

# College of Marine Sciences

## Graduate Degrees

2002-2003

Department	Major	Degree
<b>Master's Level</b>		
Marine Science	Marine Science	Master of Science
	Hydrographic Science	Master of Science
Coastal Sciences	Coastal Sciences	Master of Science
<b>Doctoral Level</b>		
Marine Science	Marine Science	Doctor of Philosophy
Coastal Sciences	Coastal Sciences	Doctor of Philosophy

# College of Marine Sciences

Darrell Jay Grimes, Dean

Sharon H. Walker, Associate Dean for Outreach

Vernon L. Asper, Associate Dean for Research and Sponsored Programs

P.O. Box 7000

Ocean Springs, MS 39566-7000

(228) 872-4200

The College of Marine Sciences (COMS) offers a multidisciplinary graduate-level, research-oriented academic degree program. The College has three missions: research, education, and outreach. Research is marine-related, focused on all marine environments from the open ocean to coastal environments and from continental shelves to estuaries. Research areas are aquaculture, biodiversity and systematics, biological oceanography, chemical oceanography, coastal ecology, coastal oceanography, environmental fate and effects, fisheries science, geological oceanography, marine biology, marine chemistry, marine geology, marine sedimentology, marine microbiology and parasitology, numerical ocean modeling, science education, and physical oceanography.

College faculty are located on the Mississippi Gulf Coast and in Hattiesburg. Gulf Coast locations include the John C. Stennis Space Center, near Bay St. Louis, the J. L. Scott Marine Education Center and Aquarium in Biloxi, and the Gulf Coast Research Laboratory in Ocean Springs. Expertise in numerical modeling is provided by scientists in the College's Center for Ocean and Atmospheric Modeling (COAM). The College offers Master of Science and Doctor of Philosophy programs in **Coastal Sciences** (through the Department of Coastal Sciences), **Marine Science** (through the Department of Marine Science) and **Marine Biology** (through the Department of Biological Sciences). The Department of Marine Science also offers a Master of Science in Hydrographic Science. Faculty in the Department of Geology, Department of Chemistry, Center for Science and Mathematics Education, and the Scientific Computing program are also associated with the College.

## COMS Campuses and Academic Programs

### Gulf Coast Research Laboratory

The Gulf Coast Research Laboratory (GCRL), located in Ocean Springs, has offered summer courses in the marine sciences since 1947. Over 160 researchers, technical and support personnel, and students work on this campus; research emphasis areas include aquatic animal health, marine aquaculture, aquatic biodiversity, coastal ecology, fate and effects of environmental pollutants, and fisheries science. The GCRL is home to the Department of Coastal Sciences and the Center for Fisheries Research and Development.

### J. L. Scott Marine Education Center and Aquarium

The state's window on the sea, the J. L. Scott Marine Education Center and Aquarium (MEC&A), located in Biloxi, features 48 aquariums and a central 42,000-gallon Gulf of Mexico tank. Science education and a suite of hands-on marine education programs have earned the MEC&A an international, award-winning reputation.

### Stennis Space Center

The Stennis Space Center (SSC) is home to more oceanographers than any other location in the world. Students, staff, and faculty have the opportunity to interact with more than 1,000 scientists, engineers, and technical personnel who work at this site located near Bay St. Louis, MS. Collaborations are possible with personnel at the Naval Research Laboratory, the Naval Oceanographic Office, the Naval Meteorology and Oceanography Command, the National Oceanic and Atmospheric Administration's National Data Buoy Center, the National Marine Fisheries Service, the U.S. Environmental Protection Agency's Gulf of Mexico Program, the U.S. Geological Survey, the National Aeronautics and Space Administration laboratories, and other agencies. SSC is home to the Department of Marine Science, Center for Ocean and Atmospheric Modeling, Center for Trace Analysis, and Hydrographic Science Research Center.

## COMS Academic Programs

The Department of Marine Science (MAR) graduate emphasis areas are biological marine science, physical marine science, geological marine science, and chemical marine science. The Department of Coastal Sciences (COA) offers specialized courses at the graduate level focused on research in the areas of aquaculture, coastal and marine fisheries, coastal geology, invertebrate zoology and biology, coastal ecology, parasitology, estuarine chemistry, toxicology, botany, applied molecular techniques, science education, and biodiversity and systematics. Undergraduates interested in preparing for graduate studies in Marine Science or Coastal Sciences should pursue a bachelor's degree program in their department of choice, developing a strong background in biology, chemistry, geology, physics, and mathematics through calculus. Students interested in the graduate Marine Biology program in the Department of Biological Sciences should review that section.

## Department of Coastal Sciences

William E. Hawkins, Chair  
P.O. Box 7000  
Ocean Springs, MS 39566-7000  
(228) 872-4215  
william.hawkins@usm.edu

Mark S. Peterson, Coordinator of Graduate Studies  
P.O. Box 7000  
Ocean Springs, MS 39566-7000  
(228) 872-4203  
mark.peterson@usm.edu

*Brouwer, Comyns, Grimes, Hawkins, Heard, Lotz, J. Lytle, T. Lytle, Moncreiff, Otvos, Overstreet, Perry\*, Peterson, Rakocinski, Stuck, Walker*

*\*Associate Graduate Faculty*

The Department of Coastal Sciences offers both the Master of Science and Doctor of Philosophy degrees in Coastal Sciences. Given the interdisciplinary nature of this department, students interested in pursuing a degree in Coastal Sciences should develop a strong background and working knowledge in the basic sciences. Experience with computers and a basic background in statistics is recommended.

### Master of Science Program

The College of Marine Sciences offers a Master of Science in Coastal Sciences with specialization in a wide range of subdisciplines including aquaculture, coastal ecology, biodiversity and systematics, coastal geology, environmental chemistry, estuarine and marine botany, fisheries ecology, geochemistry, parasites and diseases, and toxicology. Knowledge deficiencies will be eliminated through completion of elective courses as determined by the student's three-member graduate committee.

### Admission Requirements

Granting of regular admission to the Master of Science Degree Program is based on several criteria, including but not limited to the following:

- 1) Submission of complete undergraduate transcript(s). Regular admission to the Master of Science Degree Program requires a minimum grade point average (GPA) of 2.75 in the last two years of undergraduate credit, and a minimum overall GPA of 3.0 in a science based major, and an overall GPA of 3.0 or above;
- 2) Submission of results of the general section of the Graduate Record Examination (GRE). Successful applicants have highly competitive scores;
- 3) A letter of intent stating interests and career goals as well as three letters of recommendation. The letters of recommendation should be from persons qualified to assess the applicant's readiness for graduate study and should be sent to the department. The department will not initiate its review of an application until the essay and letters of recommendation are provided. The essay is used as an example of the applicant's writing and communication skills, and provides information concerning the compatibility of the applicant's interests with departmental research interests. The essay and letters of recommendation should be sent to the Office of Student Services at COMS-GCRL; and
- 4) A minimum score of 560 on the paper test or 220 on the computer test is required on the Test of English as a Foreign Language (TOEFL) for applicants whose native language is other than English.

Because more qualified students apply to the Department of Coastal Sciences than can be accepted, admission is selective and a complete application must be submitted.

Conditional admission to the Department of Coastal Sciences is considered for students who meet Graduate School standards for conditional admission and who are sponsored by a member of the faculty of Coastal Sciences. The sponsor must provide a written statement indicating willingness to serve as the applicant's major professor. Conditional students cannot obtain a Departmental assistantship but can be awarded a research stipend from a major professor's grant.

Conditionally admitted students must maintain a 3.0 GPA for the first nine (9) hours of formal course work numbered 500 and above or on all course work taken while meeting this nine (9) hours requirement, not including research hours and only including up to three (3) hours of Special Problems. If this requirement is not met, the student is not allowed to remain in the program. Upon recommendation of the department chair and approval by the Graduate Dean, the conditionally admitted student may have their admission status changed to "regular admission."

Students wishing to be considered for a limited number of graduate assistantships for the academic year beginning in the fall semester must have their completed application package to the Graduate School no later than February 15. All applications for admission reviewed after this date will be considered if space is available, or will be placed in consideration for the next term.

### Program Requirements

A minimum of thirty (30) graduate hours is required for this degree. Students must meet the general requirements of the Graduate School of The University of Southern Mississippi. Students advance to candidacy for the M.S. degree by completing the entire Program of Study (projection of coursework taken during tenure in Coastal Sciences; see below) developed in consultation with their graduate committee with a 3.0 average or above, completing an approved thesis prospectus, and successfully passing the oral and/or written thesis comprehensive examination.

The following list describes major additional requirements:

- 1) Choose a major professor and establish a three-member graduate thesis committee by the end of the second semester in residency;
- 2) Develop a Program of Study in consultation with major professor and thesis committee by the end of the second semester of residency. Graduate students cannot accumulate more than two Cs;
- 3) Submit a research prospectus approved by the graduate thesis committee by the end of the third semester in residency;
- 4) Pass an oral and/or written comprehensive examination by the end of the third semester in residency (administered by the thesis committee); and
- 5) Present an acceptable copy of the thesis to the graduate thesis committee at least ten days prior to a public defense of the thesis at a publicly announced meeting. (See Thesis Timetable in front section of this **Bulletin**.)
- 6) Continuous Enrollment Requirement

### Program of Study

	<b>Hours</b>
COA 601 Coastal Processes I .....	3
COA 602 Coastal Processes II .....	3
COA 603 Professional Skills .....	2
PSY 662 Quantitative Methods I* .....	3
COA 691 Research in Coastal Sciences .....	6
COA 698 Thesis .....	6
Electives (Determined by major adviser and advisory committee)** .....	7

\*Students can substitute another 3 hour statistics course approved by the major adviser and Coordinator of Graduate Studies.

\*\*COA 697 - Independent Study and Research, COA 698 - Thesis, do not count toward this 7 credit hours of electives for the M.S. degree. This 7 credit hours of electives is the minimum requirement and additional courses may be recommended.

### Doctor of Philosophy Program

The College of Marine Sciences offers a Doctor of Philosophy Degree in the Department of Coastal Sciences with specialization in a wide range of subdisciplines including aquaculture, coastal ecology, biodiversity and systematics, coastal geology, environmental chemistry, estuarine and marine botany, fisheries ecology, geochemistry, parasites and diseases, and toxicology. The Ph.D. program emphasizes excellence in research. Knowledge deficiencies will be eliminated through enrollment in elective courses as determined by the student's five-member graduate committee.

Qualified students holding a bachelor's degree (B.S./B.A.) or M.S. degree in a relevant field of science are encouraged to apply for admission.

## Admission Requirements

Granting of regular admission to the Doctor of Philosophy Degree Program is based on several criteria, including but not limited to the following:

- 1) Regular admission to the Doctor of Philosophy Degree Program requires consideration of the undergraduate overall GPA of 3.0 in a science-based major and a minimum GPA of 3.5 on all previous graduate work;
- 2) Submission of results of the general section of the Graduate Record Examination (GRE). Successful applicants have highly competitive scores;
- 3) A letter of intent stating interests and career goals as well as three letters of recommendation from persons qualified to assess the applicant's readiness for graduate study and should be sent to the department or school. The Department will not initiate its review of an application until the essay and letters of recommendation are provided. The essay is used as a sample of the applicant's writing and communication skills, and provides information concerning the compatibility of the applicant's interests with departmental research interests. These should be sent to the Office of Student Services at COMS-GCRL; and
- 4) A minimum score of 560 on the paper test or 220 on the computer test is required on the Test of English as a Foreign Language (TOEFL) for applicants whose native language is other than English.

Because more qualified students apply to Coastal Sciences than can be accepted, admission is selective and a complete application must be submitted.

Conditional admission to the Department of Coastal Sciences is considered for students who meet Graduate School standards for conditional admission and who are sponsored by a member of the faculty of Coastal Sciences. The sponsor must provide a written statement indicating willingness to serve as the applicant's major professor. Conditional students can not obtain a Departmental assistantship but can be awarded a research stipend from a major professor's grant.

Conditionally admitted students must maintain a 3.25 GPA for the first nine (9) hours of formal course work numbered 600 and above or on all course work taken while meeting this requirement, not including research hours and only including up to three (3) hours of Special Problems. If this requirement is not met, the student is not allowed to remain in the program. Upon recommendation of the departmental chair and approval by the Graduate Dean, the conditionally admitted student may have their admission status changed to "regular admission."

Students wishing to be considered for a limited number of graduate assistantships for the academic year beginning in the fall semester must have their completed application package to the Graduate School no later than February 15. All applications for admission reviewed after this date will be considered if space is available, or will be placed in consideration for the next term.

## Program Requirements

A minimum of eighty-four (84) hours beyond a B.S./B.A. degree or a minimum of fifty-four (54) graduate hours beyond the M.S. degree is required for this degree. Students must meet the general requirements of the Graduate School of The University of Southern Mississippi. Students advance to candidacy for the Ph.D. degree by completing the entire Program of Study (projection of coursework taken during tenure in Coastal Sciences; see below) developed in consultation with their graduate committee with a B average or above, completing an approved dissertation prospectus, and successfully passing the written and oral comprehensive examinations.

The following list describes major additional requirements:

- 1) Choose a major professor and establish a five-member graduate doctoral committee by the beginning of the third semester in residency;
- 2) The major adviser, the Coordinator of Graduate Studies, and the Department Chair will consider the student's academic record and interview the student at a committee meeting to assess the student's ability to pursue additional graduate work by the end of the first semester of residency. This assessment fulfills the requirement for a qualifying examination as determined by the Graduate Council of The University of Southern Mississippi as stated in this Bulletin;

- 3) Develop a Program of Study (projection of coursework taken during tenure in Coastal Sciences) in consultation with major professor and dissertation committee by the end of the third semester of residency. Graduate students cannot accumulate more than two Cs;
- 4) **Research Tool(s).** The Ph.D. program requires that the student's Ph.D. committee will convene and examine the student academic background and progress to date and will together develop a set of research tools based on the student's goals. These research tools will not exceed a total of 15 hours in addition to the core courses and other degree requirements.
- 5) Submit a research prospectus approved by the graduate doctoral committee by the end of the fourth semester in residency;
- 6) Pass an oral and written comprehensive examination by the end of the sixth semester in residency which is administered by the doctoral committee; and
- 7) Present an acceptable copy of the dissertation to the graduate doctoral committee at least ten days prior to a public defense of the dissertation at a publicly announced meeting. (See Dissertation Timetable in front section of this *Bulletin*.)
- 8) A 3.0 GPA is required for graduation.
- 9). Residency. Students must meet the residency requirements specified in the *Bulletin*
- 10) Continuous Enrollment Requirement

## Program of Study

### Hours

COA 601 Coastal Processes I .....	3
COA 602 Coastal Processes II .....	3
COA 603 Professional Skills .....	2
PSY 662 Quantitative Methods I* .....	3
COA 791 Research in Coastal Sciences .....	16
COA 898 Dissertation .....	12
Electives (Determined by major adviser and advisory committee)** .....	15

\*Students can substitute another 3 hour statistics course approved by the major adviser and Coordinator of Graduate Studies.

\*\*COA 797 - Independent Study and Research, COA 898 - Dissertation, do not count toward the fifteen (15) hours of electives for the Ph.D. The above courses account for the minimum fifty-four (54) hours required for the Ph.D. for students entering with a M.S. degree. The additional thirty (30) hours of required electives for students entering with a B.S./B.A. degree are selected by the graduate student in consultation with the major adviser and the student's advisory committee. The fifteen (15) hours of electives are the minimum requirement and additional courses may be required.

## Department of Marine Science

Denis A. Wiesenburg, Chair  
 Department of Marine Science  
 John C. Stennis Space Center  
 Stennis Space Center, MS 39529  
 (228) 688-3177  
 denis.wiesenburg@usm.edu

*Asper, Bontempi, Brunner, Caruthers, Dodd, Howden, Kamenkovich, Lohrenz, Nechaev, Redalje, Shiller, Wells, Wiesenburg*

The Department of Marine Science offers both the Master of Science and Doctor of Philosophy degrees in Marine Science and a Master of Science in Hydrographic Science. Graduate level education and research programs are offered in four emphasis areas of marine science (biological, geological, chemical, and physical). These areas include numerical ocean modeling, remote sensing, bathymetry and mapping, positioning, acoustics, and hydrographic surveying. The Marine Science faculty are drawn from its location at the Stennis Space Center (near Bay St. Louis), and from other departments in the College of Science and Technology (Hattiesburg). Scientists affiliated with the Naval Research Laboratory, Naval Oceanographic Office, National Oceanographic and Atmospheric Administration, National Aeronautics and Space Administration and other agencies at the Stennis Space Center and elsewhere provide additional state-of-the-art research and educational opportunities in Marine Science and Hydrographic Science.

The best preparation for students interested in pursuing a graduate degree in Marine Science or Hydrographic Science would be to develop a strong working knowledge in calculus, applied mathematics, statistics, the basic sciences (biology, chemistry, geology, physics) and engineering.

Experience with computers is highly recommended. We realize that not all students will have gained the ideal background for pursuing a M.S. or Ph.D. in Marine Science or Hydrographic Science. Deficiencies will normally be made up during the student's first year.

## Master of Science Programs

### Admission Requirements

In addition to the general admission and academic requirements for all graduate programs as set forth in this **Bulletin**, regular admission to the Master's program in Marine Science or in Hydrographic Science requires successful completion of the **Graduate Record Examination** and a high grade point average for the last two years of undergraduate study. Successful applicants have highly competitive scores and have grade point averages of 3.0 or above. Also required are three letters of recommendation from persons qualified to assess the applicant's readiness for graduate study and should be sent to the department. A letter of intent should also be sent to the department chair expressing personal academic, research, and career goals. This letter is used in two ways in the admission process. It provides a sample of the applicant's writing competency and communication skills, and provides information concerning the compatibility of the applicant's interests with departmental research interests. A minimum score of 560 is required on the Test of English as a Foreign Language (TOEFL) for applicants whose native language is other than English. Applicants who are not eligible for regular admission may be considered for conditional admission. Conditionally admitted students must maintain a 3.0 GPA for the first nine (9) hours of course work numbered 500 and above or on all course work taken while completing this nine (9) hour requirement. If this requirement is not met, the student is not allowed to remain in the program. Upon recommendation by the department chair and approval by the Graduate Dean, the conditionally admitted student may have his or her admission status changed to "regular admission." For students wishing to be considered for graduate assistantships for the academic year beginning in the fall semester, application materials should be received no later than March 1.

### Program Requirements for Master of Science in Marine Science

A total of 34 hours of graduate level courses (18 hours of 600 level or higher) with a minimum GPA of 3.0 must be completed in order to fulfill the Master of Science degree requirements. All entering graduate students must complete the four core courses, generally by the end of their first year in residence. Students advance to candidacy for the M.S. degree by completing all the core courses with a grade of B or better, successfully passing the department qualifying comprehensive examination (administered after the core courses are completed), and completing a thesis prospectus. A graduate student can accumulate no more than two Cs. Other program course requirements include six (6) hours of Thesis and at least one (1) hour of Seminar in Marine Science. The required courses account for 24 of the total 34 hours; the remaining 10 hours (courses numbered 600 and above) must be chosen by the student (after consultation with the student's adviser) from a list of elective courses approved by the department. More information on Marine Science degree requirements and additional course listings can be obtained by writing to the department chair.

#### Continuous Enrollment Requirement

#### Required Courses

##### Hours

MAR 501	Biological Oceanography.....	3
MAR 501L	Biological Oceanography Laboratory .....	1
MAR 541	Marine Chemistry .....	3
MAR 541L	Marine Chemistry Laboratory .....	1
MAR 561	Physical Oceanography.....	3
MAR 561L	Physical Oceanography Laboratory.....	1
MAR 581	Geological Oceanography.....	3
MAR 581L	Geological Oceanography Laboratory .....	1
MAR 689	Seminar in Marine Science .....	2
MAR 698	Thesis .....	6
	Approved Electives (600 level or above).....	10

## Program Requirements for Master of Science in Hydrographic Science

The M.S. degree in Hydrographic Science is a non-thesis degree program. A total of 36 semester hours of graduate level courses (18 hours of 600 level or higher) with a minimum GPA of 3.0 must be completed to fulfill the Master of Science in Hydrographic Science degree requirements. Student must also take a comprehensive examination. A graduate student can accumulate no more than two Cs.

Students admitted to the M.S. in Hydrographic Science degree program are required to complete a set of core courses. There are a total of 27 semester hours of required core course work. There is a set of three elective courses. Each degree-seeking student must take at least one of these 3-hour elective courses. All students admitted to the M.S. degree program in Hydrographic Science must choose from one of two Options at the time they are admitted to the program. Successful completion of either Option I or Option II, in addition to passing all the required and elective courses, will constitute the completion of degree requirements. Option I is designed for those student who wish to complete a more practical field-oriented degree program. Option II is designed for student who wish to complete a more theoretical and classroom-oriented program and involves completion of a Capstone Review project, usually consisting of, but not limited to, an extended literature review of an appropriate Hydrographic Science topic.

Continuous Enrollment Requirement

### Required Courses (Options I and II)

#### Hours

HYD 600	Classical Geodesy.....	4
HYD 601	Hydrographic Data Management .....	2
HYD 602	Marine Geology for Hydrographers .....	2
HYD 603	Law and Policy for Hydrographic Science .....	1
HYD 604	Satellite Geodesy and Positioning .....	3
HYD 605	Applied Bathymetry .....	3
HYD 606	Nautical Cartography and GIS .....	3
MAR 561	Physical Oceanography.....	3
MAR 667	Waves and Tides.....	3
MAR 668	Applied Ocean Acoustics.....	3
	Approved Elective.....	3

### Option I Required Courses

#### Hours

HYD 608	Practical Hydrographic Science .....	2
HYD 609	Nautical Science .....	1
HYD 610	Hydrographic Science Field Project .....	3

### Option II Required Courses

#### Hours

HYD 696	Capstone Review .....	3
HYD 601	Approved Elective .....	3

## Doctor of Philosophy Program

The College's Department of Marine Science offers a Doctor of Philosophy in Marine Science with specialization in a wide range of marine science fields, including biological, geological and physical oceanography, and marine chemistry. Other areas of specialization numerical ocean modeling. The Ph.D. program emphasizes excellence in research. Qualified students holding either a bachelor's or master's degree in a relevant field of science, mathematics, or computer science are encouraged to apply for admission to the Ph.D. program.

Students must meet the general requirements set forth in the **Graduate Bulletin** of the University of Southern Mississippi. The Ph.D. in Marine Science requires eighty-four (84) graduate hours beyond the bachelor's degree or fifty-four (54) graduate hours beyond the master's degree.

## Admission Requirements

In addition to the general admission and academic requirements for all graduate programs as set forth in this **Bulletin**, regular admission to the Ph.D. program in Marine Science requires successful completion of the **Graduate Record Examination** and a high grade point average for the last two years of undergraduate study as well as a 3.50 GPA on previous graduate study. Successful applicants have highly competitive scores and have a grade point average of 3.0 or above for undergraduate work and 3.5 on previous graduate study. Also required are three letters of recommendation from persons qualified to assess the applicant's readiness for graduate study and should be sent to the department or school. A letter of intent should also be sent to the department chair expressing personal academic and research goals. A minimum score of 560 is required on the Test of English as a Foreign Language (TOEFL) for applicants whose native language is other than English. For students wishing to be considered for graduate assistantships for the academic year beginning in the fall semester, application materials should be received by the department no later than March 1.

## Program Requirements

### Required Courses

	<b>Hours</b>
MAR 501 Biological Oceanography . . . . .	3
MAR 501L Biological Oceanography Laboratory . . . . .	1
MAR 541 Marine Chemistry . . . . .	3
MAR 541L Marine Chemistry Laboratory . . . . .	1
MAR 561 Physical Oceanography . . . . .	3
MAR 561L Physical Oceanography Laboratory . . . . .	1
MAR 581 Geological Oceanography . . . . .	3
MAR 581L Geological Oceanography Laboratory . . . . .	1
MAR 689 Seminar in Marine Science . . . . .	2
MAR 898 Dissertation . . . . .	12
Approved Electives . . . . .	12*

\*MAR 691, MAR 791 - Directed Research in Marine Science, MAR 697, MAR 797- Independent Study and Research, MAR 698 - Thesis and MAR 898 - Dissertation, do not count toward this twelve (12) credit hour approved elective requirement for the Ph.D. The above courses account for forty-two (42) of the total fifty-four (54) hours (students entering with a master's degree) or eighty-four (84) hours (students entering with a bachelor's degree) required for the Ph.D. Course listings for the additional 12-42 required hours can be obtained by writing to the department chair.

### Other Requirements

1. The student is required to pass an oral and/or written qualifying examination.
2. Research Tool(s). The Ph.D. program requires (a) proficiency in two of the following languages: French, German, Russian, or Spanish, or (b) proficiency in one language and in statistics or computer science, or
3. Selection and approval of a suitable research problem.
4. The student is required to pass an oral and/or written comprehensive examination to determine the student's comprehension of course material and the student's ability to pursue the proposed research.
5. Completion and successful defense of a scholarly dissertation based on the student's original research.
6. A 3.0 GPA is required for graduation.
7. Residency. Students must meet the residency requirements specified in the *Bulletin*.
8. Continuous Enrollment

## Summer Academic Program at GCRL

College of Marine Sciences  
Gulf Coast Research Laboratory  
P.O. Box 7000  
Ocean Springs, MS 39566-7000  
(228) 872-4201

The College of Marine Sciences (COMS) offers a selection of accelerated, field-oriented, graduate and undergraduate courses during the summer at its Ocean Springs campus, the Gulf Coast Research Laboratory (GCRL).

Summer courses at GCRL are listed in this Bulletin under Coastal Sciences (COA), Marine Science (MAR), and Biological Sciences (BSC) and, where appropriate, are cross-listed by Geology, Chemistry, and Science and Mathematics Education. Summer courses are available for graduate credit. Graduate students may also conduct thesis, dissertation, and directed research at GCRL under the supervision of faculty in the College of Marine Sciences (CMS).

## Admission

Students are admitted to Summer Program courses on the basis of academic performance and credentials. Students are asked to apply directly to COMS/GCRL for admission to the accelerated summer courses so that their records can be reviewed for admission. Admissions will be made on a competitive basis, with a limited number of seats held open for general registration during the SOAR program to accommodate the Marine Science and Coastal Sciences graduate degree programs and the Marine Biology undergraduate degree program within USM. Contact the Office of Student Services, College of Marine Sciences, Gulf Coast Research Laboratory, P.O. Box 7000, Ocean Springs, MS 39566-7000 for application materials. The Gulf Coast Research Laboratory is affiliated with 65 colleges and universities whose students participate in the summer academic program on a competitive basis at both the graduate and undergraduate levels. Applications for admission to the COMS/GCRL summer academic program are accepted beginning the second week of January. Decisions on admission to Summer Program courses will be made during the last week of March. Date of application is used to award space in cases where academic credentials are similar; early application to the program is prudent.

## Course Loads

The summer academic program courses are offered during two 5-week terms. Because courses are taught at an accelerated pace, i.e., an entire semester of lecture and laboratory is taught in five weeks, a student is allowed to enroll in only one course each term. Students are able to earn up to twelve (12) semester hours credit during the summer. Classes meet each weekday with particular times scheduled for field trips, classroom instruction, and laboratory work.

## Housing/Meals for the Summer Program

Housing is available on campus in an air-conditioned dormitory (double occupancy). The dining hall serves three meals daily to dormitory residents. Commuters may also purchase meals on campus for a modest cost.

## Fees

Application Fee .....	\$ 50.00
Housing and Meals .....	\$ 130.00 per week
Tuition .....	See "Schedule of Fees" in this <b>Bulletin</b> .

Students pay fees directly to GCRL. Fees are subject to change without prior notice.

## Calendar

Application Deadline .....	May 1, 2002
First summer term begins .....	May 28, 2002
Second summer term begins .....	July 1, 2002
Summer session ends .....	August 2, 2002

# Department of Biological Sciences

Frank R. Moore, Chair  
 Department of Biological Sciences  
 Hattiesburg, MS 39406  
 (601) 266-4746

The University offers both the Master of Science and Doctor of Philosophy degrees in Biological Sciences with an emphasis in Marine Biology. College faculty participate in these degree programs. See the Department of Biological Sciences section of this *Bulletin* for admission and program requirements.