Graduate Council Agenda  
Meeting Wednesday, December 6, 2017  
EHFA, room 101 @ 11:45 am (ROOM CHANGE)

Old Business

1. Approve minutes from November 1, 2017  
2. Universal application deadlines  
3. Proposal submitted for Graduate Student Council (GSC)  
4. New curriculum approval process update  

New Business

1. ACAD-SENA 111  
2. Course changes:
   a. Current course description:
      IST 678 Business Intelligence and Analytics. (3) Course provides an introduction to Business Intelligence, including analytics, processes, methodologies, infrastructure and current practices used to transform business data into useful information and support business decision-making. Students will learn to extract and manipulate data from these systems and assess statistical analysis along with reporting options such as management, dashboards, and balanced scorecards. F, S, SU

   Proposed catalog description:
   IST 678 Business Intelligence and Analytics. (3) (Prereq: grade of C or better in IST 670) This course provides an introduction to Business Intelligence, including analytics, processes, methodologies, infrastructure and current practices used to transform business data into useful information and support business decision-making. Students will learn to extract and manipulate data from these systems and assess statistical analysis along with reporting options such as management, dashboards, and balanced scorecards. F, S, SU

   b. Current course description:
      IST 659 Special Topics in Information Systems Technology-Security Patterns. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course examines the field of security design patterns. Students will survey a set of security patterns, study implementation options for selected patterns, and contribute additional pattern documentation to improve the effectiveness and usability of selected patterns for the general community. Project work in this course would include the implementation of security patterns to a real world problem. F, S, SU

   Proposed catalog description:
   IST 659 Special Topics in Information Systems Technology. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course examines the emerging topics in the field of Information Systems Technology. The course will include a significant engagement in writing as a form of critical inquiry and scholarly expression. Project work in this course would include the implementation of emerging IST topic related to a real world problem. F, S, SU.
c. **Current course description:**
IST 669 Special Topics in Information Security-Secure Cloud Computing. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course explores the special topics in security - specifically fundamentals of cloud computing and addresses the cloud security related risks, issues and challenges associated with the cloud by exploring the security architectures, cloud software security and cloud networking security tools and techniques. Project work in this course would include detailed solutions to the cloud computing security related industry problems.

**Proposed catalog description:**
IST 669 Special Topics in Information Security. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course examines the emerging topics in the field of Information Security. The course will include a significant engagement in writing as a form of critical inquiry and scholarly expression. Project work in this course would include the implementation of emerging Information Security topic related to a real world problem. F, S, SU.

d. **Current course description:**
IST 679 Special Topics in Data Analytics -Big Data Analytics. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course covers the fundamental concepts of Big Data management and analytics. In addition, this course is designed to equip the students with the analysis, design and development of the applications that deal with very large volumes of data as well as in proposing scalable solutions for them to aid business intelligence and scientific discovery. Project work in this course would include the implementation of solutions to the big data related industry problems. F, S, SU

**Proposed catalog description:**
IST 679 Special Topics in Data Analytics. (3) (Prereq: IST 650, IST 660, IST 661, IST 670, IST 671 with “C” or better) Course examines the emerging topics in the field of data analytics. The course will include a significant engagement in writing as a form of critical inquiry and scholarly expression. Project work in this course would include the implementation of emerging data analytics topic related to a real world problem. F, S, SU

3. **Changes in a graduate program:**
   a. **Certificate in Applied Computing and Information:** We request to remove the graduate certificate program from the catalog, we are not removing the graduate courses of this program from the catalog. As such, we do not have any impact of this action on existing degree programs.

   b. **M.S. in Information Systems Technology with concentration in Security and Analytics – Current Description:**
The Master of Science in Information Systems with a concentration in Security and Analytics is a program to prepare future leaders in the areas of information security and data analytics through critical examination of both academic and practical applications of
various segments of the information security and analytics industry. The faculty seeks to challenge, engage, and cultivate students in becoming skilled and knowledgeable information security and data analytics professionals.

**Student Learning Outcomes**

After graduating from the program, the student shall be able to:

1. Engage with the IST (Information Systems Technology) professional or academic communities through superior communication and leadership skills to contribute to the knowledge bases of the fields such as Information Security/Data Analytics.
2. Apply analytical, critical thinking, and technical skills to a domain of work in the IST field such as Information Security and Data Analytics.
3. Explore and extend creative use of emerging Information System Technologies in a secure manner.
4. Analyze, evaluate, design, and implement information services to enhance the value of information in a variety of professional and academic settings.
5. Derive and effectively communicate actionable insights from a vast quantity and a variety of data.
6. Critically evaluate and manage information security policies, principles, processes, services and technologies to manage risks and security threats when applied to different IST settings.
7. Critically evaluate current state IST infrastructure and architect, design, and implement solutions to ensure a secure IST infrastructure.

**Admission to Study/Graduate Applications**

Applications for graduate study should be directed to the Office of Graduate Studies at Coastal Carolina University.

**Admission Requirements**

1. Completion of a graduate degree application and payment of the application fee.
2. Submission of an official undergraduate transcript from each post-secondary school or college previously attended, including any graduate study previously undertaken.
3. Evidence of having received a baccalaureate degree from a regionally accredited institution in this country or its equivalent at a foreign institution based on a four-year degree with a cumulative GPA of 3.0.
4. Competitive official GRE scores. GRE requirement may be waived if the student has completed a graduate degree or completed graduate coursework or earned a related professional certification, or have taken the GMAT.
5. International students whose native language is not English must provide official results from tests taken within the last three (3) years or one of the following acceptable means of documenting English language proficiency consistent with success in graduate programs. (Note: higher scores may be required of some graduate programs so applicants are urged to consult their desired program to identify whether a higher score is required):
   a. A minimum score of 550 on the paper-based (PBT) or 79 on the internet (iBT) Test of English as a Foreign Language (TOEFL);
   b. A minimum score of 6.5 on the International English Language Testing System (IELTS) exam;
   c. Certificate of Completion of level 112 of English for Academic Purposes (EAP) from
an ELS Language Center;
d. Pearson Test of English (PTE) Academic with a score of 59;
e. Cambridge (Certificate of Advanced English (CAE) with a minimum level of C1;
f. Cambridge Certificate of Proficiency in English (CPE) with a minimum level of C1;
g. Michigan English Language Assessment Battery (MELAB) with a score of 77;
h. Test of English for International Communication (TOEIC) with a score of 745;
i. Bachelor’s degree earned from a regionally accredited U.S. institution of higher education within the last three (3) years.

6. Submission of at least two letters of recommendation from individuals familiar with the academic ability, level of responsibility, and work ethic of the applicant.

7. Submission of a resume.

8. Submission of a written statement of educational and career goals, how this degree will fulfill those goals and the subject area of research or career interest while completing this degree.

9. Prerequisites required for admission are undergraduate credits in:
a. Computer Networks or Information Security (3 credit hours)
b. Programming or Web Development (3 credit hours)
c. Database Design or SQL Development (3 credit hours)
d. Statistics (3 credit hours)

Undergraduate course credit requirements may be waived depending on the relevant industry experience or completion of the professional certification by the applicant. Admission decisions are made when all evidence of the applicant’s ability to succeed in graduate studies has been submitted.

**Provisional Admission**

Applicants may receive provisional admission to the MISTSA program if they do not meet the stated admission requirements and are entering the University for the first time or are returning to the University after an extended absence. Students who are admitted provisionally are limited to 12 credit hours of coursework toward the degree program.

**Removal of Provisional Status**

To remove provisional status, within the first two academic semesters (either Fall, Spring or Spring, Fall), the student must:

1. Earn a “B” or better in two core courses;
2. Maintain a 3.0 GPA in all graduate courses taken;
3. Earn a “B” or better in all undergraduate prerequisites required as specified in the provisional acceptance letter.

**Degree Requirements**

The Master of Science in Information Systems Technology with a Concentration in Security and Analytics requires:

1. Successful completion of an approved program of study with a minimum of 33 graduate credit hours.
2. A minimum grade point average of 3.0 (B) on all coursework.
3. A maximum of two (2) classes may be completed below the grade of “B” before dismissal from the program.
4. If a student has chosen the thesis option, completion, presentation, and successful
defense of a thesis or completion of a project(s) followed by an oral presentation and written report summarizing the project experience.

5. All work applied toward the degree must be earned in the six (6) years immediately preceding the completion of the graduate program.

Curriculum
The Master of Science in Information Systems Technology with a Concentration in Security and Analytics program requires 33 graduate credit hours. As this degree seeks to provide a broad range of skills and experiences that are required for the students to be experts in the increasingly complex domains, information security and data analytics, the curriculum is divided into core coursework, elective coursework and a capstone experience. These core, elective, and capstone courses would ensure that the students apply state of the art concepts, policies, methods tools, and techniques for the problems, projects and case studies that closely resemble the real world and industry issues. Students must maintain a 3.0 GPA and may not have more than two grades of “C” in the program.

Degree Requirements (33 Graduate Credit Hours)

Core Courses (15 Credit Hours)

- IST 650 - Information Systems Technology in Context
- IST 660 - Introduction to Cybersecurity and Information Assurance
- IST 661 - Security Policy and Risk Assessment
- IST 670 - Data Management and Analytics
- IST 671 - Data Mining and Knowledge Discovery

Electives (12 Credit Hours: Aligned with Career Goals)

Choose two from the following:

- IST 665 - Secure Networking
- IST 666 - Secure Software Development
- IST 667 - Intelligence and Security Analysis
- CSCI 534 - Digital Forensics and E-Discovery

Choose two from the following:

- IST 675 - Semantic Web Technologies
- IST 676 - Data Fusion
- IST 677 - Data Visualization
- CSCI 575 - Decision Support Systems

Capstone (6 Credit Hours)

- IST 799 - Thesis Research
- OR

Choose two from the following:
• IST 659 - Special Topics in Information Systems Technology-Security Patterns
• IST 669 - Special Topics in Information Security-Secure Cloud Computing
• IST 679 - Special Topics in Data Analytics-Big Data Analytics

Proposed Catalog Description:
The Master of Science in Information Systems with a concentration in Security and Analytics is a program to prepare future leaders in the areas of information security and data analytics through critical examination of both academic and practical applications of various segments of the information security and analytics industry. The faculty seeks to challenge, engage, and cultivate students in becoming skilled and knowledgeable information security and data analytics professionals.

Student Learning Outcomes
After graduating from the program, the student shall be able to:
1. Engage with the IST (Information Systems Technology) professional or academic communities through superior communication and leadership skills to contribute to the knowledge bases of the fields such as Information Security/Data Analytics.
2. Apply analytical, critical thinking, and technical skills to a domain of work in the IST field such as Information Security and Data Analytics.
3. Explore and extend creative use of emerging Information System Technologies in a secure manner.
4. Analyze, evaluate, design, and implement information services to enhance the value of information in a variety of professional and academic settings.
5. Derive and effectively communicate actionable insights from a vast quantity and a variety of data.
6. Critically evaluate and manage information security policies, principles, processes, services and technologies to manage risks and security threats when applied to different IST settings.
7. Critically evaluate current state IST infrastructure and architect, design, and implement solutions to ensure a secure IST infrastructure.

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2. Submission of an official undergraduate transcript from each post-secondary school or college previously attended, including any graduate study previously undertaken.
3. Evidence of having received a baccalaureate degree from a regionally accredited institution in this country or its equivalent at a foreign institution based on a four-year degree with a cumulative GPA of 3.0.
4. Competitive official GRE scores. GRE requirement may be waived at the discretion of the program director.
5. International students whose native language is not English must provide official results from tests taken within the last three (3) years or one of the following acceptable means of documenting English language proficiency consistent with success in graduate
programs. (Note: higher scores may be required of some graduate programs so applicants are urged to consult their desired program to identify whether a higher score is required):
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i. Bachelor’s degree earned from a regionally accredited U.S. institution of higher education within the last three (3) years.
6. Submission of at least two letters of recommendation from individuals familiar with the academic ability, level of responsibility, and work ethic of the applicant.
7. Submission of a resume.
8. Submission of a written statement of educational and career goals, how this degree will fulfill those goals and the subject area of research or career interest while completing this degree.
9. Prerequisites required for admission are undergraduate credits in:
a. Computer Networks or Information Security (3 credit hours)
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c. Database Design or SQL Development (3 credit hours)
d. Statistics (3 credit hours)
Undergraduate course credit requirements may be waived depending on the relevant industry experience or completion of the professional certification by the applicant. Admission decisions are made when all evidence of the applicant’s ability to succeed in graduate studies has been submitted.
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Applicants may receive provisional admission to the MISTSA program if they do not meet the stated admission requirements and are entering the University for the first time or are returning to the University after an extended absence. Students who are admitted provisionally are limited to 12 credit hours of coursework toward the degree program.
Removal of Provisional Status
To remove provisional status, within the first two academic semesters (either Fall, Spring or Spring, Fall), the student must:
1. Earn a “B” or better in two core courses;
2. Maintain a 3.0 GPA in all graduate courses taken;
3. Earn a “B” or better in all undergraduate prerequisites required as specified in the provisional acceptance letter.
Degree Requirements
The Master of Science in Information Systems Technology with a Concentration in
Security and Analytics requires:
1. Successful completion of an approved program of study with a minimum of 33 graduate credit hours.
2. A minimum grade point average of 3.0 (B) on all coursework.
3. A maximum of two (2) classes may be completed below the grade of “B” before dismissal from the program.
4. If a student has chosen the thesis option, completion of successful thesis defense through an oral presentation and written thesis report.
5. All work applied toward the degree must be earned in the six (6) years immediately preceding the completion of the graduate program.

Curriculum
The Master of Science in Information Systems Technology with a Concentration in Security and Analytics program requires 33 graduate credit hours. As this degree seeks to provide a broad range of skills and experiences that are required for the students to be experts in the increasingly complex domains, information security and data analytics, the curriculum is divided into core coursework, elective coursework and a capstone experience. These core, elective, and capstone courses would ensure that the students apply state of the art concepts, policies, methods tools, and techniques for the problems, projects and case studies that closely resemble the real world and industry issues. Students must maintain a 3.0 GPA and may not have more than two grades of “C” in the program.

Degree Requirements (33 Graduate Credit Hours)

Core Courses (15 Credit Hours)

• IST 650 - Information Systems Technology in Context
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• IST 670 - Data Management and Analytics
• IST 671 - Data Mining and Knowledge Discovery

Electives (12 Credit Hours: Aligned with Career Goals)

Choose two from the following:

• IST 665 - Secure Networking
• IST 666 - Secure Software Development
• IST 667 - Intelligence and Security Analysis
• CSCI 534 - Digital Forensics and E-Discovery

Choose two from the following:

• IST 675 - Semantic Web Technologies
• IST 676 - Data Fusion
• IST 677 - Data Visualization
• IST 678 - Business Intelligence and Analytics
• CSCI 575 - Decision Support Systems
  Capstone (6 Credit Hours)

• IST 799 - Thesis Research
• OR
  Choose two from the following:

• IST 659 - Special Topics in Information Systems Technology
• IST 669 - Special Topics in Information Security
• IST 679 - Special Topics in Data Analytics

4. Proposal for new graduate courses:
      The course introduces the concept of renewable energy systems. The course will cover
      fundamental aspects of thermodynamics and physics. Topics will include hydro-kinetic,
      aero- and hydro-propulsion and solar with emphasis on the principles of operation,
      efficiency, environmental impact and performance. Sp Justification: Renewable energy
      systems are one of the growing technologies as resources are limited. The course will
      introduce basic principles in energy systems and enhance the CMSS curriculum by
      providing a course that covers all topics of science from a system approach.
      The course has been taught during Spring 2016. A total of 18 students participated.
   b. BIOL 601 – Gene Expression: Proposed catalog description: (3):
      Advanced coursework examining the intricacies of gene expression from chromatin remodeling
      through protein production in both prokaryotes and eukaryotes. S Justification: This
      course is required for the new M.Sc. in Integrative Biology program. As such, program
      assessment has not been done for this course as yet. This course will provide much
      needed foundation for students wishing to pursue advanced studies and work in the
      molecular sciences including biotechnology-related fields.
   c. BIOL 602 – Symbiosis: Proposed catalog description: (3): The course will identify
      and examine the evolutionary aspects and mechanisms involved in the establishment and
      maintenance of symbiotic associations between organisms. A broad range of symbiotic
      relationships will be addressed from mutualistic to parasitic and will include examples of
      both facultative to obligate associations. F Justification: This is a new course offered for
      the M.Sc. in Integrative Biology program. This course will offer a bridge between the
      molecular and physiological worlds for graduate students and should be of great interest
      to students wishing to pursue any field of study as symbiosis impact all organisms at
      some level. There is no prior program assessment for this course.
   d. BIOL 680 – Professional Development in the Biological Sciences: (3):
      Instruction for graduate-level writing expectations in the biological sciences including grants, thesis
      proposals, and manuscripts. Additional topics will focus on development of a C.V.,
      professional presentations and posters, as well as pedagogical instruction for Biology
      courses at the college-level. F Justification: As this is a new course for a new program,
      no current program assessment exists. This course will offer curriculum necessary to
      prepare GAs for teaching at the college level, as well as prepare graduate students to be
successful grant and thesis writers. Outcomes of this course include an increased level of teaching excellence by GAs and grant revenue at CCU.

e. **BIOL 603 – Special Topics in Biotechnology: (3):** Variable content investigating current innovations in biotechnology. Multiple instructors will teach this course with each instructor given a period of time (2-3 weeks) to address a “hot” topic of biotechnology or research in their field of interest. **F, S Justification:** This course will function to enhance the integrative nature of the MS in Integrative Biology program. Further, this course will provide introduction to a variety of cell/ molecular fields and techniques for graduate students to help refine their thesis studies.

f. **BIOL 610 – Environmental Microbiology: (3):** An introduction to the critical importance of microorganisms in various environments and in sustaining life. Metabolic diversity, roles in biogeochemical cycles, community structure, activity, importance in aquatic and terrestrial environments, and applied aspects such as bioremediation will be discussed. **F Justification:** Course for new Integrative Biology MS program that supports one focal area of study.

g. **BIOL 614 – Population Biology: (3):** Principles of population ecology and population genetics will be examined. Topics include growth, decline and regulation of populations, demography, life history strategies, metapopulations, basic population genetics and molecular evolution, and applications in conservation and resource management. **S Justification:** Course for new Integrative Biology MS program that supports one focal area of study.

h. **BIOL 612 – Environmental Animal Physiology: (3):** An examination of physiological responses and adaptations of animals to their environment. Topics covered will include the molecular basis of adaptation, gas exchange, metabolism, energetics, thermal relations, and water and solute metabolism. **F Justification:** Course for new Integrative Biology MSc program that supports one focal area of study.

i. **BIOL 611 – Fish Conservation: (3):** A focus on the science addressing issues related to the decline, restoration, and conservation of marine and freshwater fishes globally and locally. **F Justification:** Course for new Integrative Biology MS program that supports one focal area of study.

j. **BIOL 613 – Ecological Indicators: (3):** A comprehensive examination of the scientific use and development of multiple types of data to communicate condition of communities and ecosystems, especially with respect to the impacts of humans. **S Justification:** Course for new Integrative Biology MS program that supports one focal area of study.

k. **BIOL 687 – Selected Topics for Integrative Biology: (1-4 credits):** Topics designed in specialty areas of Integrative Biology will be examined. **F, S, SU Justification:** New courses for the Integrative Biology Master’s program can be taught once using the Selected Topics (BIOL 687) designation. Provides a simple path to pilot new courses or take advantage of new, topical opportunities for instruction.

l. **BIOL 697 – Graduate Seminar I: (1 credit):** Approaches to research and literature review of possible thesis research are examined. **F, S Justification:** Required course for new Integrative Biology MS program.
m. **BIOL 698 – Graduate Seminar II: (1 credit):** (Prereq: BIOL 697) Plans for thesis research and expected outcomes based on a review of literature are presented and evaluated. F, S **Justification:** Required course for new Integrative Biology MS program.

n. **BIOL 699 – Graduate Seminar III: (1 credit):** (Prereq: BIOL 698) Techniques for communicating results in research are evaluated. F, S **Justification:** Required course for new Integrative Biology MS program.

o. **BIOL 700 – Thesis Research: (1-6 credits):** Research conducted leading toward the preparation, acceptance, and defense of a thesis. May be repeated up to 6 credits. F, S, SU **Justification:** Required course for new Integrative Biology MS program.

p. **BIOL 702 – Project Completion: (1 credit):** (Prereq: completion of six credit hours of BIOL 700) Research activity towards completion of a thesis. May be repeated. Pass/Fail credit. F, S, SU **Justification:** Course for new Integrative Biology MS program.

5. **Proposal for a new graduate program:**

a. **Master of Science – Integrative Biology: Spring 2020 – Catalog description:**

**MISSION STATEMENT**

The purpose of the Master of Science degree program in Integrative Biology is to train students to help resolve major challenges in biology wherein the organism is the focal target of study. To be successful in this undertaking, students must evaluate organisms at multiple levels of organization, from genes to ecosystems, and incorporate multiple sub-disciplines, including molecular biology, physiology, ecology, and evolution. The Integrative Biology M.Sc. will give a sense of the breadth of the life sciences as well as enable students to delve into a focal area via targeted coursework and original research culminating in a thesis. The two focal areas are 1) Cellular and Molecular Biology; and 2) Ecology, Evolution, and Conservation; while each student will primarily study in one area, all students must take one course in each area to allow greater exposure to the diversity within biological sciences. The goals of the program are satisfied through 24 credit hours of coursework and 6 credit hours of thesis research leading to the completion of a thesis.

**Student Learning Outcomes**

1. Synthesize content from the two focal areas to create a multi-faceted approach to the problem addressed in the student’s thesis research.
2. Demonstrate mastery of essential, discipline-specific skills, in the course of completing advanced coursework.
3. Conduct original research and communicate the results effectively in oral and written formats.

**Graduate Applications**

Applications for graduate study should be directed to the Office of Graduate Studies at Coastal Carolina University.
Admission Requirements
Regular admission to the Master of Science in Integrative Biology is met by satisfactorily meeting the criteria below. Note that some admission requirements may be waived at the discretion of the Integrative Biology program coordinator.

1. Completion of an application form.
2. Submission of an official transcript from each post-secondary school or college previously attended (all prior undergraduate academic study must be represented as well as other graduate study). Transcripts should show a minimum overall graduating GPA of 3.0 and a minimum GPA of 3.0 in any graduate work already completed.
3. Evidence of having received a baccalaureate degree from a regionally accredited institution in this country or its equivalent at a foreign institution based on a four-year degree program, with a preference for a degree in a biology-related discipline.
4. Submissions of official Graduate Record Examination (GRE) scores.
5. Submission of two letters of recommendation from those who can comment on your academic readiness.
6. Submission of a written statement of educational and career goals, how this degree will fulfill those goals and the subject area of research interest while completing this degree.
7. Submission of a resume/curriculum vitae.
8. If a non-native speaker of English, provide official results from tests taken within the last three years or one of the following acceptable means of documenting English language proficiency consistent with success in graduate programs. Note that higher scores may be required of some graduate programs so applicants are urged to consult their desired program to identify whether a higher score is required:
   a. A minimum score of 550 on the paper-based (PBT) or 79 on the internet (iBT) Test of English as a Foreign Language (TOEFL);
   b. A minimum score of 6.5 on the International English Language Testing System (IELTS) exam;
   c. Certificate of Completion of level 112 of English for Academic Purposes (EAP) from an ELS Language Center;
   d. Pearson Test of English (PTE) Academic with a score of 59;
   e. Cambridge CAE (Certificate of Advanced English ) with a minimum level of C1;
   f. Cambridge CPE (Certificate of Proficiency in English) with a minimum level of C1;
   g. MELAB (Michigan English Language Assessment Battery) with a score of 77;
   h. TOEIC (Test of English for International Communication) with a score of 745;
   i. Bachelor’s degree earned from a regionally accredited U.S. institution of higher education within the last three years.

Provisional Admission
Applicants may receive provisional admission in the Master of Science in Integrative Biology degree program if they do not meet the stated admission requirements and are entering the University for the first time or are returning to the University after an extended absence. Students on provisional admission are limited to 12 hours of course work.
**Removal of Provisional Status**
To remove provisional status the student must, within the first two academic semesters (either Fall, Spring, or Spring, Fall):
1. Earn a B or better in a focal area course;
2. Maintain a 3.0 GPA in all graduate courses taken; and
3. Earn a B or better in all undergraduate prerequisites required as specified in the provisional acceptance letter.

**Admission to Candidacy**
Admission to the graduate program in Integrative Biology does not signify Admission to Candidacy. To be eligible for Admission to Candidacy for the Master of Science in Integrative Biology, a student must:
1. Achieve regular admission status;
2. Have a degree plan and thesis proposal approved by the major professor, thesis committee, and Program Coordinator;
3. Complete a minimum of 12 semester hours of graduate work at Coastal Carolina University; and
4. Have earned a B or better average on all graduate work pursued.

All students, including transfer students, must clear the English Proficiency Requirement, if applicable, before being admitted to Candidacy.

**Degree Requirements**
The Master of Science in Integrative Biology requires:
1. Successful completion of an approved program of study with a minimum of 30 graduate hours;
2. Admission to Candidacy;
3. A minimum grade point average of 3.0 (B) on all course work;
4. Completion, presentation, and successful defense of a thesis; and
5. All work applied toward the degree must be earned in the six years immediately preceding the completion of the graduate program.

Note: Transfer credit(s) cannot be used to raise the GPA at CCU.

**Thesis**
Students must assemble a thesis committee of at least three (3) members by the second semester of enrollment or risk losing eligibility for an assistantship. The committee will consist of at least three (3) full-time CCU faculty members including the major professor who will chair the committee. A committee member from an outside institution may be included, but requires approval by the program coordinator. The entire thesis committee will meet with the student semi-annually to assess progress and to give advice. Before graduation, students will submit the completed thesis to the program coordinator who will schedule the public defense.
Enrollment Requirement
Students in the Integrative Biology program must be continuously enrolled during all phases of graduate work. This includes Fall, Spring, and Summer terms (the Summer term here is inclusive of Maymester, Summer I, and Summer 2). This requirement is typically satisfied by registering for a minimum of one graduate credit in each term. However, the situation may arise where students have completed all course requirements except for the thesis. In this case, students must enroll in BIOL 702 Project Completion in order to satisfy the continuous enrollment requirement. Registering in BIOL 702 maintains email and library privileges and also allows access to University facilities and faculty advisers. BIOL 702 does not count toward degree requirements and does not substitute for the 6 credit hour requirement in BIOL 700 Thesis Research.

Required Graduate Degree Credit Hours (30 Graduate Credit Hours)
The Master of Science in Integrative Biology requires the successful completion of an approved program of study with a minimum of 30 graduate credit hours. The M.S. in Integrative Biology has two focal areas: 1) Cellular and Molecular Biology; and 2) Ecology, Evolution, and Conservation. All students must take one course in each focal area to allow greater exposure to the diversity within biological sciences. Within the approved program are focal area electives, electives, seminars, a professional development course, and thesis research credits.

REQUIRED COURSES (12 Credit Hours)
BIOL 680: Professional Development for the Biological Sciences.......................... 3
BIOL 697: Graduate Seminar I................................................................................. 1
BIOL 698: Graduate Seminar II................................................................................ 1
BIOL 699: Graduate Seminar III............................................................................... 1
BIOL 700: Thesis Research....................................................................................... 6

FOCAL AREA ELECTIVE COURSES (6 Credit Hours)
Cellular and Molecular Biology (3 Credit Hours)
BIOL 601: Gene Expression...................................................................................... 3
BIOL 602: Symbiosis.................................................................................................. 3
BIOL 603: Special Topics in Biotechnology............................................................. 3

Ecology, Evolution, and Conservation (3 Credit Hours)
BIOL 610: Environmental Microbiology................................................................. 3
BIOL 611: Fish Conservation Biology........................................................................ 3
BIOL 612: Environmental Animal Physiology......................................................... 3
BIOL 613: Ecological Indicators............................................................................... 3
BIOL 614: Population Biology.................................................................................. 3

ELECTIVES (12 Credit Hours)
(Choose up to 12 credit hours) ................................................................................ 12
Electives must be approved 500-level or above courses from BIOL, CHEM, CMSS, CMWS, CSCI, IST, MATH, MSCI, PHYS, or STAT. A maximum of 6 credit hours at the 500 level may be used towards completing degree requirements.

**Use of Technology**
(Describe the mode of course delivery, opportunities for student-faculty interactions, and faculty development activities related to the use of technology, if any.)

Courses will be delivered as lectures taught by graduate faculty. Master's thesis research will be conducted under the guidance of faculty using a variety of technologies (lab and field equipment, computers, analytical software).