College of Science And Mathematics

Perry A. Tompkins, Dean Office: Wheeler 100-B (417) 328-1659 http://www.sbuniv.edu/academics/colleges/cosm.php

Departments Within The College

Athletic Training Biology Chemistry and Physics Mathematics Physical Therapy Darrell R. Strait Center for the Integration of Science and Christian Faith

Mission Statement

The SBU College of Science and Mathematics pursues excellence and offers quality instruction from a Christian perspective to broaden non-majors scientific awareness and to prepare majors for career success or further study in their chosen field.

Vision Statement

The SBU College of Science and Mathematics pursues excellence by:

- serving our diverse population of undergraduate majors and non-majors as well as graduate majors in broadening their scientific knowledge and integrating Christian faith with scientific disciplines;
- preparing students for continued scholarship and positions of leadership from a Christian perspective in occupations that are impacted directly by our college;
- providing leadership in the uses of *technology* to enhance teaching and research and in communicating technology's role to our students, the university community, and society; and
- promoting scholarship of the faculty by encouraging pursuit of advanced degrees, continuing professional development, research, grantsmanship, and professional presentations and publications.

The College of Science and Mathematics provides courses and programs designed to prepare students for careers and/or graduate study in Athletic Training, Biology, Chemistry, Mathematics, Physical Therapy, and the health professions. Course work for Pre-Medicine, Pre-Dentistry, Pre-Optometry, Pre-Veterinary, Pre-Pharmacy, Pre-Physician Assistant, Pre-Engineering and Medical Technology is offered.

DEPARTMENT OF ATHLETIC TRAINING

Department Chair, Program Director, CIE: TJ John Office: Meyer Sports Center Athletic Training Laboratory - (417) 328-1792 Faculty: Jason Halverson, Clinical Coordinator Clinical Instructors: Kristen Davern, Morgan Simpson, Mike Wolhoy

Mission Statement

The Athletic Training Education Program at Southwest Baptist University is a Christ-centered academic unit providing quality didactic and relevant clinical experiences preparing entry level athletic training students to be skilled, dedicated, caring, and ethical allied health professionals.

SBU-ATEP Goals (est. 10.18.00)

Upon successful completion of the Southwest Baptist University Athletic Training Education Program (SBU-ATEP), graduates will be able to:

- Sit for and pass the any of the National Academy of Sports Medicine credentials; Corrective Exercise Specialist (CES), Performance Enhancement Specialist (PES) and Fitness Nutrition Specialist (FNS).
- Sit for and pass the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist credential.
- Successfully matriculate to post-graduate allied health professional programs in athletic training, physical therapy, occupational therapy, physician assistant, chiropractic and medical school.
- Serve the community and the profession in an ethical and responsible manner, and
- Pursue lifelong learning through appropriate continuing and post professional education.

Program History and Accreditation Status

The athletic training program at Southwest Baptist University prepares students for careers in the medical and rehabilitative sciences through the development of knowledge and skills needed for post-graduate programs. Students from the program have successfully obtained post-graduate credentials in athletic training, strength and conditioning, physical therapy, occupational therapy, physician assistant, chiropractic and medical schools. The athletic training program is CAATE (Commission on Accreditation of Athletic Training Education) accredited. Questions or concerns regarding accreditation of Athletic Training Education programs should be directed to Commission on Accreditation of Athletic Training Education, 2201 Double Creek Drive, Suite 5006, Round Rock, Texas 78664, phone 512-733-9700/ Fax 513-733-9701/ Email: caate@scglobal.net / Website: http://caate.net.

Description of Program

The baccalaureate degree in Athletic Training or Sports Medicine requires a minimum of 126 semester hours of credit earned by completion of the University general education and graduation requirements, the Athletic Training major requirements and required support courses.

The athletic training program at Southwest Baptist University is a professional allied health program in which students submit an application the spring of their freshman year for entry into the professional phase of the program beginning in the fall of their sophomore year. Admission will follow the procedure outlined in this section of the course catalog. Once admitted to the professional phase, it is expected that students will achieve and adhere to appropriate standards for successful matriculation, policies and procedures and maintain requirements for the clinical education of the student. To be a safe, competent, and properly credentialed athletic trainer, the student must demonstrate expertise in the following content areas of the *5th Edition of the NATA Athletic Training Educational Competencies*: (1) Evidence-Based Practice; (2) Prevention and Health Promotion; (3) Clinical Examination and Diagnosis; (4) Acute Care of Injury and Illness; (5) Therapeutic Interventions: (6) Psychosocial Strategies and Referral; (7) Healthcare Administration; and (8) Professional Development and Responsibilities.

Clinical Practicum Courses: As part of the baccalaureate degree in Athletic Training, students are required to actively participate and successfully complete a minimum of four different clinical practicum courses in a sports medicine or Athletic Training setting. These practicum courses are completed during the normal academic semesters. These courses are part of the professional phase and require the student to commit a minimum of 180 hours per semester of clinical education experience. **Clinical education hours are a program requirement. Students are to successfully complete 6 of the non-credit hour clinical requirement courses.** The student will be given an individual education plan based on post-professional interest.

Assessment

Periodic measurements of the student's perceptions, intellectual growth, clinical performance, and professional behaviors are obtained as one means for the University to assess and improve its academic programs and student learning. The

information obtained is used to measure the competencies and proficiencies and to determine and improve the quality of the educational experience for students. Students must obtain a minimum grade of "B" in all major and support requirement courses to earn a Bachelor of Science in Athletic Training. Students not earning a "B" or better in all major and support course requirements will earn a Bachelor of Science in Sports Medicine. Students who either choose this degree or fail to earn the requirements of the Bachelor of Science in Athletic Training will not be eligible to sit for the Board of Certification examination. An overall grade point average of 2.5 is required in all Athletic Training and support course work towards the Bachelor of Science in Sports Medicine.

Admission

Application Time Lines

All application materials must be received by March 1 in order to be considered for fall entry of the next academic year. Candidates will be notified of their admission status to the professional phase of the program on or before April 1. If you have not heard from the Department of Athletic Training the first week in March, please contact our office immediately.

Appointments

The number of appointments to the program at SBU will vary from year to year depending on space availability and appropriate supervisory capacity according to accreditation standards.

Disclaimers and Waivers

Selection into the ATEP is competitive and successful completion of identified criteria is not a guarantee of acceptance into the professional phase of the program. Students not meeting the established minimum criteria may write an appeal letter directly to the Athletic Training Department establishing grounds for consideration. Submission of an appeal letter should not be constructed as a guarantee that the minimum criteria will be waived or modified. All appeal letters are considered solely on a case-by-case basis.

Admission Criteria

To be considered as a candidate for admission into the program, a student must have completed and submitted the following:

- 1. Declared major in Bachelor of Science in Athletic Training at SBU
- 2. Minimum of 2 semesters completed.
- 3. Minimum cumulative GPA of 2.50.
- 4. Enrolled in or successful completion of the following courses (course listings are specific to SBU):
 - ATH 2013Introduction to Athletic Training (Grade of B or better)BIO 1004Principles of Biology
- 5. Completion of a directed observer program. Transfer students admission will be based upon experience.
- 6. Evaluation of the student within the directed observer program by the athletic trainer that supervised the most hours. Transfer students will have to obtain an evaluation form (via website or mailed from the Athletic Training Department). The institution's Head Athletic Trainer must fill out this form.
- 7. Proof of eligibility of ADA Technical Standards for Admission to the ATEP
- 8. Program's Physical Exam Form, with physician verification of immunization records.
- 9. Immunization records of:

Hepatitis B (initiation of the series is also acceptable with the documentation of completion appropriately and timely submitted)

- Measles
- Mumps
- Rubella
- Tetanus
- Diphtheria
- 10. Copy of current First Aid/CPR Certification.
- 11. Transcripts meeting minimum criteria. Current students at Southwest Baptist University must submit transcripts independent from their prospective advisor. Note: Students not currently enrolled at SBU will need to complete and submit formal application to the University including official transcripts and paying appropriate fees.
- 12. Transfer students must be accepted to Southwest Baptist University to be considered for entry into the program.

After meeting these requirements, acceptance into the program is based upon 6 weighted criteria. Students with the top scores will be considered for admission into the program. (Number based on amount of eligible seats). The weighted criteria are:

1.	Overall Grade Point Average (1 pt/.1pt GPA)	25 (2.50)	to 40 (4.00) pts
2.	Completion of the Application Packet (2 pts/item)		
3.	Directed Observer Evaluation Form (5 pts/category)		
4.	Transfer students are evaluated by the ATC that observed most of their h	ours	
5.	Interview with Admissions Committee (120 pts)		
6.	Essay - "What do I want to be?" - evaluated by the Program Director		
7.	Overall Potential - evaluated by the Program Director		20 pts
	Total possible points		235- 250 pts

Application Procedures

Applicants are to submit the following information:

- 1. Application Form
- 2. Directed Observer Hours of Documentation Form
- 3. Athletic Training Student Evaluation Form
- 4. Immunization records
- 5. CPR/First Aid Certification
- 6. Transcripts meeting the minimum criteria. Current students at Southwest Baptist University must submit transcripts independent from their perspective advisor.

It is strongly encouraged that all materials be submitted at the same time. Applications can be hand delivered directly to the Athletic Training Department or can be mailed to:

Athletic Training Education Department Attn: TJ John MA ATC/L Southwest Baptist University 1600 University Avenue Bolivar, MO 65613

Once the application is received, the Athletic Training Department will review for completeness and mail an acknowledgment of the received application. If items are missing from the application, the Department will then direct the applicant to provide further information as needed to complete the application. It is recommended that applicants not hearing from the Department within 1 week of submission contact the office to ensure that the application has been processed.

ATEP Academic Plan

The ATEP at SBU is a four-year undergraduate program in the 1+3 model leading to conferring of a B.S. in Athletic Training or B.S. in Sports Medicine. The components of the degrees include General Education (42 hours), Graduation Requirements (10 hours), Major Requirements (63 hours), Support Courses (11 hours), for a comprehensive credit hour total of 126 hours.

Major Requirements (48 hours in Sequence)

The Major Requirements serve as the primary integration of learned concepts for the student athletic trainers, cognitive and psychomotor, pertaining to the competencies of becoming a professional athletic trainer. All 63 hours (21 courses) are led by faculty within the Department of Athletic Training and are based upon the integration of Christian and professional values as well as the structure of NATA Role Delineation Study (4th ed.), which includes the following domains of learning: a) prevention, b) recognition, evaluation and assessment, c) immediate care, d) treatment, rehabilitation, and reconditioning, e) organization and administration, and f) professional development and responsibility. This six-pillar domain serves as the building block for the delivery of the Major Requirements found within the ATEP course offerings. The following is the Major Requirements; course descriptions that must be completed in order (lock-step sequence). To declare a major the student must obtain their own athletic training student liability insurance. Forms can be obtained from the department chair.

Athletic Training Major - B.S. Degree

ATH 2013	Introduction to Athletic Training	
ATH 3013	Athletic Training Techniques I	
ATH 3033	Functional Anatomy	
ATH 3022	Athletic Training Practicum I	2 hours
ATH 3093	Emergency Medicine	
ATH 3114	Athletic Training Evaluation: Above Diaphragm	4 hours
ATH 3103	Sports Performance	
ATH 3122	Athletic Training Practicum II	2 hours
ATH 3124	Athletic Training Evaluation: Below Diaphragm	
ATH 3143	General Medical Conditions and Pathologies	
ATH 3133	Pharmacology	
ATH 4014	Therapeutic and Sports Performance Modalities	
ATH 4022	Athletic Training Practicum III	
ATH 4034	Sports Rehabilitation	
ATH 4113	Athletic Training Administration	
ATH 4122	Athletic Training Practicum IV	2 hours
ATH 4133	Psychosocial Strategies	
ATH 4223	Functional Movement	
ATH 4833	Evidenced Based Practice	3 hours
ATH 4963	Athletic Training Field Experience I	3 hours
ATH 4973	Athletic Training Field Experience II	

Clinical Education

Clinical Courses: As part of the baccalaureate degree in Athletic Training, students are required to actively participate and successfully complete a minimum of four different clinical practicum courses and two different field experience courses in a sports medicine or Athletic Training setting. These courses are completed during the normal academic semesters. The courses are part of the professional phase and require the student to commit a minimum of 180 hours per semester of clinical education experience. **Clinical education hours are a program requirement. Students are to successfully complete 6 of the non-credit hour clinical requirement courses**. The student will be given an individual education plan based on post-professional interest.

Support Courses (11 hours)

The Support Courses for the ATEP provide depth and breadth to the learning for the Major Requirements. Current course offerings at SBU were identified that provide content which meets or exceeds the mandates established in the eleven content areas, which include: (1)Prevention and Health Promotion; (2) Clinical Examination and Diagnosis; (3) Acute Care of Injury and Illness; (4) Therapeutic Interventions; (5) Psychosocial Strategies; (6) Health Care Administration; (7) Exercise Sciences; (8) Sports Nutrition; (9) Testing and Evaluation; (10) Exercise Techniques and Program Development; (11) Professional Development and Responsibilities. Some of the eleven content areas are well developed and delineated within this block of courses, while others are introduced to the student in order to provide a foundation to didactic information provided in the Major Requirement courses. Course descriptions are provided in this catalog. The Support Courses include the following:

PSY 3243	Elementary Statistics	3 hours
BIO 2204	Human Anatomy and Physiology I	4 hours
BIO 3304	Human Anatomy and Physiology II	4 hours

Bachelor of Science in Sports Medicine – B.S. Degree

This is a backup degree for those who, because of not earning a "B" or better in all major and support courses, are not eligible for the Bachelor of Science in Athletic Training degree. Because the Bachelor of Science in Athletic Training is

preferred, this major can only be utilized with Department Chair approval. It is identical to the Bachelor of Science in Athletic Training except for the previous mentioned academic requirements.

DEPARTMENT OF BIOLOGY

Department Chair: Craig Endres Office: Wheeler 136C - (417) 328-1743 Faculty: Hillary Glauser-Patton, Dennis Siegfried, Tao Wei, Cindy Wolfe

Mission Statement

The Southwest Baptist University Department of Biology functions within the traditional liberal arts setting to educate majors and non-majors how to make informed decisions about life science issues. Biology majors are provided with a basic foundation in biology which will allow them to think critically about biological problems, be able to interpret and communicate within the discipline of biology and possess the technical skills that will prepare them to be leaders within their area of specialty.

Vision Statement

The SBU Department of Biology aspires to be a community of Christian scholars who:

- Implement and maintain a strong, broad-based curriculum for biology majors to prepare them for a career in the life sciences
- Offer quality instruction by incorporating pedagogy that blends traditional methods and discovery-based learning with modern instructional technology
- Provide quality academic advising and career counseling
- Provide to non-science majors a strong foundation in the life sciences that will meet the needs of their respective disciplines

The Department of Biology presents a fundamental and practical knowledge of living organisms, their relationships to each other and their places in the scientific world. The Department of Biology also administers the programs and advises the majors in medical technology.

The baccalaureate degree in biology requires a minimum of 128 semester hours of credit to be earned by completion of the University general education requirements, the biology core curriculum, additional selected biology courses and required support courses. **Note:** Students majoring or minoring in biology will not be permitted to select the pass/fail option for any required course in the major or minor. Biology majors must take the Major Field Assessment Test (MFT) for graduation. An overall grade point average of 2.25 is required in all biology courses.

Core Biology Curriculum

The following courses are required of all graduating biology majors. These courses (24 hours) provide an essential foundation for more specialized study.

BIO 2134General Zoology4 hourBIO 2234General Botany4 hour	41
BIO 2234 General Botany	S
	S
BIO/CHE 3012 Methods in Scientific Research	S
BIO 3324 Genetics	S
BIO 3334 Ecology	S
BIO 4224 Cell and Molecular Biology	S
BIO 4471 Seminar in Biology1 hou	r

Biology Concentrations

In addition to the Biology department core curriculum, biology majors must complete a 16-hour concentration from one of the areas listed below.

Biomedical Science (Pre-health Professional, Graduate Studies)

Biomedical Science	ce (Pre-nealth Professional, Graduate Studies)
BIO 2204	Human Anatomy and Physiology I4 hours
BIO 3304	Human Anatomy and Physiology II
Electives chosen from	the following:
BIO 3314	Microbiology
BIO 3322	Immunology
BIO 3344	Vertebrate Physiology
BIO/CHE 3364	Biochemistry
BIO 3384	Histology
BIO 3394	Pathogenic Microbiology
BIO 4404	Pathophysiology
BIO 4444	Vertebrate Embryology
BIO 448(1-3)	Biological Investigations
BIO 498(1-3)	Biological Internship

Environmental Biology/Field Biology

BIO 2214	Environmental Biology	
BIO 3544	Wildlife Biology	
Electives chosen from	the following:	8 hours
BIO 3314	Microbiology	
BIO 3354	Plant Taxonomy	
BIO 4414	Freshwater Biology	
BIO 448(1-4)	Biological Investigations	
BIO 498(1-3)	Biological Internship	
CHE 3002	Environmental Chemistry	

General Biology

Biology Major - B.A. Degree

Students seeking the B.A. degree in biology must complete 40 or more semester hours in biology course work. In addition to the biology core curriculum, B.A. biology majors are required to complete the listed support courses. Prerequisites are needed for some courses.

General Education Requirements	42 hours
Graduation Requirements	16-18 hours
Biology Core Curriculum	
Biology Concentration	16 hours
Required Support Courses (12 hours)	
CHE 1115 and CHE 1125 General Chemistry I and General Chemistry II	10 hours
SCF 3402 Biology Through the Eyes of Faith	2 hours

Biology Major - B.S. Degree

Students seeking the B.S. degree in biology must complete 40 or more semester hours in biology course work. In addition to the biology core curriculum and area of concentration, B.S. biology majors are required to complete the listed support courses. Prerequisites are needed for some courses.

General Education Requirements	
Graduation Requirements	
Biology Core Curriculum	

Biology Conce	Biology Concentration		
Required Support Courses (20-22 hours)			
CHE 1115	General Chemistry I and CHE 1125 General Chemistry II	10 hours	
SCF 3402	Biology Through the Eyes of Faith		
CHE 3304	Organic Chemistry I and CHE 3314 Organic Chemistry II or		
PHY 1115	General Physics I and PHY 1125 General Physics II or	10 hours	
MAT 1195	Calculus I and MAT 2255 Calculus II or	10 hours	
CIS 1144	Computer Science I and CIS 1154 Computer Science II		

Biology Major - B. S. (Education) Degree

This B.S. degree will allow students to pursue a career in teaching biology at the high school level in a timely fashion. Designated coursework in biology combined with specified courses in the physical science area and the professional education sequence will enable the biology education major to be certified in biology. This program requires a minimum of 137 semester hours of coursework. A biology education major is required to take the Major Field Test (MFT) in biology. Enrollment in upper level education courses by all students seeking State Teacher Certification is limited to those students who have a cumulative GPA of 2.75, a GPA of 3.0 in Biology coursework, a GPA of 3.0 in professional education coursework, passed all state required assessments, completed their file in the Office of Teacher Education, and been approved by faculty in the Department of Biology and the Department of Education. A person fulfilling degree requirements may be eligible to graduate with or without teacher certification. (Please see Department of Education - Bachelor of Science Degree Certification in Content Areas, Grades 9-12, K-12.)

Biology Education Courses (34 hours)

BIO 1111	Biology Colloquium	1 hour
BIO 2214	Environmental Biology	4 hours
BIO 2134	General Zoology	4 hours
BIO 2234	General Botany	
BIO 3324	Genetics	
BIO 3334	Ecology	
BIO 4471	Biology Seminar	1 hour
Additional hou	rrs of Biology electives	
Required Support C	ourses (14 hours)	
CHE 1115	General Chemistry I	5 hours
CHE 1125	General Chemistry II	5 hours
*PHS 1004	Introduction to Physical Science	
Additional Required	Courses (7 hours)	
PHS 1114	Introduction to Earth Science	
PHS 3303	History & Philosophy of Science and Technology	
Professional Educati	on Coursework (43 hours)	
See Education Cer	tification Worksheet for Biology Grades 9-12 for specific EDU red	mirements.

* PHY 1115/1125 may be substituted for PHS 1004

Biology Minor (22 hours)

BIO 1111	Biology Colloquium	1 hour
BIO 2134	General Zoology	
BIO 2234	General Botany	
BIO 4471	Seminar in Biology	1 hour
Biology electiv	es	
0,		

DEPARTMENT OF CHEMISTRY AND PHYSICS

Department Chairman: John D. Patton Office: Wheeler 114B - (417) 328-1662 Faculty: Craig Masters, Perry A. Tompkins, Jena Whetstine

Mission Statement

The Southwest Baptist University Department of Chemistry and Physics provides, from a Christian perspective, quality instruction and research experiences in chemistry, physics, and the other physical sciences.

Vision Statement

The SBU Department of Chemistry and Physics strives to be a Christ-centered community of scholars that:

- gives quality instruction in the principles and applications of chemistry, physics, and the other physical sciences.
- furnishes intellectually stimulating laboratory and research experiences that foster analytical thinking and discovery-based learning.
- provides quality academic advising.
- offers career counseling in the physical and health sciences.
- prepares its students for careers in science-related professions.

The Department of Chemistry and Physics seeks to present the basic principles of both chemistry and physics, each as its own intellectual discipline; to enhance facility in analytical, critical thinking -- especially thinking which involves logical and quantitative relationship; to provide exciting and stimulating laboratory experiences as an aid to the learning process; and to develop scientifically literate citizens through an understanding of the methods of science and the roles of the physical sciences, including chemistry and physics, in society. The Department of Chemistry and Physics also administers the program in Pre-Engineering and is responsible for the curriculum in Physical Science.

Chemistry

The baccalaureate degree in chemistry requires a minimum of 128 semester hours of credit to be earned by completion of the University general education and graduation requirements, the required core chemistry curriculum, additional selected upper division chemistry courses, required support courses, plus general and/or technical electives. An overall grade point average of 2.0 is required in all chemistry course work.

To receive a degree in chemistry and be certified to teach chemistry and other sciences in Missouri, the student must also satisfy the Department of Education's other requirements for certification. Science education students are encouraged to obtain a B.S. Chemistry degree.

Core Chemistry Curriculum

The following courses are required of all graduating chemistry majors. These courses (29 semester hours) provide an essential foundation for more specialized study. A minimum grade of C is required in all core courses.

Chemistry Required Core Courses (25 hours)

CHE 1115	General Chemistry I	5 hours
CHE 1125	General Chemistry II	5 hours
CHE 3304	Organic Chemistry I	4 hours
CHE 3314	Organic Chemistry II	4 hours
CHE 3345	Analytical Chemistry	5 hours
CHE 3371	Seminar in Chemistry I	1 hour
CHE 4471	Seminar in Chemistry II	1 hour

Required Support	Courses (17 hours)
MAT 1195	Calculus I5 hours
PHY 1115	General Physics I and PHY 1125 General Physics II10 hours
or	
PHY 2215	University Physics I and PHY 2225 University Physics II10 hours
SCF 3412	Chemistry Through the Eyes of Faith

Chemistry Major - B.A. Degree

This chemistry major program is for students who desire the chemistry major with a liberal arts emphasis. The B.A. chemistry major graduate is required to complete 35 or more semester hours of chemistry coursework, including the required core curriculum, the required support courses, and a minimum of ten more semester hours from the electives. The students obtaining the B.A. chemistry degree must also complete the University's language requirements for the degree. As additional graduation requirements, B. A. degree chemistry majors must take the Major Field Assessment Test (MFT) in chemistry and the departmental Chemistry Core Curriculum Assessment Test (ChemCAT) for graduation.

Chemistry Major - B.S. Degree

This chemistry major program prepares students for employment as chemists, for professional schools in the health sciences, for Unified Science Certification with endorsement in chemistry, or for other technical areas needing a strong chemistry/science background. Students interested in pursuing graduate work in chemistry will be encouraged to take additional math courses, a special topics lab course, and undergraduate chemistry research. Students seeking the B.S. major in chemistry must complete 35 or more semester hours in chemistry coursework and a minimum of six semester hours of upper division technical electives. Upper division technical electives are considered to be courses taken from biology (BIO), computer science (CIS), mathematics (MAT), physical science (PHS), physics (PHY), and science and Christian faith (SCF). As additional graduation requirements, B.S. degree chemistry majors must take the Major Field Assessment Test (MFT) and the departmental Chemistry Core Curriculum Assessment Test (ChemCAT) for graduation.

Upper Division Chemistry Electives (10 or more hours)

Your electives, at minimum, must include two of these first three options

CHE 3323	Physical Chemistry I	
CHE 3364	Biochemistry	
CHE 4413	Advanced Inorganic Chemistry	
CHE 3002	Environmental Chemistry	
CHE 4002	Interpretive Spectroscopy	
PHS 3303	History and Philosophy of Science and Technology	
PHY 3363	Modern Physics	
CHE 448(1-3)	Chemistry Research	1-3 hours
CHE 495(1-5)	Special Topics in Chemistry	1-5 hours
CHE 499(1-3)	Independent Study	1-3 hours

Minor in Chemistry

To obtain a chemistry minor, the student must complete all the chemistry core curriculum except CHE 4471.

Chemistry Major - B. S. (Education) Degree

This unique B.S. degree in Chemistry Education has been approved by the Missouri State Department of Elementary and Secondary Education. Designated coursework in chemistry combined with specified courses in the physical science area and the professional education sequence will enable the chemistry education major to be certified in chemistry. This program requires a minimum of 133 semester hours of coursework. As additional graduation requirements, B.S. chemistry education majors must take the Major Field Test (MFT) in chemistry and the departmental Chemistry Core Curriculum Assessment Test (ChemCAT) for graduation. Enrollment in upper level education courses by all students seeking State Teacher Certification is limited to those students who have a cumulative GPA of 2.75, a GPA of 3.0 in Chemistry coursework, passed all state required assessments,

completed their file in the Office of Teacher Education, and been approved by faculty in the Department of Chemistry and Physics and the Department of Education. A person fulfilling degree requirements may be eligible to graduate with or without teacher certification. (Please see Department of Education - Bachelor of Science Degree Certification in Content Areas, Grades 9-12, K-12.)

Chemistry Education Courses (30 hours)

CHE 1115	General Chemistry I	5 hours
CHE 1125	General Chemistry II	5 hours
CHE 3002	Environmental Chemistry	2 hours
CHE 3304	Organic Chemistry I	4 hours
CHE 3314	Organic Chemistry II	4 hours
CHE 3345	Analytical Chemistry	5 hours
CHE 3364	Biochemistry	4 hours
CHE 3371	Seminar in Chemistry I	1 hour

Required Support Courses (17 hours)

MAT 1195	Calculus I	5 hours
PHY 1115	General Physics I and PHY 1125 General Physics II	10 hours
or		
PHY 2215	University Physics I and PHY 2225 University Physics II	10 hours
SCF 3412	Chemistry Through the Eyes of Faith	2 hours
Additional Physical	Science Courses (7 hours)	
PHS 1114	Introduction to Earth Science	4 hours
PHS 3303	History and Philosophy of Science and Technology	3 hours

Physics

The baccalaureate degree in physics requires a minimum of 128 semester hours of credit to be earned by completion of the University general education and graduation requirements, the required physics and physical sciences courses, required support courses, plus general and/or technical electives. An overall grade point average of 2.0 is required in all physics course work. The physics major is required to be a secondary major and cannot be taken alone except in the case of the pre-medical option. Three options exist: the B.S. in Physics, the B.S in Physics with a Pre-Engineering concentration and the B.S in Physics with the Pre-Medical concentration.

Physics Major - B.S. Degree

Physics Curriculum

The following courses are required for physics majors. These courses (58 semester hours) provide an essential foundation for more specialized study. A minimum grade of C is required in all courses. This is a secondary major only.

Physics Required Courses (26 hours)

University Physics I	5 hours
University Physics II	5 hours
Astronomy	4 hours
Mechanics	
Modern Physics	
Electricity and Magnetism Theory	
Physical Chemistry	3 hours
	University Physics I University Physics II Astronomy Mechanics Modern Physics Electricity and Magnetism Theory Physical Chemistry

Required Support Courses (32 hours)

CHE 1115	General Chemistry	[,] I	.5 hours
----------	-------------------	----------------	----------

CHE 1125	General Chemistry II	5 hours
CIS 1144	Computer Science I	
MAT 1195	Calculus I	5 hours
MAT 2255	Calculus II	5 hours
MAT 2263	Calculus III	
MAT 3363	Differential Equations	
SCF 3432	Physics Through the Eyes of Faith	2 hours

Physics Major - B.S. Degree - Pre-Medical Concentration

Physics Curriculum

The following courses are required for physics majors in the Pre-Medical Concentration. These courses (77 semester hours) provide an essential foundation for more specialized study. A minimum grade of C is required in all courses. The B.S. in Physics with the Pre-Medical Option is for those students who wish to go to Medical School and includes the courses required for entrance by most medical schools. This course of study does not require a second major.

Physics Required Courses (26 hours)

PHY 2215	University Physics I	
PHY 2225	University Physics II	
PHS 2314	Astronomy	
PHY 3233	Mechanics	
PHY 3363	Modern Physics	
PHY 4413	Electricity and Magnetism Theory	
CHE 3323	Physical Chemistry	

Required Support Courses (32 hours)

CHE 1115	General Chemistry I	5 hours
CHE 1125	General Chemistry II	5 hours
CIS 1144	Computer Science I	
MAT 1195	Calculus I	5 hours
MAT 2255	Calculus II	5 hours
MAT 2263	Calculus III	
MAT 3363	Differential Equations	
SCF 3432	Physics Through the Eyes of Faith	2 hours

Required Pre-Medical Courses (19 hours)

ENG 2213	English Composition II	
BIO 2204	Human Anatomy and Physiology I	
BIO 3304	Human Anatomy and Physiology II	
CHE 3304	Organic Chemistry I	
CHE 3314	Organic Chemistry II	
	· ·	

Physics Major - B.S. Degree - 3-2 Pre-Engineering Concentration

Southwest Baptist University, in cooperation with the Missouri University of Science and Technology, has a program in which students attend SBU for the first three years before transferring to Missouri S&T to complete a B.S. degree in one of the following engineering programs: aerospace, ceramic, chemical, civil, electrical, geological, metallurgical, mining, nuclear or petroleum engineering or engineering management. This is considered a 3-2 Pre-Engineering program. Upon completion of the Engineering requirements, SBU graduation requirements (must be taken at SBU), the following SBU course requirements, and the SBU general education requirements, students will be eligible to also receive a B.S. in Physics from SBU. While the current agreement with Missouri University of Science and Technology is the preferred method to obtain a degree with the 3-2 Pre-Engineering program, other engineering schools will be considered.

Physics Curriculum

The following courses are required for physics majors in the 3-2 Pre-Engineering Concentration. These courses (54 semester hours) provide an essential foundation for more specialized study. A minimum grade of C is required in all courses. This course of study does not require a second major, as this requirement will be covered by the second degree at the engineering school.

Physics Required Courses (22 hours)

PHY 2215	University Physics I	5 hours
PHY 2225	University Physics II	5 hours
PHY 3233	Mechanics	3 hours
PHY 3363	Modern Physics	3 hours
PHY 4413	Electricity and Magnetism Theory	3 hours
CHE 3323	Physical Chemistry	3 hours

Required Support Courses (32 hours)

CHE 1115	General Chemistry I	5 hours
CHE 1125	General Chemistry II	5 hours
CIS 1144	Computer Science I	4 hours
*MAT 1195	Calculus I	5 hours
MAT 2255	Calculus II	5 hours
MAT 2263	Calculus III	3 hours
MAT 3363	Differential Equations	3 hours
SCF 3432	Physics Through the Eyes of Faith	2 hours

* Students without a satisfactory background in mathematics should take MAT 1163 Pre-Calculus before taking MAT 1195.

Electives in the humanities and social science differ depending on the particular field of engineering; however, they are usually taken from Bible, Communications, Economics, Fine Arts, History, Philosophy, Psychology/Sociology or Literature. Six semester hours must be in upper division courses to give depth to one or two areas.

NOTE: 3-2 pre-engineering students should work closely with the pre-engineering advisor (Dr. Craig Masters – Associate Professor of Physics) to facilitate any course modification among specific engineering programs.

Minor in Physics

An overall 2.00 grade point average is required for all physics/physical science coursework. Meteorology (PHS 2214) or Astronomy (PHS 2314) may be substituted for the physics elective course.

Physics/Physical Science Courses (19-20 hours)

PHY 2215	University Physics I	
PHY 2225	University Physics II	
PHY 3363	Modern Physics	
PHY	Physics elective	
CHE 3323	Physical Chemistry	

Required support courses (22 hours)

General Chemistry I	5 hours
General Chemistry II	5 hours
Calculus I	5 hours
Calculus II	5 hours
Physics Through the Eyes of Faith	2 hours
	General Chemistry I General Chemistry II Calculus I Calculus II Physics Through the Eyes of Faith

Unified Science Teaching Certification Grades 9 - 12

This certificate will allow an individual to teach any of the beginning sciences; e.g., General Science, Biology I, Chemistry I, or Physics I. An endorsement is required for each area in which an advanced science course is taught; i.e., Biology II or Chemistry II.

The SBU requirements listed below are <u>in addition</u> to the SBU Department of Education's other curriculum requirements for certification.

Minimum Standard Requirements.....

An endo	rsement in Bio	ology or Ch	emistry	
*]	PHS 3303	History	and Philosophy of Science and Technology	
*]	BIO 2134	General	Zoology and BIO 2234 General Botany	
С	THE 1115 and	CHE 1125	General Chemistry I and General Chemistry II	
P	HY 1115 and	PHY 1125	General Physics I and General Physics II	
P	HS 1114	Introdu	ction to Earth Science and PHS 2214 Meteorology	
В	IO 2214	Enviror	imental Biology or *BIO 3334 Ecology	
	*Require	ed prerequi	site courses.	

A. Biology Endorsement -- a B.S. or B.A. degree in Biology to include coursework in

BIO 1111	Biology Colloquium	1 hour
BIO 2134	General Zoology	4 hours
BIO 2204 and BI	O 3304 Human Anatomy & Physiology I and II	8 hours
BIO 2234	General Botany	4 hours
BIO 3314	Microbiology	4 hours
BIO 3324	Genetics	4 hours
BIO 3334	Ecology	4 hours
BIO 4224	Cell and Molecular Biology	4 hours
BIO 4471	Seminar in Biology	1 hour
Biology Electives	S	4 hours
SCF 3402	Biology Through the Eyes of Faith	2 hours

B. Chemistry Endorsement -- a B.S. or B.A. degree in Chemistry to include coursework in

CHE 1115	General Chemistry I and CHE 1125 General Chemistry II	10 hours
CHE 3002	Environmental Chemistry	2 hours
CHE 3304	Organic Chemistry I and CHE 3314 Organic Chemistry II	8 hours
CHE 3345	Analytical Chemistry	5 hours
CHE 3371	Seminar in Chemistry I and CHE 4471 Seminar in Chemistry II	2 hours
CHE 3364	Biochemistry	4 hours
CHE 3323	Physical Chemistry or CHE 4413 Advanced Inorganic Chemistry	3 hours
BIO 1004	Principles of Biology	4 hours
MAT 1195	Calculus I	5 hours
*EDU 4522	Methods of Teaching Science in Middle and Secondary Schools	2 hours
SCF 3402	Chemistry Through the Eyes of Faith	2 hours

- C. Physics and Earth Science Endorsements are not available at SBU.

*Techniques/Methods of Teaching Science (EDU 4522) will include: Safety, Lab Techniques, and Research Process Skills.

Enrollment in upper level education courses by all students seeking State Teacher Certification is limited to those students who have a cumulative GPA of 2.75, a GPA of 3.0 in Unified Science coursework, a GPA of 3.0 in professional education coursework, passed all state required assessments, completed their file in the Office of Teacher Education, and been approved by faculty in the Department of Chemistry and Physics and the Department of Education.

A person fulfilling degree requirements may be eligible to graduate with or without teacher certification. (Please see Department of Education - Bachelor of Science Degree Certification in Content Areas, Grades 9-12, K-12.)

DEPARTMENT OF MATHEMATICS

Department Chair: Kevin Hopkins Office: Wheeler 127D - (417) 328-1675 Faculty: Stephen Bowling, Robert Glasgow

Mission Statement

The Department of Mathematics pursues excellence and offers quality instruction from a Christian perspective to nonmajors to broaden their mathematical skills and awareness and to majors to prepare them for career success or further study in mathematics.

Vision Statement

The SBU Department of Mathematics pursues excellence by:

- helping students familiarize themselves with mathematical skills and basic mathematical structures necessary for applications and interpretation of life experiences from a Christian perspective;
- seeking to enable students to appreciate graphical presentation of information, logical reasoning, and precision of statement and thought;
- preparing students for continued scholarship and positions of leadership from a Christian perspective in secondary mathematics teaching, graduate study in mathematically related fields, and employment in a global society with many problems that need solutions;
- promoting scholarship of the faculty by encouraging pursuit of advanced degrees, continuing professional development, research, grantsmanship, and professional presentations and publications.

Service Courses

Service courses are offered by the department which do not count toward a mathematics major or minor. These either meet the mathematics general education requirement (see the general education section of the catalog for specific requirements) or help students develop the prerequisite skills for later courses in mathematics or other fields. Placement in a particular mathematics course is determined primarily by college entrance examination scores. These scores may necessitate placement in MAT 0103 PreAlgebra or MAT 0123 Intermediate Algebra (which do not count toward the 128 hour graduation requirement) to enable the student to receive the necessary skills for success in later mathematics courses. Other factors that determine a starting mathematics course are high school background, vocational objectives, previous performance and student interest.

MAT 0103	PreAlgebra	
MAT 0123	Intermediate Algebra	
MAT 1143	College Algebra	
MAT 1163	PreCalculus	
MAT 1173	Discrete Mathematics	
MAT/BUS 1	193 Business Calculus	
MAT 2393	Geometry, Data, and Probability for Elementary/Middle School	ol Teachers3 hours

Mathematics Major - B.A. Degree

All students graduating from Southwest Baptist University are required to complete at least 128 hours of credit to be earned by completion of the University general education requirements, University graduation requirements, courses within their major and other elective courses.

Jore courses (27 no	ours)	
MAT 1195	Calculus I	5 hours
MAT 2255	Calculus II	5 hours
MAT 2263	Calculus III	
MAT 3313	Abstract Algebra	
MAT 3323	Linear Algebra	
MAT 4663	Advanced Calculus	
MAT 3332	Symbolic Logic and Set Theory	
MAT 3343	Mathematical Statistics	
Elective courses (10	-12 hours), select 4 of the following courses:	10-12 hours
Elective courses (10 MAT 3353	-12 hours), select 4 of the following courses: Integrated Mathematics	10-12 hours
Elective courses (10 MAT 3353 MAT 3363	-12 hours), select 4 of the following courses: Integrated Mathematics Differential Equations	10-12 hours
Elective courses (10 MAT 3353 MAT 3363 MAT 3372	-12 hours), select 4 of the following courses: Integrated Mathematics Differential Equations Math Technologies	10-12 hours
Elective courses (10 MAT 3353 MAT 3363 MAT 3372 MAT 3382	-12 hours), select 4 of the following courses: Integrated Mathematics Differential Equations Math Technologies History of Mathematics	10-12 hours
Elective courses (10 MAT 3353 MAT 3363 MAT 3372 MAT 3382 MAT 4343	-12 hours), select 4 of the following courses: Integrated Mathematics Differential Equations Math Technologies History of Mathematics Mathematical Statistics II	10-12 hours
Elective courses (10 MAT 3353 MAT 3363 MAT 3372 MAT 3382 MAT 4343 MAT/CIS 443	-12 hours), select 4 of the following courses: Integrated Mathematics Differential Equations Math Technologies History of Mathematics Mathematical Statistics II 33 Numerical Methods	10-12 hours

Mathematics Major - B.S. Degree

Same requirements as those for the B.A. degree, except that CIS 1144 or Secondary Certification is required instead of foreign language.

Certification for Teaching High School (Mathematics 9-12)

Students seeking certification with their mathematics major have the following courses added to the core courses listed above.

MAT 3353	Integrated Mathematics	3 hours
MAT 3372	Math Technologies	2 hours
MAT 3382	History of Mathematics	2 hours
MAT 3391	Preparing for Secondary Mathematics Teacher Certification Exam	1 hour
(waived if st	udent has already passed their Math Certification Exam by Spring of th	neir Junior Year)
MAT 4483	Contemporary Geometry	3 hours
Professional Ec	lucation Coursework	44 hours
See Education	on Certification Worksheet for Mathematics Grades 9-12 for specific E	DU requirements

The required support course requirement is the same. Enrollment in upper level education courses by all students seeking State Teacher Certification is limited to those students who have a cumulative GPA of 2.75, a GPA of 3.0 in Mathematics coursework, a GPA of 3.0 in professional education coursework, passed all state required assessments, completed their file in the Office of Teacher Education, and been approved by faculty in the Department of Mathematics and the Department of Education. A person fulfilling degree requirements may be eligible to graduate with or without teacher certification. (Please see Department of Education - Bachelor of Science Degree Certification in Content Areas, Grades 9-12, K-12.)

Minor in Mathematics

Nineteen hours of mathematics consisting of

MAT 1195	Calculus I	5 hours
MAT 2255	Calculus II	5 hours

Three other nor	n-freshman mathematics courses, excluding:		
MAT 2393	Geometry, Data, and Probability for Elementary/Middle School Teachers	5	
Required support courses , select 1 of the following courses:			
CIS 1033	Foundations of Computer Science	.3 hours	
CIS 1144	Computer Science I	.4 hours	

PRE-PROFESSIONAL STUDIES

Engineering Missouri University of Science and Technology

Southwest Baptist University, in cooperation with the Missouri University of Science and Technology, has a program in which students attend SBU for the first two years before transferring to Missouri S&T to complete a B.S. degree in one of the following engineering programs: aerospace, ceramic, chemical, civil, electrical, geological, metallurgical, mining, nuclear or petroleum engineering or engineering management. A typical SBU program of study is shown below.

First Year -- SBU

Fall

MAT 1195	Calculus I*	5 hours
CHE 1115	General Chemistry I	
ENG 1113	English Composition I	
UNI 1111	University Seminar	1 hour
Spring		
MAT 2255	Calculus II	
#CHE 1125	General Chemistry II	5 hours
ECO 2033	Principles of Macroeconomics	
UNI 1121	Introduction to Critical Thinking	1 hour

Second Year -- SBU

Fall

	MAT 2263	Calculus III	
	PHY 2215	University Physics I	5 hours
	HIS 22(1-2)3	History of U.S., 1492-1865 or History of U.S., 1865-Present	3 hours
		or	
	POL 1113	American Government	
	**Electives	Humanities/Social Sciences	6 hours
Sprin	g		
-	MAT 3363	Differential Equations	
	PHY 2225	University Physics II	5 hours
	#PHY 3233	Mechanics (Statics)	
	**Electives	Humanities/Social Sciences	

* Students without a satisfactory background in mathematics should take MAT 1163 PreCalculus before taking MAT 1195.

** These electives differ depending on the particular field of engineering; however, they are usually taken from Bible, Communications, Economics, Fine Arts, History, Philosophy, Psychology/Sociology or Literature. Six semester hours must be in upper division courses to give depth to one or two areas.

Some engineering curricula no longer require CHE 1125 *and/or* PHY 3233 at Missouri University of Science and Technology.

NOTE: Since the pre-engineering course of study is a general one at SBU, the pre-engineering student should work closely with the pre-engineering advisor (Dr. Perry A. Tompkins -- Professor of Physics) to facilitate any course modification among specific engineering programs.

Biology Major: Pre-Physical Therapy

The Biology Department at SBU has an undergraduate program of study in which students can prepare for entrance into the SBU Doctor of Physical Therapy (DPT) program. This program of study leads to a B. S. Degree in Biology and incorporates required entrance course work for the SBU DPT program. Other admission requirements for the SBU DPT should be obtained directly from the Department of Physical Therapy, Southwest Baptist University, Bolivar, MO, 65613, (417) 328 1672. Admissions to the SBU DPT program is based on competitive applications. Completion of the Biology Major: Pre Physical Therapy should not be construed as a guaranteed acceptance into the SBU DPT program, nor does it guarantee acceptance into physical therapy programs not associated with SBU. Students selecting this major are strongly encouraged to keep in close contact with both their Biology Department Advisor and the DPT Admission Coordinator beginning with their first year of study. The typical program of study is shown below.

First Year

Fall

	UNI 1111	University Seminar	r
	BIO 1111	Biology Colloquium	r
	BIO 1004	Principles of Biology	s
	ENG 1113	English Composition I #	s
	MAT 1143	College Algebra #	s
	BIB 1013	Old Testament History	s
Sprin	g		
•	UNI 1121	Introduction to Critical Thinking 1 hour	r
	BIO 2134	General Zoology	s
	ENG 2213	English Composition II	s
	CIS 1103	Computer & Information Management	s
	BIB 1023	New Testament History	5
	KIN 1162	Foundations of Physical Fitness/Wellness	s

Second Year

Fall

BIO 2204	Human Anatomy and Physiology I *	
CHE 1115	General Chemistry I *	5 hours
PSY 1013	General Psychology *	
COM 1103	Fundamentals of Speech Communication	
SPF 2012	Introduction to Spiritual Formation	

Spring

BIO 3304	Human Anatomy and Physiology II *	
CHE 1125	General Chemistry II *	5 hours
HIS 22(1-2)3	History of the United States, 1492-1865 or 1865-Present	3 hours
Cultural Studie	s Elective	
Elective	3 hours	

Third Year

Fall

PHY 1115	General Physics I *	5 hours
BIO 2234	General Botany	
BIO 3012	Methods in Scientific Research	
PSY3	Psychology Elective *	
FAR 10(0-3)3	Fine Arts Elective	

Spring

PHY 1125	General Physics II *	.5 hours
BIO 4404	Pathophysiology **	.4 hours
PSY 3243	Elementary Statistics *	. 3 hours

```
Electives 2 hours
```

Fourth Year

Fall

ran			
	BIO 3324	Genetics	4 hours
	BIO 4471	Biology Seminar	
	POL 1113	American Government	
	Biology Electiv	ve	
	Electives	3 hours	
Sprin	g		
-	BIO 3334	Introduction to Ecology	
	BIO4224	Cell and Molecular Biology	
	ECO 2003	LIFE Economics	
	Electives		

Placement in this course depends on ACT scores

* Prerequisite for DPT

** Strongly recommended but not required for DPT

^ Submit completed DPT graduate school application packet including GRE scores

Pre-Health Programs

Although SBU does not offer majors in pre-health programs, students can become well-qualified for acceptance into one of the professional schools of the health sciences. Plans of study are available for students pursuing entry into schools of dentistry, medicine, osteopathy, optometry, veterinary medicine, pharmacy, physicians assistant, or medical technology as well as other areas. Pre-professional programs for the health sciences vary in length from one to four years depending on the specific area of interest. Also, admission requirements are so varied that it is not possible to give detailed plans of study for each area of interest. Students need to be aware of the specific admission requirements of the professional school(s) to which they intend to apply and to select a plan of study accordingly. Students are strongly urged to work closely with their faculty academic advisors and the SBU Pre-Health Careers Committee on the selection of courses, the sequence in which the courses are taken, and on the fulfillment of the admission requirements of the chosen professional program(s).

Students applying to professional schools need to be aware of the deadlines established by the professional schools and testing organizations for submitting application materials and taking admissions examinations. The student is responsible for meeting these deadlines and for any fees associated with the application process or admission testing.

Students interested in pursuing a pre-health program at SBU should identify themselves with the SBU Pre-Health Careers Committee at the earliest possible date. The Pre-Health Careers Committee serves to counsel students and to assist them in obtaining catalogs, literature and other information pertinent to professional school admission requirements and admission testing procedures. Once the requirements for admission to a professional program have been met, the Pre-Health Careers Committee will, at the request of the student, interview the student and write letters of recommendation. For additional information on pre-medicine, pre-dentistry, pre-optometry, pre-osteopathy, pre-veterinary medicine, pre-pharmacy, pre-physicians assistant, and medical technology studies contact the Chairman, SBU Pre-Health Careers Committee, College of Science and Mathematics, Southwest Baptist University, Bolivar, MO, 65613, (417) 328-1659.

Students interested in a career in nursing should contact the Mercy College of Nursing and Health Sciences, 4431 South Fremont St., Springfield, MO, 65804, (417) 820-2069.

Medical Technology - B.S. Degree

Southwest Baptist University, in cooperation with the Cox School of Medical Technology, Cox Health Systems, Springfield, Missouri, offers a four-year program leading to a B.S. degree in medical technology. The fourth year of this work is taken at Cox Medical Center South (or an approved hospital or school of medical technology).

Upon satisfactory completion of this work, students are certified in this field by passing the examination given by the American Society of Clinical Pathologists.

- 1. Students must have senior standing (completed 96 semester hours of college credit) before admission to a National Accrediting Agency for Clinical Laboratory Science (NAACLS) approved school of medical technology.
- 2. Students must complete the SBU general education and graduation requirements.
- 3. At least the last 30 hours of the 96 hours of college credit must be taken at SBU.
- 4. Admission to a school of medical technology is determined by the national requirements and approval of the educational coordinator of the school of medical technology concerned.
- 5. Upon certification by the educational coordinator of an NAACLS approved school of medical technology that the courses in medical technology have been completed satisfactorily, SBU will grant a minimum of 30 semester hours of upper-division credit for the work.

The following SBU courses are required before admission to the medical technology program:

BIO 1004	Principles of Biology	
BIO 2204	Human Anatomy and Physiology I	
BIO 3304	Human Anatomy and Physiology II	
BIO 3314	Microbiology	
BIO 3322	Introduction to Immunology	
BIO 3324	Genetics	
BIO/CHE 3364	Biochemistry	
CHE 1115	General Chemistry I and CHE 1125 General Chemistry II	
CHE 3304	Organic Chemistry I and CHE 3314 Organic Chemistry II	
CHE 3345	Analytical Chemistry or CHE 3354Instrumental Analysis	4-5 hours

The following SBU courses are recommended as electives before admission to the medical technology program:

BIO 3384	Histology	4 hours
BIO 3394	Pathogenic Microbiology	4 hours
PSY/SOC 3243	Elementary Statistics	3 hours
MGT 4043	Organizational Behavior and Theory or FIN 3003 Personal Financial P	lanning3 hours

The following courses (with associated SBU credit hours awarded) are taken by students accepted into the Cox School of Medical Technology during the senior year:

MTC 401	Clinical Biochemistry	10 hours
MTC 402	Clinical Microscopy	
MTC 403	Clinical Hematology & Coagulation	7 hours
MTC 404	Diagnostic Immunology	4 hours
MTC 405	Clinical Microbiology	7 hours
MTC 406	Immunohematology	
MTC 407	Special Topics in Medical Technology	1 hour

THE DARRELL R. STRAIT CENTER FOR THE INTEGRATION OF SCIENCE AND CHRISTIAN FAITH

Center Director: Hillary Glauser-Patton Office: Wheeler 114/H - (417) 328-1668 Faculty: Stephen Bowling, Craig Endres, Robert Glasgow, Craig Masters, John Patton, Rosalyn Snellen, Perry Tompkins

The Darrell R. Strait Center for the Integration of Science and Christian Faith is an academic center housed within the SBU College of Science and Mathematics and named in memory of our beloved colleague, Dr. Darrell R. Strait. Dr. Strait was a long time employee of the University, senior professor of chemistry and former Dean of the College of Science and Mathematics. The Darrell R. Strait Center is home to an interdisciplinary program (major and minor

programs) focusing on the integration of science and Christian faith. In this Center, students study the history and philosophy of science, Biblical hermeneutics and the integration of science and Christian faith. Working from the authority of Scripture and the assertion that Christianity is true, these programs enable students to establish and validate Biblically based personal belief systems on the interrelations between science and Christian faith.

The baccalaureate degree in Integration of Science and Christian Faith requires a minimum of 128 semester hours of credit to be earned by completion of the University general education and graduation requirements, the Integration of Science and Christian Faith curriculum (shown below) and a second major in any other undergraduate degree program offered by SBU. Courses taken toward completion of the major may also be counted toward completion of the general education requirements or a second major in another degree program. A Second Major in any degree program at SBU is required with this major.

Integration of Science and Christian Faith Major - B.S. degree

General Education I	Requirements	42 hours
Graduation Require	ments	10 hours
Required Courses fo	r the Major	
CHE 1115	General Chemistry I and CHE 1125 General Chemistry II	10 hours
BIO 1004	Principles of Biology and 4 hours upper division biology	8 hours
PHY 1115	General Physics I OR	
PHY 2215	University Physics I	5 hours
MAT 1195	Calculus I OR	
PHY 1125	General Physics II OR	
PHY 2225	University Physics II	5 hours
BIB 2093	Methods of Biblical Interpretation	
PHI 2013	Philosophical Foundations for a Christian Worldview	
PHS 3303	History and Philosophy of Science and Technology	
SCF 3402	Biology Through the Eyes of Faith*	2 hours
SCF 3412	Chemistry Through the Eyes of Faith**	2 hours
SCF 3422	Mathematics Through the Eyes of Faith***	2 hours
SCF 3432	Physics Through the Eyes of Faith**	2 hours

* Prerequisite to this course is completion of the general education requirement in life science.

** Prerequisite to this course is completion of the general education requirement in physical science.

*** Prerequisite to this course is completion of the general education requirement in mathematics.

Minor in Integration of Science and Christian Faith

To obtain a minor in Integration of Science and Christian Faith, students must complete the following 17 semester hours of course work:

BIB 2093	Methods of Biblical Interpretation	3 hours
PHI 2013	Philosophical Foundations for a Christian Worldview	3 hours
PHS 3303	History and Philosophy of Science and Technology	3 hours
SCF 3402	Biology Through the Eyes of Faith	2 hours
SCF 3412	Chemistry Through the Eyes of Faith	2 hours
SCF 3422	Mathematics Through the Eyes of Faith	2 hours
SCF 3432	Physics Through the Eyes of Faith	2 hours