Florida Gulf Coast University Board of Trustees
June 21, 2005

SUBJECT: Faculty Promotions

PROPOSED BOARD ACTION

Approval of promotions to faculty as presented

BACKGROUND INFORMATION

The Florida Gulf Coast University Board of Trustees has the authority for approving faculty promotions. The university employs an evaluation process to screen candidates for faculty promotion and this process is similar to those of other accredited universities across the United States. Faculty from each of the five colleges and the library approve criteria for evaluating promotion candidates, and these evaluation plans incorporate the faculty assignment areas of instruction, scholarship and service. Promotion candidates prepare portfolios detailing both qualitatively and quantitatively their accomplishments in the areas of instruction, scholarship and service. The academic unit faculty peer review committee and academic administration review their own candidate’s documentation. The provost reviews all candidates’ materials and promotion recommendations from the deans, immediate supervisors and peer review committees. The provost and president confer and final recommendations are made to the FGCU Board of Trustees for action. Promotions are conducted under the ratified collective bargaining agreement where promotion to Associate is a salary increase of 9% and a 12% salary increase for full professors.

Supporting Documentation Included: See attached

Legal Review by: N/A

Prepared by: Bonnie Yegidis, Provost and Vice President for Academic Affairs

Submitted by: President William Merwin and Dr. Bonnie Yegidis, Provost and Vice President for Academic Affairs
The President and Provost of Florida Gulf Coast University recommend to the FGCU Board of Trustees the following faculty for promotion:

To Associate Professor:  

**Dr. Thomas Beatty**  
College: Arts and Sciences  
Program: Math and Science  
Education: Ph.D., Mathematics, Florida Atlantic University  
Appointment to FGCU: 08/07/99  
Speciality: Analysis

**Dr. David W. Brown**  
College: Arts and Sciences  
Program: Biotechnology  
Education: Ph.D.: Biochemistry and Biophysics, Oregon State University  
Appointment to FGCU: 08/24/98  
Speciality: Chemistry

**Dr. Michael Fauerbach**  
College: Arts and Sciences  
Program: Math and Science  
Education: Ph. D., Physics, Michigan State University  
Appointment to FGCU: 08/07/02  
Specialty: Nuclear physics

**Dr. Lakshmi Naryanan**  
College: Arts and Sciences  
Program: Math and Science  
Education: Ph. D., Psychology, University of South Florida  
Appointment to FGCU: 08/07/97  
Specialty: Psychology

**Dr. Patrick Davis**  
College: Education  
Program: Graduate  
Education: Ph. D., Counseling, Texas A&M University-Commerce  
Appointment to FGCU: 08/07/03  
Specialty: Counselor Education

**Dr. Deborah Giambo**  
College: Education  
Program: Undergraduate  
Education: Ph. D., Reading, Special Education, University of Miami  
Appointment to FGCU: 08/08/00  
Specialty: Curriculum & Instruction
To Full Professor:

Dr. Linda Buettner
College: Health Professions
Program: Health Science
Education: PhD, Leisure Studies, Gerontology, Pennsylvania State University
Appointment to FGCU: 08/07/00
Specialty: Geriatric Recreation Therapy

Dr. Halcyon St. Hill
College: Health Professions
Program: Interdisciplinary Core
Education: Ed. D., Vocational Technical Education, Allied Health, Rutgers University, MS, Microbiology
Appointment to FGCU: 06/24/96
Specialty: Clinical Laboratory Science: Health Science

Dr. Janusz Zalewski
College: Business
Program: Computer Science
Education: Ph. D., Computer Science and Engineering, Warsaw University of Technology
Appointment to FGCU: 08/07/02
Specialty: CS- Software Engineering

Dr. Russell Sabella
College: Education
Program: Graduate
Education: Ph. D., School Counseling & Guidance, University of Florida
Appointment to FGCU: 08/07/99
Specialty: Counselor Education

Dr. Patricia Wachholz
College: Education
Program: Graduate
Education: Ed. D., Curriculum and Instruction, University of Memphis
Appointment to FGCU: 06/23/99
Specialty: Secondary Ed/Language Arts
**Dr. Charlene Olliff**

**College:** Education  
**Program:** Undergraduate  
**Education:** Ph.D., Curriculum & Instruction, Reading Education, University of South Florida  
**Appointment to FGCU:** 08/07/97  
**Specialty:** Reading

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**Dr. Linda Ray**

**College:** Education  
**Program:** Undergraduate  
**Education:** Ph. D., Curriculum & Instruction, Special Education, University of South Florida  
**Appointment to FGCU:** 08/07/97  
**Specialty:** Reading
Florida Gulf Coast University Board of Trustees
June 21, 2005

SUBJECT: New Degree Proposal: Bachelor of Arts (B.A.) in Liberal Studies - Anthropology

PROPOSED BOARD ACTION

Approve new B.A. in Liberal Studies – Anthropology.

BACKGROUND INFORMATION

FGCU is requesting permission to offer a B.A. in Liberal Studies – Anthropology as described in the Executive Summary.

Supporting Documentation Included: (1) Memo from Provost, and (2) Executive Summary of Degree Program

Legal Review by: N/A

Prepared by: Cathy Duff, Director of Program Development, Curriculum, and Accreditation

Submitted by: Provost Bonnie Yegidis
May 20, 2005

MEMORANDUM

TO: Trustee Larry Hart, Chair
    Academic/Student/Faculty Affairs Committee
    FGCU Board of Trustees

FROM: Bonnie L. Vegidis
      Provost and Vice President for Academic Affairs

SUBJECT: Bachelor of Arts (B.A.) in Liberal Studies - Anthropology

The College of Arts and Sciences is proposing the addition of a B.A. in Liberal Studies – Anthropology. A primary goal of the program is to provide students with opportunities to develop complex thinking skills and abilities including analysis and synthesis, communication, understanding of cultural and ecological complexity, self-awareness, sensitivity, and problem-solving skills. These skills and abilities are necessary for life in an increasingly global and dynamic world.

The program will be 120 semester credit hours in length and has been approved by the university-wide Undergraduate Curriculum Team. The program is also consistent with the criteria for new degree authorization adopted by the Board of Governors on April 30, 2003.

Existing faculty and recent hires within the Division of Ecological and Social Sciences will support launch and growth of the proposed program. Implementation of the B.A. in Liberal Studies – Anthropology will provide Southwest Florida with a high quality program that will promote an appreciation of diversity and a collegial culture among faculty, students, staff, and the broader community. I recommend approval of this program.
FLORIDA GULF COAST UNIVERSITY

Executive Summary
New Program Proposal

Degree: Bachelor of Arts (B.A.)

Major: Liberal Studies - Anthropology

College: Arts and Sciences

Division: Ecological and Social Sciences

Anticipated Implementation Date: Fall 2005

Suggested CIP: 24.0101 (Liberal Arts & Studies)

Program Description

Anthropology involves the study of human beings. That exploration of what it means to be human ranges from the study of culture and social relations, to human biology and evolution, to languages, to music, art and architecture, and to vestiges of human habitation. It considers such fascinating questions as how peoples’ behavior changes over time, how people move about the world, why and how people from distant parts of the world and dissimilar cultures are different and the same, how the human species has evolved over millions of years, and how individuals understand and operate successfully in distinct cultural settings. The primary goal of the proposed B.A. Liberal Studies - Anthropology program is to prepare students with complex thinking skills including analysis and synthesis, communication, understanding of cultural and ecological complexity, self-awareness, sensitivity, and problem solving necessary for life in an increasingly global and dynamic world.

Anthropology is an academic discipline that dates to the turn of the last century in North America and includes four broad sub-fields—cultural anthropology, linguistics, physical anthropology, and archaeology. The proposed program will build on introductory courses in these sub-disciplines wherein students will employ distinctive paradigms, theories, and research methodologies. As an academic discipline with both humanistic and scientific pedigree, anthropology offers students intellectual breadth, depth, and a true liberal arts synthesis that continues over the length of the undergraduate experience. Required courses in theory, research methods, foreign language, and electives within and beyond the discipline provide experience in reasoned and civil inquiry, comprehension of human-environmental interdependence as well as opportunities to examine the historical, philosophical and moral roots of myriad issues highlighted by an enhanced intercultural
understanding. Anthropology will be distinguished among the current College of Arts and Sciences majors by these facets: an overt requirement and use of foreign language in the conduct and completion of the degree, a required cross-cultural immersion, and a pedagogical emphasis on experiential learning.

The proposed program will include a total of 120 credit hours. Beyond the General Education requirements, the program requires 33 hours in the major (ANT prefix), 2 semesters (8 hours) of foreign language, 12 hours in the Collegium of Integrated Learning, and 3 hours in the University Colloquium IDS 3920. The remaining semester hours can be taken outside the Anthropology Program to provide additional flexibility.

Consistency with the FGCU Mission and Strategic Plan

The University and College missions emphasize undergraduate education, esteem innovative pedagogy and assert an embrace of diversity. Anthropology by its very nature is diverse and, consequently, it draws a diverse group of students and faculty. The proposed program will promote an appreciation of diversity and a collegial culture among faculty, students, staff, and community. The Anthropology Program aspires primarily to train undergraduate students with widely applicable intellectual and social-problem solving skill sets. The faculty will provide hands-on activities in anthropological research; teaching will combine lecture, discussion, and laboratory and group activities to maximize learning.

Need and Demand

In the last 20 years, there has been a surge in new career options for anthropologists outside the academy. According to the American Anthropological Association in 2002, nonacademic employment of cultural anthropologists is greatly expanding due to the demand for more research on humans and their behavior. Since 1985, over half of the recipients of graduate degrees in cultural anthropology have taken nonacademic positions in research institutes, nonprofit associations, government agencies, world organizations, and private corporations. As the Southwest Florida regional economy continues to expand, it becomes increasingly international; work forces and markets, increasingly diverse culturally and linguistically; participatory management and decision making, increasingly important; and, communication skills including multi-lingual skills, are increasingly in demand. Anthropological training at FGCU provides individuals particularly well suited to meet the changing local and regional social conditions.

Enrollment Projections

Enrollment projections are based on student enrollment patterns in other programs at FGCU and the general pattern of growth across the university. It is estimated that enrollment in the first year will be 22 (14.96 FTE) increasing to 65 students (44.88 FTE)
in year five. In the first year, the majority of students will come from related programs such as the Interdisciplinary Social Science Program. As the program matures, the majority of anthropology students are expected to matriculate from lower division into the program as majors.

Resources

The Division of Ecological and Social Sciences has grown in both size and strength over the past few years. Recent hires in the division will support the launch and growth of the Anthropology Program and strengthen the ties to allied and complementary programs in the division and the wider College of Arts and Sciences. No additional resources are necessary to launch this program.
Liberal Studies-Anthropology

Degree: Bachelor of Arts
Major: Liberal Studies-Anthropology
Department: Ecological and Social Sciences
Semester Hours Required for Degree: 120

Anthropology is a discipline concerned with how humans and human societies evolve through cultural and biological processes. Anthropology integrates a wide range of perspectives on human behavior, culture, and society. Students of anthropology at Florida Gulf Coast University learn the basic concerns and approaches through four sub-fields of the discipline: archaeology, physical anthropology, cultural anthropology, and anthropological linguistics. Both a major and minor in anthropology are offered in this program. The anthropology major is for anyone interested in working with people in all of their cultural diversity, solving social problems, teaching social sciences, and examining human behavior and biology from an evolutionary point of view.

The Anthropology Program at Florida Gulf Coast University prioritizes learning through experiences within and beyond the classroom. The degree requires a total of 120 credit hours. During the first 60 credit hours, students complete lower division and general education requirements. The balance of the program occurs in the context of core courses in the discipline, theory and research courses, topic and area courses and internship or study abroad experiences. Anthropology students are required to take 8 credit hours of appropriate college-level courses in foreign language and they will experience and reflect on life and language through cross-cultural immersion. Students will provide appropriate accounts of these experience as a part of their course of study.

Common Prerequisites (6 hours)
Two introductory level courses in anthropology (ANT prefix)

Anthropology Coursework in the Major

Anthropology Core Courses (12 hours):
ANT 2511 Physical Anthropology (3)
ANT 3XXX Develop. Of World Civ. (3)
ANT 3640 Language and Culture (3)
ANT 4XXX Senior Seminar in Anthropology (3)

Theory and Methods (9 to 12 hours):
ANT 3495 Methods in Anthro. Research (3)
or ANT 3824 Arch. Field Methods (6)
ANT 4XXX History of Anthro. Thought (3)
ANT 4XXX Internship in Anthropology (3)

Topical and Area Courses (Select 12 hours):
ANT 3143 Archaeology of Europe (3)
ANT 3158 Florida Archaeology (3)

ANT 3231 Introduction to Folklore (3)
ANT 3312 Native American Cultures (3)
ANT 3340 Caribbean Cult. Patterns (3)
ANT 3XXX Anthropology of the Coastal Zone (3)
ANT 3403 Cultural Ecology (3)
ANT 3461 Folk Medicine (3)
ANT 3520 Forensic Anthropology (3)
ANT 3467 Anthropology of Food (3)
ANT 3824L Archaeological Field Lab (3)
ANT 4930 Special Topics (3-6)
ANT 4241 Magic and Religion (3)
ANT 4311 Southeast Native Americans (3)
ANT 4316 Cultures of the Contemp. South (3)
ANT 4462 Medical Anthropology (3)

Foreign Language (8 hours):
Proficiency equivalent to one year of college instruction in a foreign language. Standardized examination may be used to meet the requirement.

Cross-Cultural Immersion (3 hours):
ISS 4955 Study Abroad (3)
ANT 4930 Special Topics in Anthropology (3)
ANT 4940 Internship in Anthropology (3)

Collegium of Integrated Learning (12 hours)
The Collegium of Integrated Learning consists of a core of courses designed to create a community of inquiry. Students must complete 12 credits with a grade of C or better in each course and must meet the following distribution requirements:

IDS 3300 Foundations of Civic Engagement (3)
IDS 3301 Issues in Culture and Society (3)
IDS 3304 Issues in Science and Technology (3)
IDS 4910 Integrated Core Sr. Seminar (3)

Additional Requirements
IDS 3920 University Colloquium (3)

Free Electives (variable)
The remaining credit hours of upper division work needed to complete the minimum of 120 hours for the baccalaureate degree are defined as free electives. Students are advised to select courses relevant to their interests but to bear in mind that 48 of the 120 hours must be at the upper division (courses numbered 3000 and above). Please see the Requirements for the Bachelor of Arts Degree earlier in this section.
Florida Gulf Coast University Board of Trustees  
June 21, 2005

SUBJECT: New Degree Proposal: Bachelor of Arts (B.A.) in Liberal Studies - Chemistry

PROPOSED BOARD ACTION

Approve new B.A. in Liberal Studies – Chemistry.

BACKGROUND INFORMATION

FGCU is requesting permission to offer a B.A. in Liberal Studies – Chemistry as described in the Executive Summary.

Supporting Documentation Included: (1) Memo from Provost, and (2) Executive Summary of Degree Program

Legal Review by: N/A

Prepared by: Cathy Duff, Director of Program Development, Curriculum, and Accreditation

Submitted by: Provost Bonnie Yegidis
May 20, 2005

MEMORANDUM

TO: Trustee Larry Hart, Chair
    Academic/Student/Faculty Affairs Committee
    FGCU Board of Trustees

FROM: Bonnie Vegidis
    Provost and Vice President for Academic Affairs

SUBJECT: Bachelor of Arts (B.A.) in Liberal Studies - Chemistry

The College of Arts and Sciences is proposing the addition of a B.A. in Liberal Studies – Chemistry. A primary goal of the program is to prepare students for (a) professional study in medical, dental, veterinary, or pharmacy schools; (b) employment in Florida K-12 educational system as science teachers; or (c) employment as laboratory technicians in fields such as agriculture and water treatment. The proposed Chemistry Program will enable graduates to begin teaching chemistry in the Florida K-12 school system upon graduation; however, prospective teachers will need to complete some additional requirements within three years of employment to achieve certification.

The program will be 120 semester credit hours in length and has been approved by the university-wide Undergraduate Curriculum Team. The program is also consistent with the criteria for new degree authorization adopted by the Board of Governors on April 30, 2003.

Current faculty in the College of Arts and Sciences will support the proposed program, and no additional faculty or facilities will be needed for implementation. Approximately $17,000 will be needed annually to support library resource requirements and equipment for chemistry laboratories. Implementation of the B.A. in Liberal Studies – Chemistry will provide Southwest Florida with a high quality program that will complement the FGCU mission of environmental awareness and its current biology, biotechnology, and environmental studies programs. I recommend approval of this program.
FLORIDA GULF COAST UNIVERSITY

Executive Summary
New Program Proposal

Degree: Bachelor of Arts (B.A.)

Major: Liberal Studies - Chemistry

College: Arts and Sciences

Division: Science and Mathematics

Anticipated Implementation Date: Fall 2005

Suggested CIP: 24.0101 (Liberal Arts & Studies)

Program Description

Chemistry is the study of matter, the physical material of the universe. By understanding the nature of the universe, applications of chemistry have been developed which enhance the quality of life including production of pharmaceuticals and antibiotics, fertilizers, construction materials, and plastics. This broad definition and its relevance to applications served as the basis for the development of the proposed baccalaureate program in chemistry.

The proposed B.A Liberal Studies - Chemistry program will prepare students for (a) professional study in medical, dental, veterinary, or pharmacy schools; (b) employment in Florida K-12 educational system as science teachers; or (c) employment as laboratory technicians in fields such as agriculture and water treatment. The proposed Chemistry Program will enable graduates to begin teaching chemistry in the Florida K-12 school system upon graduation; however, prospective teachers will need to complete some additional requirements within three years of employment to achieve certification. Mr. Edward Beckett, advisor to the FGCU College of Education has reviewed the program curriculum and deemed it more than sufficient to meet Florida state subject requirements for teaching high school chemistry. The extra requirements for certification include five education courses for professional preparation, and several examinations, the CLAST, chemistry subject and professional (education) exams.

The proposed curriculum consists of 120 credit hours. During the first 60 hours, students complete general education and common prerequisite requirements in accordance with state and university guidelines. The program also includes 32
hours of core coursework in the major including 4 credits in a research component and 9 credits in upper-level electives. Also, 12 hours in the Collegium of Integrated Learning, and the 3-hour University Colloquium are required.

The curriculum emphasizes hands-on learning and provides undergraduate research experience. The core coursework in the program emphasizes chemistry as related to biological applications and the analytical principles used to detect and quantify chemicals. The course design was selected to complement the FGCU mission of environmental awareness and its current biology, biotechnology and environmental studies programs. Students will also learn how to apply chemical knowledge to solve current problems in fields such as agriculture, medicine, and environmental and marine sciences.

Consistency with the FGCU Mission and Strategic Plan

The university’s mission emphasizes undergraduate education utilizing cutting-edge technological tools and innovations in pedagogy in an active, learning-centered environment. The strategic plan calls for active collaboration with community partners to benefit the Southwest Florida region and citizenry.

The proposed program is consistent with both the mission and strategic plan. The program will provide hands-on activities in scientific processes and methodologies. Courses will use a combination of lecture, group problem-solving activities, and laboratory experiments to maximize learning. In addition, the program will include undergraduate research and connect research efforts directly to the curriculum. Faculty members participate within the Whitaker Center, directed by Dr. Donna Henry and Dr. Diane Schmidt. The Center encourages collaboration between scientists in various fields, exchange of educational ideas and tools, and partnerships with teachers and students in the Florida K-12 school system. The Whitaker Science building houses classroom and research facilities, which are designed to facilitate dissemination of scientific information and encourage interdisciplinary collaboration between different areas of science.

Students will participate within the community by tutoring younger students in science, acting as mentors for science fair projects or participating in environmental projects as related to chemistry for their service learning work. They will cooperate with community industry partners, such as Herbal Science, NeoGenomics and U.S. Sugar, by working on undergraduate research projects with these companies. Graduates will support community needs with employment in science teaching positions in the K-12 school system and as community science educators, for museums, science centers and similar organizations.
Need and Demand

A baccalaureate degree program with a chemistry major is not presently available at any public or private institution of higher education within the five county area serviced by FGCU.

There is a national shortage of physical scientists such as chemists, physicists, and engineers, according to a presentation from the U.S. Secretary of Education at the March 2004 Secretary’s Science Summit in Washington D.C. There is a need to increase science education and interests, both early in the educational system and later at the university level, to help develop students into physicists, chemists and engineers.

The proposed B.A Liberal Studies – Chemistry program will help fill a shortage of science teachers needed in the Florida K-12 educational system. Science education programs are on the Florida Board of Governors List of Target Programs. Additionally, it will prepare pre-professional students interested in pursuing careers in the fields of medicine, pharmacy, veterinary and dentistry.

Program graduates will be able to start teaching chemistry in the state of Florida at the high school level immediately upon graduation, although additional certification standards must be passed within one to three years after employment. These additional requirements include several examinations and some education courses, all of which can be completed while working full-time. The state of Florida is encouraging the hiring of non-traditional teachers from science fields due to their increased content knowledge of the field.

Enrollment Projections

Enrollment projections are based on student enrollment numbers in other programs at FGCU and on the growth rate of the university. It is estimated that enrollment in the first year will be 8 students (6 FTE), increasing to 60 students in the program (45 FTE, both continuing and new students) in five years. In the first year, the majority of students in the program will be students currently enrolled in related programs at FGCU, such as the BA Liberal Studies - Biology program. Although the number of students enrolled as freshman is expected to increase in subsequent years, the rigorous nature of the program may limit large enrollments. It is anticipated that the majority of students in the program will enroll on a full-time basis. Enrollment may increase as the demand for scientists increase with the inception of the Scripps research center on the east coast of Florida and the biotechnology park to be developed near FGCU.
Resources:

The FGCU programs in the sciences and mathematics are rapidly growing both in size and strength. Whitaker Hall, completed in December 2000, provided additional on-campus classroom, office, meeting, and research space. Current faculty in the College of Arts and Sciences will support the proposed program. The chemistry faculty participating in the B.A. Liberal Studies – Chemistry program will provide expertise, diversity and interdisciplinary connections to the curriculum. No additional faculty or facilities will be required to implement the program. Approximately $17,000 – $18,000 will be needed annually to support library resources and equipment for the chemistry laboratories.
Liberal Studies-Chemistry

Degree: Bachelor of Arts
Major: Liberal Studies-Chemistry
Department: Science and Mathematics
Semester Hours Required for Degree: 120

Chemistry is the study of the properties of matter, the physical material of the universe. Students will gain an understanding of nature and the world we live in through core courses in the major. Applications of chemistry to issues that affect daily life such as production and detection of pollutants, vitamins, and agricultural products, will also be studied and related to basic chemical concepts. Pedagogically, lectures are combined with group problem-solving activities with an emphasis on lab-centered, hands-on learning rather than the traditional lecture format.

Laboratories are designed to include the latest technology and to allow collaborative experimental experiences. Instructors use active learning techniques to allow students to experience and understand chemical principles. The chemistry major includes an emphasis on undergraduate research. Students will learn the process of science, and in doing so will learn how to solve problems.

The program includes 32 hours of core courses in chemistry and sciences. The chemistry major provides a foundation for acceptance into professional programs and serves as a pre-professional track for medicine, pharmacy, dentistry and veterinary programs. It is also suited for students who wish to teach chemistry at the high school level after graduation but who prefer to study chemistry and biology more in-depth than a traditional education major. They would be qualified to teach chemistry upon graduation although additional certification requirements, including five education courses and three exams, will be required within one to three years after employment. The five education courses are not part of the B.A. in Liberal Studies-Chemistry program.

The degree requires a total of 120 credit hours. During the first 60 credit hours of study, students complete lower division courses, including general education requirements and common pre-requisites. At the upper division, students complete 32 hours of coursework from a common core and 9 hours of electives. The required coursework includes a minimum of 2 credit hours of chemistry research and 2 credit hours in a senior project presentation.

Common Prerequisites
CHM 1045C General Chemistry I with lab (4)
Acceptable substitutes: CHM X040 and CHM X041 or CHM X045/X045L or CHM X045E
CHM 1046C General Chemistry II with lab (4)

Acceptable substitutes:
MAC X311 Calculus I (4) Acceptable substitute: MAC X281
MAC X312 Calculus II Acceptable substitute: MAC X282
CHM 2210C Organic Chemistry I (4) and
CHM 2211C Organic Chemistry II (4)

Acceptable substitutes for 2210C and 2211C:
CHM X210/X210L and CHM X211/X211L or
PHY X048/PHY X048L and PHY X049/X049L or
PHY X048C and PHY X053C or
PHY X053C or
PHY X053/ X053L and PHY X054C or
PHY X054/X054L

Coursework in the Major
PHY 2048C General Physics I (4) (or CHM 2210C, whichever course which was not taken as a common pre-requisite. Both are required for the program).
PHY 2049C General Physics II (4) (or CHM 2211C, whichever course which was not taken as a common pre-requisite. Both are required for the program).

CHM 3120C Analytical Chemistry (4)
CHM 3xxxC Physical Chemistry for the Life Sciences (4)
BCH 3023C Biochemistry (3)
BCH 3025C Analytical Biochemistry (3)
CHM 4xxxC Instrumental Analysis (3)
ISC 3120C Scientific Process (3)
CHM 4xxx Senior Project Research in Chemistry (2)
CHM 4xxx Senior Project Presentation in Chemistry (2)

Plus 9 hours of electives from any 3000 level or higher course selected in consultation with an advisor.

Collegium of Integrated Learning
The Collegium of Integrated Learning consists of a core of courses designed to create a community of inquiry. Students must complete 12 credits with a grade of C or better in each course and must meet the following distribution requirements:

Complete each of the following:
IDS 3300 Foundation of Civic Engagement (3)
IDS 3301 Issues in Culture and Society (3)
IDS 3303 Issues in Science and Technology (3)
IDS 4910 Integrated Core Senior Seminar (3)
**Additional Requirements**

IDS 3920     University Colloquium (3)

Additional electives may be required to reach a minimum of 120 credit hours for the baccalaureate degree. At least 48 of the 120 hours must be at the upper division (courses numbered 3000 and above). Please also see the Requirements for the Bachelor of Arts Degree earlier in this section.