

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Franklin A. Newton phone number 831-6295

Department: **College of Earth, Ocean, and Environment: School of Marine Science and Policy**
E-mail: fanewt@udel.edu

Action: Add Major in Marine Science with concentration in Marine Biology
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term 11Sp
(use format 04F, 05W)

Current degree _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: BS
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: BS in Marine Science with concentration in Marine Biology
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study: _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

We currently have a strong core of courses supporting the Minor in Marine Science offered by CEOE. The major will utilize the current portfolio of courses along with the colloquium series below. The series of colloquium experiences will connect undergraduate majors to the field early and will introduce them gradually to the issues, theoretical connections, research and other work in the many aspects of the field of marine science. A student's progression through these courses will provide an increasingly more sophisticated understanding of the integrative knowledge that is essential for understanding the physical, chemical and biological linkages that define marine and oceanic environments.

MAST100 Marine Science Colloquium I – This course is intended to expose students to the breadth of marine science research conducted by UD faculty. The courses will be coordinated by one or two faculty members who will also serve as a primary point of contact for academic advising. The format will be a faculty seminar series to introduce core aspects of biological, physical, chemical and geological marine science, how these concepts are applied in contemporary research, and provide a glimpse at possible career tracks. The goal is to convey the highly interdisciplinary nature of marine science and to help students select an academic and/or research advisor more attuned to their specific interests. MAST100 will be modeled on the Biology Freshman Seminar (BISC100). The students will be asked to prepare a presentation related to one of the speaker's topics. Primarily intended for Marine Science majors in the fall semester of their freshman year.

MAST101 Marine Science Colloquium II - This course continues the first year faculty seminar series to introduce core aspects of biological, physical, chemical and geological marine science as applied in research. Primarily intended for Marine Science majors in the spring semester of their freshman year.

MAST201 Marine Science Colloquium III - This course will run parallel to the first year faculty seminar series to introduce core aspects of biological, physical, chemical and geological marine science as applied in research. Students will be required to prepare a paper that more deeply explores a topic presented by one of the speakers during the term. Primarily intended for Marine Science majors in their sophomore year.

MAST301 Junior Marine Science Seminar - This course is envisioned as an undergraduate parallel to current graduate seminar courses in Oceanography and Marine Biosciences. Topics and themes will rotate depending on the faculty coordinating the course and could involve problem based learning, group projects, and/or individual seminars/presentations on specific topics or targeting specific audiences (general public, K-12 students, short meeting talks, etc.). 1 credit. Primarily intended for Marine Science majors in their junior year.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>

The Marine Science curriculum supports the 10 goals of undergraduate education in the following ways:

1. Courses in the major require that students communicate effectively in verbal and written ways.
2. Students will need to use information technologies, use quantitative reasoning and critical thinking skills.
3. Students will work and learn independently and collaboratively throughout the coursework and fieldwork of the major.
4. Students will be asked to integrate in-class learning in solving real life problems.
5. Students will explore individual, political and scientific choices related to marine science and understand the impact of humans on the marine environment and *vice versa* locally and globally.
6. Students will work and learn while exploring various perspectives and diverse ways of thinking that underlie the search for knowledge in the sciences and policy studies.
7. Students will explore related ethical questions and implications of individual and societal choices on individuals, the ocean systems, species populations and the planet.
8. Students will develop intellectual curiosity, confidence, and understand the need for lifelong engagement in learning.

9. Students will develop an integrated, international perspective regarding countries, populations and the environment.
10. Students will integrate and demonstrate classroom skills and knowledge in at least one field related experience.

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter "None")

Given that we expect a small cohort size in the major during the implementation phase, we expect that the effect on course subscription in other units to be relatively minor. However, courses from the following units are required for the major. Letters of support from the affected units are attached.

Department of Biological Sciences	Department of Mathematical Sciences
Department of Chemistry/Biochemistry	Department of Physics and Astronomy
Department of Entomology and Wildlife Conservation	Department of English

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

The State of Delaware and the University of Delaware have rich traditions connected to the marine environment and the study of marine science. We are a state with: 381 miles of tidal shoreline; 90,000 acres of tidal wetlands; one of the largest estuaries on the East Coast; inland bays; one of the busiest canals in the United States; and beaches, tourism, industry and infrastructure associated with the ocean. As such, it is imperative to have a citizenry that is well versed in the issues that impact our marine and coastal areas.

We are proposing for the first time at UD a Marine Science degree with an initial concentration in Marine Biology (versus separate degrees such as a BS in Marine Biology, a BS in Chemical Oceanography, a BS in Geological Oceanography, a BS in Physical Oceanography) believing this best reflects the interdisciplinary nature of the field, and is philosophically consistent with our graduate academic programs. Given our current resources, and the most interest by our faculty and prospective students in the field of marine biology, we have chosen to first establish the concentration in marine biology. In the future, the marine science degree could readily accommodate expansion into other sub-disciplines as resources and faculty and student interest permit.

Currently, students have limited options in studying the marine sciences and, in particular, marine biology. There is an existing minor in marine studies, but this is a series of classes that total only 18 credits with only 9 to 12 of these related to marine ecosystems. Also on a relatively limited basis, they can study the ocean system and environmental connections through a concentration in marine science within the Environmental Science degree or the geological properties of the ocean through the Geology degree with a concentration in coastal and marine geoscience or within the minor in coastal and marine geoscience. These existing minors and concentrations in marine science meet the needs of some UD students, however, there is an unmet need for a broader *focus on the marine sciences and, in particular, biological studies of marine life and habitats, which the proposed degree would satisfy.*

Administration of the Marine Science major

The Marine Science degree will be housed within the School of Marine Science and Policy (SMSP) within the College of Earth, Ocean and Environment. The Director of the School and the Director's Council will be responsible for academic administration. Non-academic support for the major will be handled by the College's Assistant Dean for Student Services in consultation with the Dean of the College, the Director of the SMSP, and the School's faculty.

Resources available and required

The School of Marine Science and Policy has recently implemented a Minor in Marine Science that has developed the necessary institutional transition from a previously graduate-only program to one that now includes an undergraduate major. Thus, resources already exist and are in place for the implementation of the proposed new undergraduate major degree. Faculty, library resources, course offerings and research facilities all currently are available to support the new curriculum. We initially anticipate a small number of students per year class in the marine biology concentration. Based on a survey of our faculty, we feel is consistent with our

present capacity for mentoring students in our laboratories. Growth of the major (by increasing numbers and/or adding concentrations) will be made with corresponding expansion of advising capacity, classroom sizes, laboratory and wet-lab space concerns in mind. Resources already exist and are in place for the implementation of the major. Faculty, library resources, course offerings and research facilities all currently are available and support the graduate programs and current course offerings.

There is a commitment from the faculty, the School of Marine Science and Policy and the Dean of the College of Earth, Ocean and Environment to implement this major including the completion of an undergraduate laboratory space renovation. There is a continued commitment within SMSP and CEOE to meet the future resource needs for this major. An expansion of the undergraduate degree program to include other areas of specialization (physical or chemical oceanography, marine policy) may require additional ITV rooms or portable ITV equipment, to facilitate interactions between Newark and Lewes classrooms.

Implementation and Evaluation

Once approved, the major can be publicized to incoming and returning students and implemented beginning in the Spring Semester of 2011. There are a number of current students that have expressed interest in the major.

The major will be fully evaluated after 10 consecutive semesters. In the process of studying the feasibility of creating this degree, we devoted a substantial effort to reviewing marine institutions in terms of size, research emphasis and success of their undergraduate programs. We believe that SUNY Stony Brook, the University of Maine and the University of Rhode Island are the three institutions most comparable to us in these metrics and have established (or recently established) undergraduate programs. As we move through the process of implementing and evaluating the degree, we recommend that additional contacts and possibly site visits be arranged to continue to benefit from the experiences of our peer institutions.

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

BACHELOR OF SCIENCE IN MARINE SCIENCE with a concentration in MARINE BIOLOGY

The Bachelor of Science in Marine Science with a concentration in Marine Biology emphasizes a broad scientific understanding of the character, function, and analysis of ocean systems, and the habitats and biota that live there. Marine Biology students benefit from a broad-based program that is rigorous in both math and science. The degree is designed to assist students in understanding the connectedness of science and society; giving students a strong understanding of the scientific concepts of marine biology while challenging them to use analytical skills and tools to explore issues and to integrate and synthesize information and communicate scientific issues and concepts clearly in oral and written format throughout their coursework.

CURRICULUM

<u>University Requirements</u>	<u>Credits</u>
First Year Experience	1
ENGL110 Critical Reading and Writing	3
Discovery Learning Experience	3
Multicultural Course	3
University Breadth Requirements (12 credits as follows)	
Creative Arts and Humanities	3
History and Cultural Change	3
Social and Behavioral Sciences	3
Mathematics, Natural Sciences and Technology	3
<u>College Requirements</u>	
Second Writing Requirement	3
Foreign Language Requirement	0-12
College Breadth Requirements (9 credits as follows)	

Creative Arts and Humanities	3
History and Cultural Change	3
Social and Behavioral Sciences	3

Supporting Mathematics and Sciences Requirements

BISC 207 Introductory Biology I	4
CHEM 103 General Chemistry	4
CHEM 104 General Chemistry	4
MATH 241 Analytic Geometry and Calculus A	4
MATH 242 Analytic Geometry and Calculus B	4
PHYS 201 Introductory Physics I	4

Core Requirements for Marine Science major

MAST 100 Marine Science Colloquium I	1
MAST 101 Marine Science Colloquium II	1
MAST 201 Marine Science Colloquium III	1
MAST 301 Junior Marine Science Seminar	1
ENGL 410 Technical Writing	3
MAST 482 Introduction to Ocean Sciences	3
MAST 492 Marine Environmental Studies	3
Two additional MAST courses from outside the area of concentration at the 400 level or higher	6
Marine Science Discovery Learning/Research Experience**:	3-6

**A marine science research or field experience that satisfies the University Discovery Learning Experience (DLE) requirement. Each student's proposed activity will require approval by the academic advisor to ensure that the experience is rigorous and discovery/research based. Examples may include internships, some study abroad courses, and/or an undergraduate research experience either at UD or other institutions (e.g. NSF-REU programs).

Marine Biology Concentration Requirements

BISC 208 Introductory Biology II	4
CHEM 321 Organic Chemistry	4
CHEM 322 Organic Chemistry	4
MAST/ENWC 314 Comparative Terrestrial & Marine Ecology	3
MAST 427/627 Marine Biology	3
MAST 451/651 Marine Invertebrate Diversity	3

Three of the following:

MAST 421/621 Coastal Field Biology	3
MAST 618 Marine Microbial Ecology	3
MAST 623 Physiology of Marine Organisms	3
MAST 625 Microbial Physiology and Diversity	3
MAST 630 Ichthyology	3
MAST 683 Environmental Chemistry	3

ELECTIVES

After required courses are completed; sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF

124

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

SMSP Director C. E. Effie Date 09-15-10

Dean of College Nancy M. Pasca Date 09-15-10

Chairperson, College Curriculum Committee Daniel J. Leathers Date 9-15-10

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

**Appendix I – Example Student Schedule of Courses
BS in Marine Science concentration in Marine Biology**

Freshman Fall

First Year Experience – 1
Foreign Lang. Req. – 4
BISC 207 – 4
CHEM 103 – 4
MAST 100 -1
UNIV112/113/114 or 115 - 1
15 credits

Freshman Spring

MATH 241 – 4
ENGL 110 - 3
BISC208 - 4
CHEM 104 – 4
MAST 101 – 1
16 credits

Sophomore Fall

MAST 201 – 1
MATH 242 – 4
CHEM321 – 4
Breadth and/or Multicultural- 3
Breadth – 3
15 credits

Sophomore Spring

MAST 314 - 3
CHEM 322 – 4
PHYS 201 - 4
Breadth - 3
Elective - 3
17 credits

Junior Fall

MAST 451 – 3
MAST 427 – 3
Breadth – 3
Breadth – 3
Elective – 3
15 credits

Junior Spring

MAST 301 - 1
MAST 482 – 3
Marine Biology Concentration course – 3
Breadth - 3
Elective - 3
Elective – 3
16 credits

Senior Fall

MAST 607 - 3
MAST 4XX or higher course – 3
Marine Biology Concentration course – 3
Marine Science DLE course – 3
Elective – 3
15 credits

Senior Spring

MAST492 – 3
Marine Biology Concentration course – 3
MAST 4XX or higher course - 3
Elective - 3
Elective - 3
15 credits

From: Klaus Theopold [mailto:theopold@UDel.Edu]
Sent: Friday, September 24, 2010 3:01 PM
To: Newton, Franklin A.
Cc: Burmeister, John L
Subject: Re: proposal for undergraduate degree in Marine Science

Frank,

The Department of Chemistry and Biochemistry supports the proposed creation of an undergraduate major in Marine Science with a concentration in Marine Biology, and we feel that the inclusion of introductory general chemistry (CHEM103/104) and organic chemistry (CHEM321/322) will provide an appropriate exposure to chemical concepts for the students in this new major.

As you noted, I had previously voiced some concerns about capacity issues, particularly in the organic chemistry sequence. In the meantime, the College of Arts and Sciences has initiated the planning process for the renovation and modest expansion of our organic teaching laboratories. Assuming that these plans will come to fruition in the near future, we will have the capacity to accommodate the envisioned number (~ 10) of students in the proposed major.

I hope this statement of support and readiness to do our part in the education of future Marine Scientists is suitable for your purposes. We wish you much success with the new major.

Regards, Klaus

~~~~~  
Klaus H. Theopold, Professor and Chair  
Department of Chemistry and Biochemistry,  
University of Delaware, Newark, DE 19716, USA.  
Phone: (302)831-1546 (or 1247); Fax: (302)831-6335  
<http://www.udel.edu/theopold/index.html>

On Sep 17, 2010, at 3:49 PM, Newton, Franklin A. wrote:

Klaus-

About eight months ago, I wrote to seek your assistance with a proposal for an undergraduate major in Marine Science with a concentration in Marine Biology that a committee of CEOE faculty had organized. Based on research of students here as well as programs at comparator institutions, we believe this proposal meets a need for students interested in studying the Marine Science.

At that time, you were supportive of the proposal, but were hesitant given the uncertain future of expanded lab space and the like. You indicated that you were talking within your department and within A&S about the lab needs. After discussing with the Dean, we held the proposal until she was able to have discussions with George as well as the beginning of construction of the



ISE building. I write now seeking your support for the proposal now that many of the conversations and projects you were waiting on have begun.

To refresh your recollection, a full description is attached for your consideration. Relevant to your department is the inclusion in the curriculum of four Chemistry courses. The specific courses are:

- \* CHEM103 General Chemistry (required in the major)
- \* CHEM104 General Chemistry (required in the major)
- \* CHEM321 Organic Chemistry (required in the concentration)
- \* CHEM322 Organic Chemistry (required in the concentration)

It is my hope that you can send me a statement (hard copy or emailed) indicating your department's support so that I may include it with the packet to the senate. We are hoping to get it to faculty senate at the end of this month. With that in mind, I was hoping to get your statement by Monday, September 27, 2010. If that date doesn't work, please let me know.

Thank you in advance for your time and consideration.

Frank

Franklin A. Newton, Ed.D.  
Assistant Dean  
College of Earth, Ocean, and Environment  
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111 Robinson Hall  
302.831.6295 (ph)  
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and understanding of earth, ocean, and atmospheric resources.  
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**From:** Kinservik, Matthew [mailto:matthewk@english.udel.edu]  
**Sent:** Monday, September 20, 2010 9:21 PM  
**To:** Newton, Franklin A.  
**Subject:** RE: proposal for undergraduate degree in Marine Science

Dear Dr. Newton,

Thank you for the note. The English Department is happy to support this proposal. ENGL410 is a popular course, and so we would hesitate to endorse this if it meant entailing a commitment to a large number of students on an ongoing basis. But from my correspondence last year, I understand that this proposal will not lead to a flood of students who need ENGL410.

Please let me know if you'd like a more formal endorsement.

All good wishes,  
Matt

Matthew J. Kinservik  
Professor and Chair  
Department of English  
University of Delaware  
Newark, DE 19716  
302-831-3351

**From:** Newton, Franklin A. [mailto:fanewt@UDel.Edu]  
**Sent:** Friday, September 17, 2010 4:00 PM  
**To:** Kinservik, Matthew  
**Subject:** proposal for undergraduate degree in Marine Science

Dr. Kinservik-

I write to seek your assistance. A committee of CEOE faculty has organized a proposal for an undergraduate major in Marine Science with a concentration in Marine Biology. Based on research of students here as well as programs at comparator institutions, we believe this proposal meets a need for students interested in studying the Marine Science.

A full description is attached for your consideration. Relevant to your department is the inclusion in the curriculum of ENGL410 Technical Writing.

Dr. William Ullman from the School of Marine Science and Policy was in contact with you, or another faculty member in your department when the proposal was being finalized by our faculty committee and there was agreement about inclusion of ENGL410 in the proposed curriculum. As you are aware however, the faculty senate requires that affected departments indicate that they support (or don't object to) the

inclusion of their courses in the major curriculum. That is my purpose in writing to you today. It is my hope that you can send me a statement (hard copy or emailed) indicating your department's support so that I may include it with the packet submitted to the senate. It has passed the final stages of our internal process and we are hoping to get it to faculty senate at the end of this month. With that in mind, I was hoping to get your statement by Monday, September 27, 2010. If that date doesn't work or if you have questions, please let me know.

Thank you in advance for your time and consideration.

Franklin A. Newton, Ed.D.

Assistant Dean

College of Earth, Ocean, and Environment

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DEPARTMENT OF BIOLOGY  
OFFICE OF THE CHAIR

University of Delaware  
Newark, Delaware 19716-2590  
Ph: 302/831-6977  
Fax: 302/831-2281

Randall L. Duncan, Ph.D.  
Professor and Chairman  
Department of Biological Sciences  
118C Wolf Hall  
Telephone (302) 831-6977  
Fax No. (302) 831-1033  
E-mail: [rlduncan@udel.edu](mailto:rlduncan@udel.edu)

Dr. Franklin A. Newton  
Assistant Dean  
College of Earth, Ocean and Environment  
111 Robinson Hall  
University of Delaware

Dear Dr. Newton,

This letter is to state the support of the Department of Biological Sciences for the proposed undergraduate degree program in Marine Studies in the College of Earth, Ocean and Environment. As stated in your letter, the impact on the Biology curriculum will be in BISC207 Introductory Biology I and BISC208 Introductory Biology II. While these are heavily populated courses, we have made significant scheduling changes to accommodate the increased demand. As we discussed in our telephone conversation, I do not expect that the predicted enrollment of 10 students per year in this program will severely impact these courses. However, the costs of teaching the laboratories associated with these courses are significant and if enrollment increases significantly, we may have to negotiate these costs in the future.

In summary, I fully support this proposed program and look forward to working with your college.

Best regards,

A handwritten signature in black ink that reads "Randall L. Duncan".

Professor and Chair



DEPARTMENT OF PHYSICS  
AND ASTRONOMY

University of Delaware  
Newark, Delaware 19716-2570  
Ph: 302/831-2661  
Fax: 302/831-1637

TO: Dr. Franklin A. Newton  
Assistant Dean  
College of Earth Ocean, and Environment

Date: January 18, 2010

RE: Proposed New UG Major in Marine Science

Physics and Astronomy approves and supports the new undergraduate major in Marine Science and the use of PHYS201 in the BSMS sophomore year spring curriculum. The Physics UG Program Director will make adjustments upward to course limits to accommodate the approximately 10 marine science students per year who will need to take PHYS201. We have a steady spring enrollment in PHYS201 course demand over the past four years, 107, 129, 120, 120 in 05-06 through last year 08-09 so can easily accommodate these added registrations. Again, Physics will provide the PHYS201 course seats and support necessary for this new UG major, and I wish the College much success with the growth of the new Marine Science major beginning in AY2010-2011.

A handwritten signature in blue ink that reads "George Hadjipanyis" with a stylized flourish at the end.

George C. Hadjipanyis  
R.B. Murray Professor of Physics and Chair  
Physics and Astronomy

From: Charles Mason [mailto:mason@UDel.Edu]  
Sent: Wednesday, January 13, 2010 5:24 PM  
To: Tallamy, Doug; Newton, Franklin A.  
Cc: mason@UDel.Edu  
Subject: Re: proposal for undergraduate degree in Marine Science

Doug and Franklin:

Including ENWC/MAST 314 in the proposed Marine Science major is fine with me.

Chuck Mason

----- Original Message -----

From: "Tallamy, Doug" <dtallamy@UDel.Edu>  
To: "Newton, Franklin A." <fanewt@UDel.Edu>  
Cc: "mason@udel.edu" <mason@UDel.Edu>  
Sent: Wednesday, January 13, 2010 4:43 PM  
Subject: RE: proposal for undergraduate degree in Marine Science

Hi Franklin,

Chuck Mason teaches that course for us so I am copying him on this response. I see no problem with including ENWC/MAST 314 in your proposal for an undergraduate major in marine science. Contingent on Dr. Mason's agreement, I support your proposal.

Doug

---

From: Newton, Franklin A. [fanewt@UDel.Edu]  
Sent: Wednesday, January 13, 2010 4:40 PM  
To: Tallamy, Doug  
Subject: proposal for undergraduate degree in Marine Science

Dr. Tallamy-

I write to seek your assistance. A committee of CEOE faculty has organized a proposal for an undergraduate major in Marine Science with a concentration in Marine Biology. Based on research of students here as well as programs at comparator institutions, we believe this proposal meets a need for students interested in studying the Marine Science.

A full description is attached for your consideration. Relevant to your department is the inclusion in the curriculum of ENWC/MAST 314 Comparative Terrestrial and Marine Ecology.

As you are aware, the faculty senate requires that affected departments indicate that they support (or don't object to) the inclusion of their courses in the major curriculum. It is my hope that you can send me a statement (hard copy or emailed) indicating your department's support so that I may include it with the packet to the senate. It is in the final stages of our internal process and we are hoping to get it to faculty senate at the start of the academic semester. With that in mind, I was hoping to get your statement by Wednesday, February 3, 2010. If that date doesn't work, please let me know.

Thank you in advance for your time and consideration.

Franklin A. Newton  
Assistant Dean  
College of Earth, Ocean, and Environment  
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111 Robinson Hall  
302.831.6295 (ph)  
302.831.4389 (fx)

**From:** Peter Monk [mailto:monk@math.udel.edu]  
**Sent:** Wednesday, January 13, 2010 8:46 PM  
**To:** Newton, Franklin A.  
**Subject:** Re: proposal for undergraduate degree in Marine Science

Dear Professor Newton

We will be delighted to welcome your students, and are happy to support your proposed degree program.

Sincerely

Peter Monk

On Jan 13, 2010, at 4:40 PM, Newton, Franklin A. wrote:

Dr. Monk-

I write to seek your assistance. A committee of CEOE faculty has organized a proposal for an undergraduate major in Marine Science with a concentration in Marine Biology. Based on research of students here as well as programs at comparator institutions, we believe this proposal meets a need for students interested in studying the Marine Science.

A full description is attached for your consideration. Relevant to your department is the inclusion in the curriculum of two Mathematics courses. The specific courses are:

- \* MATH241 Analytic Geometry and Calculus A
- \* MATH242 Analytic Geometry and Calculus B

As you are aware, the faculty senate requires that affected departments indicate that they support (or don't object to) the inclusion of their courses in the major curriculum. It is my hope that you can send me a statement (hard copy or emailed) indicating your department's support so that I may include it with the packet to the senate. It is in the final stages of our internal process and we are hoping to get it to faculty senate at the start of the academic semester. With that in mind, I was hoping to get your statement by Wednesday, February 3, 2010. If that date doesn't work, please let me know.

Thank you in advance for your time and consideration.

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## **Proposed Resolution Wording**

Recommendation from the Committee on Undergraduate Studies ( , Chair) with the concurrence of the Coordinating Committee on Education ( , Chair) and the Executive Committee ( , Chair) for the request to add a new major in Marine Science with a concentration in Marine Biology (attachment)

**WHEREAS**, The State of Delaware and the University of Delaware have rich traditions connected to the marine environment and the study of marine science; and

**WHEREAS**, We are a coastal state and as such, it is imperative to have a citizenry that is well versed in the issues that impact our marine and coastal areas; and

**WHEREAS**, there are currently limited opportunities for undergraduate students to study marine ecosystems, species and the rich biodiversity in the region; and

**WHEREAS**, A Marine Science degree with a concentration in Marine Biology best reflects the interdisciplinary nature of the field, and is philosophically consistent with our graduate academic programs; and

**WHEREAS**, the Bachelor of Science degree in Marine Science provides students with a solid academic foundation and a complementary pathway for success for entrance into graduate programs or careers in the field; and

**WHEREAS**, the Marine Programs within CEOE are internationally renowned academic programs taught by faculty that are leaders in the field, the Undergraduate Major capitalizes on this valuable resource and provides undergraduate students with an intellectually rigorous experience enabling them to emerge as the next generation of leaders; be it therefore

**RESOLVED**, that the Faculty Senate approves provisionally, for five years, the establishment of a new major entitled Baccalaureate of Science in Marine Science with a concentration in Marine Biology effective February 7, 2011.