sheet
 Survey of Earned Doctorates (available from the Graduate
 Registrar's Office, Watermen's 233)

APPENDIX

**A GUIDE
FOR
WRITERS OF MASTER'S THESES
AND DOCTORAL DISSERTATIONS**

School of Marine Science
Virginia Institute of Marine Science
College of William & Mary

September 2001

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I. INTRODUCTION

The purpose of this Guide is to provide a set of general procedures to follow in preparing theses or dissertations as part of the requirements for the degrees of Master of Arts or Doctor of Philosophy. It is designed to secure the maximum uniformity consistent with the flexibility necessary for the various disciplines in which theses and dissertations are written at the College. It is also designed to assure certain minimum mechanical standards with regard to paper, reproduction methods, and binding.

In using this Guide, common sense and the particular requirements of each discipline should be the major considerations. Obviously, if there are no illustrations in a thesis or dissertation, there is no need to include a "List of Illustrations" in the "Preliminaries."

Each thesis or dissertation must include, in the form prescribed and exemplified in the specimen pages provided in this Guide, each of the following items in the order indicated:

- TITLE PAGE
- APPROVAL SHEET
- TABLE OF CONTENTS
- ABSTRACT
- HALF TITLE
- VITA

All theses and dissertations must conform to the mechanical considerations laid down in Part III of this Guide.

All theses and dissertations must be bound by the Library.

A negative microfilm of each Ph.D. dissertation is placed on deposit with University Microfilms International, Ann Arbor, Michigan. A completed copy of the **Agreement Form** and **an abstract** (*This abstract is in addition to the abstract required in the dissertation; see example on following page*) must be submitted with the original dissertation to Swem Library (W&M Campus). In addition, there is a microfilming fee to be paid at the Cashier's Office (W&M Campus) when you pay the Archives copy binding fee. A copyright fee is also due if you wish your work copyrighted. All forms are available in the Dean of Graduate Studies Office, Watermen's 233.

NOTE: The abstract outlined on this page is for University Microfilms and is to be submitted only by Ph.D. Candidates

(See next page for description of the abstract as it should be prepared for inclusion in both a dissertation and thesis.)

TITLE OF DISSERTATION

ABSTRACT

Doctoral candidates must prepare a **doublespaced** abstract presenting a clear and concise summary of their work for University Microfilms not to exceed 350 words. If the abstract prepared for binding with the dissertation does not exceed **350 words**, the same wording may be used.

At the bottom of the last page of the abstract:

(author's full name)

SCHOOL OF MARINE SCIENCE
THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA

II. PARTS OF THE THESIS OR DISSERTATION

A. Preliminaries, in the following order:

1. **Title Page.** The Title Page must follow exactly the form of the specimen page hereafter provided. The title--in capital letters--should be short, elaborated in a subtitle if necessary. For example, "Tidal Freshwater Marsh - Estuary Interactions," is preferable to "An Analysis of the Multiple Reasons Tidal Freshwater Marshes are the Single Most Important Part of the Estuarine System." Short titles for the spine should not exceed 50 characters. No page number appears on the title page.)
2. **Approval Sheet.** The Approval Sheet must follow exactly the form of the specimen page hereafter provided. Five copies of the thesis or dissertation must contain an Approval Sheet on **acid-free bond** paper. Original signatures of the author and members of his/her Advisory Committee are required for the three library copies. The other copies may have photocopied approval sheets.
3. **Dedication**, if any.
4. **Table of Contents.** See specimen page.
5. **Preface** and/or **Acknowledgments**, if any. See specimen page.
6. **List of Tables**, if any. See specimen page.
7. **List of Illustrations or Figures**, etc., if any. See specimen page.
8. **Abstract.** The Abstract should be a concise summary of the object, scope, and conclusions of the paper, to be contained on one single-spaced page of not over 500 words and, regardless of the discipline, written as far as is possible to be understood by an intelligent layman.

Each leaf of these preliminaries, beginning with the Title Page, is to be considered in numbering, even though the page number does **not** appear on the Title Page. In these preliminary pages, lower case Roman numerals are used and are always centered 3/4" from the bottom of the page.

B. Text

1. **Half-title.** The Half-title page, which immediately follows the Abstract, consists only of the title centered 4" from the top.
2. **Pagination.** Arabic numerals are used in numbering the pages of the text. Although the Half-title is page one of the text, no number appears on this page. The first page of the Introduction or, if none, of Chapter I is numbered page two and the pages following are numbered in sequence through the Reference Material to the end of the thesis or dissertation. On the first page of each chapter, the page number is centered 3/4" from the bottom; on all except the first page of each chapter, the pages are numbered 3/4" from the top in line with the right-hand margin. The text starts two spaces below the page number. Illustrative material such as tables, charts, graphs, illustrations, etc. should not be given a page number unless they are an integral part of the text.

3. **Footnotes.** Adequate citation to sources for particular quotations or other data must be provided. The particular form for footnotes varies from discipline to discipline and should be established by each department concerned. (See the Bibliography of Standard Guides, Section V, page 10.) Departments should be consistent in their requirements from thesis to thesis, and a student must be consistent in his use of the forms prescribed by his department. Notes at the bottom of each page are strongly preferred by the library.

If departmental standards permit placement of footnotes at the end of each chapter, the footnotes should begin on a new page and be headed: Notes for Chapter I, etc.

If footnotes are placed at the end of the thesis or dissertation, they should follow any appendices and precede the bibliography, should begin on a new page headed "Notes" at the center of the page 2" from the top, and should have in brackets at the center of each subsequent page 3/4" from the top the heading, "Notes to pages ___" with the inclusive page numbers of the text to which that page of notes refers.

C. Reference Material, in the following order:

1. **Appendices**, if any.
2. **Notes to the text** if placed at the end of the thesis or dissertation.
3. **Literature Cited.** See specimen sheet below.
4. **Vita.** The Vita is a one-page autobiographical sketch of the author containing **full** name, date and place of birth, educational background, degrees and dates, and other pertinent training or experience.

III . MECHANICAL CONSIDERATIONS

Exceptions to the following requirements may be made only with the permission of the Assistant Dean of University Libraries for Special Collections/University Archivist at Swem Library on the Main Campus.

- A. **Archives Copy.** One copy of the thesis or dissertation is bound and kept permanently in the College Archives (Swem Library). This copy must be on permanent durable (i.e. acid-free) bond paper, 20-pound weight, 8 1/2" x 11 ". "Erasable bond" and rag content papers are not acceptable. The Standard Paper Company of Richmond manufactures permanent-durable bond under the brand name "Permalife" and the Xerox Corporation under the designation "Archival Bond 25 ." Hollinger or Hammermill acid-free paper are also acceptable. If a brand other than these is used, the label from the box containing the specifications of the paper must be submitted with the thesis. For computer printer paper specifications, consult the College Archivist.

Acid-free paper is available from the College bookstore (W&M campus) or the Publications Center (VIMS campus). If ordering by mail, include return postage.

The Archives copy may be produced either by printing or xerographic copying directly on acid-free paper.

The xerographic copy must be such that the print does not smudge or smear if you rub it, and it must be possible to produce a dark, clear, and legible print when reproducing from the copy. If there is any doubt as to the stability of the print on the page, or the ability to produce a good copy, test it before it is submitted to insure that it will be accepted. If it does not meet these standards, it will be returned to you for correction of the problem.

- B. **Xerographic Copies.** Two xerographic copies of each thesis or dissertation must also be submitted to the library at the Virginia Institute of Marine Science. Xerographic copies must be on acid-free paper.
- C. **Illustrative Material.** Photographs are preferred for all illustrative material. Xerographic copies of illustrative material may be submitted if perfectly distinct. Xerographic copies must be on acid-free paper. Thermofax copies are not acceptable. If mounted, photographs and other illustrative material must be dry-mounted on acid-free paper, 20-pound weight. Rubber cement or other glues are not acceptable methods of attachment. NB: Dry mounting tissue is designated for either resin-coated or conventional photographic paper; be sure to select the appropriate one. Photographs which are 8 1/2" x 11" in size need not be mounted.

When graphs are used, originals should accompany the Archives copy if on substantial graph paper, and if neatly drawn in India ink. If on thin graph paper, xerographic copies of graphs must be submitted on acid-free paper, 20-pound weight, 8 1/2" x 11 ". Large graphs must be reduced to 8 1/2" and xerographic copies made on acid-free paper, 20-pound weight. Graphs must meet margin requirements.

All oversize computer printouts must be reduced and photocopied on 8 1/2" x 11" acid-free paper, 20-pound weight, 8 1/2" x 11 ", and must meet margin requirements. The Duplicating Department located in Swem Library has the equipment and paper for this service.

The heading on any page of illustrative material (e.g., "Table 1 "), should be centered 2" below the top of the page; the legend or explanation single- or double-spaced below the material. If it is not feasible to type on the illustrative material itself (as in the case of a photograph), a preliminary page containing heading and legend must be employed.

- D. **Typewriter.** A conventional typewriter (preferably electric using elite or pica type) may be used. Clean the type carefully before commencing the work and after each fifty pages typed. "Script" or other unusual type faces are not acceptable.
- E. **Computers.** Use of a computer and printer with a high quality print is accepted. Laser printers are recommended. "Script" or other unusual type faces are not acceptable. Dot matrix printers of any kind are not acceptable.
- F. **Margins.** A binding margin of 1-1/2" must be provided on the left. All other margins should be at least 1 ". Remember that in binding all edges of the paper are trimmed. The top margin of the first page of each new section should be 2"; the top margin of the half-title page is 4".

Note: Because of the imprecision of the printing process, the sample pages contained in this guide may not adhere exactly to these specifications. Typing must follow the written instructions; the samples are included to illustrate layout only.

- G. **Appearance.** Clean copies, free of strikeouts, obvious erasures (including excessive use of opaque fluids and other methods of correction), or emendations must be submitted. When peculiar symbols or other textural additions are necessary, they may be carefully added with India ink or permanent black ink. With the approval of the student's advisor, minor corrections may also be made in India ink or permanent black ink.
- H. **Binding.** The Archives copy is a glued binding that will not accommodate material wider than 2". Extra fees will be assessed if a volume of a thesis or dissertation exceeds 2", or if a stitched binding is required for any reason. Binding fees are subject to change without notice. Inquire at the Dean of Graduate Studies Office (Watermen's 233) or the Graduate Studies Office (W&M campus) for current fees.

Pay the appropriate fee for binding the Archives copy at the W&M Cashier's Office (Blow Hall 101, M-F 8:30 am - 3:00 pm). Submit the original copy of your thesis or dissertation and the binding fee receipt to the Associate Librarian's Office in Swem Library. Request a copy of the binding receipt for the VIMS Graduate Registrar's Office (Watermen's 233).

All additional copies for binding are received by the Library Assistant in the VIMS Library Office. The two copies retained by the VIMS library must have original signatures on the approval sheets and sewn library binding. The remaining copies for the major professor and student are bound as the student chooses (Library Binding or Superflex). An invoice for binding fees will be prepared by the Library Assistant for payment to the VIMS Cashier's Office. (See binding form in this Guide.)

**IV. CHECKLIST OF STEPS UPON COMPLETION OF THESIS
OR DISSERTATION**

V. BIBLIOGRAPHY OF STANDARD GUIDES

The guides which are listed here should be consulted for matters of form and style in the various disciplines. Where conflicts occur between this VIMS Guide for Writers of Master's Theses and Doctoral Dissertations and the listed guides, the student should follow the instructions given in the introduction of this guide, or consult with his or her advisor.

A Manual for Authors of Mathematical Papers. 8th edition. Providence, R.I.: American Mathematical Society, 1984.

Campbell, William G. Form and Style: Thesis, Reports, Term Papers. 6th edition. Boston: Houghton Mifflin Co., 1981.

Council of Biology Editors Style Manual. 5th edition. Arlington, VA: American Institute of Biological Sciences, 1983.

Handbook for Authors of Papers in American Chemical Society Publications. Washington: American Chemical Society, 1978.

The Chicago Manual of Style. 131h edition. Chicago: University of Chicago Press, 1982.

Turabian, Kate L. A Manual for Writers of Term Papers: Theses and Dissertation. 4th edition. Chicago: University of Chicago Press, 1973.

VI. SPECIMEN PAGES

Sample Pages of Theses and Dissertations. The following pages illustrate the form of the major elements in a thesis or dissertation, based upon the style previously discussed. Pay particular attention to spacing, placement of page numbers, margins, and capitalization on these pages.

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COMMUNITY STRUCTURE IN OLIGOHALINE WETLAND ECOTONES

A Dissertation

Presented to

The Faculty of the School of Marine Science

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Philosophy

by

Ann E. Student 2001

PRIMARY PRODUCTION IN *PHRAGMITES COMMUNIS*
DOMINATED WETLANDS

A Thesis

Presented to

The Faculty of the School of Marine Science
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Science

by

Anne E. Student

2001

APPROVAL SHEET

This thesis [or dissertation] is submitted in partial fulfillment of

the requirements for the degree of

Master of Arts

[or Doctor of Philosophy]

Anne E. Student

Approved, August 2001

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ABSTRACT

An analysis of the distribution and abundance of vegetation species in an oligohaline wetland documents the seasonal association patterns in ecotonal communities. Indices of relative dominance within and among seasonal associations are used to elucidate short term patterns in succession across the marsh-upland ecotone. The tendency for species to utilize vegetative or sexual reproduction and seasonal patterns in net above ground production are correlated with competitive success of species in the ecotone. Species producing propagules in mid-growing season are demonstrated to have a competitive disadvantage in the ecotone when physical stresses (i.e. tidal inundation and soil drainage) are low. When physical stresses are relatively high, by virtue of either sudden or repeated changes, no competitive advantage related to reproductive pattern can be demonstrated.

Long term trends of community structure in wetlands ecotones is documented by analysis of six sites originally sampled ten years ago. Predictions of competitive success derived from analysis of seasonal growth and reproduction patterns are substantiated in sixty-five percent of the observations. The results suggest at least one additional physical parameter (suspected to be soil nitrogen levels) is a significant determinant of successional patterns in these communities.

(One single spaced page, not over 500 words)

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COMMUNITY STRUCTURE IN OLIGOHALINE WETLAND ECOTONES

INTRODUCTION

Oligohaline wetland vegetation communities are typically both diverse and compositionally variable. The ecotone between marsh and upland vegetation communities is particularly interesting as a site for analysis of successional trends. The interaction between biological and physical factors in the environment which determine competitive success and thus successional trends is complex but amenable to study in oligohaline wetlands.

Numerous researchers have studied the autecology of the dominant species in oligohaline ecotones. Howard and Jones (1983) summarized much of the available information and commented that:

Existing studies of the autecology of oligohaline wetland species might profitably be combined with *in situ* studies of physical parameters. The correlation of these two data bases should permit analysis of the relative importance of biological and physical factors in determination of community structure.

Studies of community structure in an ecotone through time will elucidate successional trends. Combining this information with an understanding of determinant factors for community structure in short biological time scales should permit a clearer understanding of the importance of biological and physical factors in directing successional trends (Isawa 1982). This approach has been successfully applied

MATERIALS AND METHODS

Site

The oligohaline wetland communities examined in this study are all located on the York River in Virginia. Sites were selected on the basis of salinity regime (1 to 10 ppt annual range), moderate elevational gradient (less than one percent slope) and absence of anthropogenic impacts (no development or surface modification within 500 meters). The six locations selected for study are indicated on Figure 1. Each location has an extensive (greater than 50 meters wide) marsh and an ecotone between marsh and upland at least 10 meters wide.

Sampling Methodology

The vegetation community at each site was sampled four times during 1984. Samplings were timed to coincide with the start of the growing season (April), mid-summer (June and August) and the end of the growing season (October). In each time period, permanent transects extending from mid-marsh to a point 20 meters past the beginning of the uplands community were sampled at randomly selected points. At each point the vegetation within a one meter square plot was censused for species composition, cover and basal area. In adjacent areas along each transect, 35 individual plants of each of the 10 dominant plant species were harvested and returned to the laboratory. The individual plants were used for determination of morphometric characteristics and reproductive state. Classification of reproductive states was based on the methodology proposed by Tail (1958) and

TABLE 3

FREQUENCY OF OCCURRENCE OF SPECIES IN SEASONAL COLLECTIONS

or

TABLE 3. Frequency of Occurrence of Species in Seasonal Collections.

Species	April	June	August	October
<i>Sagittariafalcata</i>	0.01	0.01	<0.01	<0.01
<i>Sagittaria latifolia</i>	0.02	0.02	<0.01	<0.01
<i>Typha angustifolia</i>	0.08	0.07	0.13	0.16
<i>Typha latifolia</i>	0.09	0.15	0.19	0.23
<i>Hibiscus moscheutos</i>	0.10	0.15	0.15	0.08
<i>Panicum virgatum</i>	0.22	0.20	0.20	0.23
<i>Myrica cerifera</i>	<0.01	<0.01	<0.01	<0.01
<i>Ivafrutescens</i>	0.10	0.10	0.10	0.10
<i>Baccharis halimifolia</i>	0.05	0.05	0.05	0.05
<i>Distichlis spicata</i>	0.15	0.10	0.05	0.05
<i>Spartina pa tens</i>	0.18	0.15	0.13	0.10

APPENDIX

Glossary of “Beach Terms” adapted from
U.S. Army Coastal Engineering Research Center (1973)

BACKSHORE - That zone of the shore or beach lying between the foreshore and the coastline and acted upon by waves only during severe storms, especially when combined with exceptionally high water. Also **BACKBEACH**. It comprises the **BERM** or **BERMS**.

BACKRUSH - The seaward return of the water following the uprush of the waves. For any given tide stage, the point of farthest return seaward of the backrush is known as the **LIMIT** of **BACKRUSH** or **LIMIT BACKWASH**.

BAR - A submerged or emerged embankment of sand, gravel, or other unconsolidated or consolidated material over which water flows.

BEACH BERM- A nearly horizontal part of the beach or backshore formed by the deposit of sand, gravel or mud. Some beaches have no berms, others have one or several.

BEACH FACE - The section of the beach normally exposed to the action of the wave uprush. The **FORESHORE** of a **BEACH**.

CREST OF BERM - The seaward limit of a berme. Also **BERM EDGE**.

FORESHORE - The part of the shore lying between the crest of the seaward berm (or upper limit of wave wash at high tide) and the ordinary low water mark that is ordinarily traversed by the uprush and backrush of the waves as the tides rise and fall.

LITFORAL CURRENT - Any current in the zone extending seaward from the shoreline to just beyond the breaker zone, caused primarily by wave action, e.g., longshore current, rip current.

LONGSHORE BAR - A bar running longer than five meters situated somewhere close to a shoreline.

LONGSHORE TROUGH - An elongate depression formed in the foreshore or in the bottom just offshore by waves or tidal currents.

OFFSHORE - The comparatively flat zone of variable width, extending from the breaker zone to the seaward edge of the Continental Shelf.

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Page 2 of this form is Page 18.

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