MISSISSIPPI STATE UNIVERSITY

DEPARTMENT OF BIOLOGICAL SCIENCES

Undergraduate Advising Handbook

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(Updated October 2016)

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WELCOME

The Department of Biological Sciences at Mississippi State University is currently home to 25 instructors and tenured faculty members and more than 1,100 undergraduate and graduate students. We offer three B.S. degrees (Biological Sciences, Microbiology, and Medical Technology) and three graduate degrees (a M.S. and a Ph.D. in Biological Sciences and an M.S. in General Biology, a distance program for science teachers.)

Research in the Department represents the breadth of the Biological Sciences, including work in Cellular and Developmental Biology, Microbiology, and Ecology & Evolutionary Biology. Our faculty have received research funding from all major federal funding agencies, as well as many state and private funding sources, and we have nationally respected faculty in each of the major research discipline stated above.

DEPARTMENT OF BIOLOGICAL SCIENCES
VISION AND MISSION STATEMENT

The vision of the Department of Biological Sciences at Mississippi State University is to develop a strong regional and national reputation as a research-active biology department and to leverage our strengths in research to deliver a high-quality comprehensive education in the biological sciences.

The mission of the Department of Biological Sciences is to:

- make scientific advances through peer-recognized scholarly research and communicate those findings among the scientific community;

- prepare our students for successful entry into careers or programs of advanced study by providing:

    - undergraduate students a fundamental, contemporary, advanced academic base, practical laboratory and /or field experience, exposure to investigative research, and opportunities for applied outreach;
    - graduate students an advanced academic experience, the opportunity to conduct original, hypothesis-driven research in areas of faculty expertise built on high quality scholarship, and the means to convey this knowledge; and
    - distance learning graduate students a quality education that will contribute to improving science education at the secondary level; and to

- engage citizens with results of these endeavors.

INTRODUCTION

Welcome to the Biological Sciences family! Your advisor is your personal connection to the department while assisting you in reaching your educational and professional goals. An advisor is not only an aid steering you toward graduation, but a career advisor and a personal friend.

The advising office professional staff include Dr. Mary Celeste Reese-Director of Undergraduate Advising, Ms. Martha Jean Wilson-Academic Coordinator, & Michael D. Black- Academic Coordinator. These advisors possess at total of more than 58 years of experience in higher education service. Communication is disseminated at the beginning of each academic year in regards to your particular assigned advisor. However, it is important to know that each advisor is cross-trained and can help any student within the Department of Biological Sciences.

This undergraduate advising guide is tool for you to take ownership of your success at Mississippi State University. At your fingertips is general and specific information you will need to know as a Biological Sciences, Medical Technology, or Microbiology major.

FACULTY

The Department of Biological Sciences is home to 25 instructors and tenured faculty members who have consistently been recognized for outstanding teaching and research. Tenure-track/tenured faculty members are actively engaged in research in the fields of: genetics, virology, quantitative ecology, molecular and cellular biology, microbiology, bacterial pathogenesis and genetics, developmental and reproductive biology, and plant ecology. Involvement of these faculty members in the classroom ensures that students receive up-to-date information from scientists working in those fields. Undergraduate students also have numerous opportunities to conduct research under faculty direction through the departmental Biology Undergraduate Research Program (BURP) as well as through individual faculty member's state and federally funded research projects.

STUDENTS

Currently, the Department of Biological Sciences is home to nearly 1,200 undergraduate and graduate students majoring in one of the three degree programs offered by the department. In addition to academic offerings, four student organizations are housed within the department: Beta Beta Beta, a national biology honor society, Alpha Epsilon Delta, a pre-health profession honor society, the American Medical Student Association (AMSA), and the Pre-dental society. These organizations sponsor programs such as medical school visits, MCAT, DAT, GRE preparation, and also participate in volunteer activities in the Starkville community by conducting blood drives and working with Habitat for Humanity, among many others.

DR. A. RANDLE AND MARILYN W. WHITE
PRE-MED ADVISORY OFFICE

The Dr. A. Randle & Marilyn W. White Pre-Medical Advising Office provides resources for students interested in pursuing a career in a health care profession, regardless of university major. Dr. and Mrs. White's financial contributions to Mississippi State University have created a centralized and valuable resource of information for students to learn how to successfully gain entry to health professional schools such as medical or dental school. We are exceedingly grateful for their dedication to MSU students.

Dr. A. Randle "Randy" White is a 1966 MSU chemistry and pre-medical graduate. As a MSU student, Dr. White served as a "duty boy" in the university hospital, which was located in George Hall at that time. Upon graduation, Dr. White received his medical degree from the University of Mississippi School of Medicine in Jackson. He graduated in 1969, interned at the University of Alabama Hospital in Birmingham, completed his residency in internal medicine at UMMC in 1970, and also completed a fellowship in nephrology at UMMC in 1978-1979.

Dr. White served as an Assistant Professor of Medicine at UMMC for eight years before beginning his private practice of nephrology in Greenwood in 1983. He is the founder and managing member of Delta Hills Nephrology Associates, PLLC. A passionate advocate for MSU and longtime member of the College of Arts & Sciences Dean's Executive Advisory Board, he was the College of Arts & Sciences Alumni Fellow in 2011.

Dr. White and his wife, Marilyn, currently reside in Greenwood.

Mississippi State University offers several pre-health professional opportunities for students.

Mississippi State offers numerous opportunities for students seeking to gain entry to a health professional school, such as medical, dental, physical/ occupational therapy, or nursing schools. Some health professional schools require a bachelor's degree while others, like nursing or dental hygiene school, do not. Those particular schools just require completion of pre-requisite courses, which are offered and fully-transferrable from Mississippi State University.

Concentrations such as "pre-med," "pre-dental," and "pre-nursing" are not majors.

These are areas of academic interest. Identifying your pre-professional interest will enable your advisor to provide you with a wide range of support to assist you in obtaining your career goals while aligning your degree curriculum in preparation for these concentrations.

HONOR CODE
MISSISSIPPI STATE UNIVERSITY

Ratified by the MSU Student Senate, December 1, 2006
Ratified by the MSU Graduate Council, January 26, 2007
Ratified by the MSU Faculty Senate, February 9, 2007
Approved by MSU President, February 15, 2007

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

THE DEPARTMENT OF BIOLOGICAL SCIENCES IS ALSO HOME TO MANY PRE-PROFESSIONAL STUDIES

TIPS AND THINGS YOU NEED TO KNOW:

- The majors offered are **Biological Sciences, Medical Technology, or Microbiology** with several concentrations to choose from: Pre-Dental, Pre-Medical, Pre-Nursing, Pre-Occupational Therapy, Pre-Optometry, Pre-Physical Therapy, Pre-Veterinary Medicine, as well as other health-related pre-professional programs in addition to concentrations in Botany or Zoology.

- Students should become familiar with the University Degree Audit System, called the Curriculum, Advising, and Program Planning (CAPP) Compliances. In Banner, students should enter their NetID and view current or previously generated CAPP compliances to view progress in meeting curriculum requirements. Students can also use the "**WHAT-IF**" option to investigate interest in other concentrations and/or evaluation opportunities for a double major.

- Students can transfer up to 62 hours of community college/junior college credit into their degree program at MSU. It is the student's responsibility to work with their former institution and the MSU Registrar's Office to have coursework transferred. Note that transferred credits must articulate (or directly substitute) for specific program requirements. Every course transferred may not be usable or articulate directly. Please see your advisor for questions regarding transfer credit.

- A Bachelor of Science degree is awarded on the transfer of satisfactory credits from other institutions provided the candidate, during at least one academic year in actual residence, receives 31 credits in upper-division courses in the College of Arts & Sciences.

- The Bachelor of Science degree is awarded on the completion of at least 124 semester credit hours (carrying two quality points for each credit hour) of approved study (not fewer than 31 semester hours on upper-division courses in residence at Mississippi State University) and on presentation through the dean or registrar of an approved school of medical technology of a certificate of the satisfactory completion of all courses in the first year of professional study.

All degree candidates in the College of Arts and Sciences are required to complete the A&S general education curriculum, which includes the requirements of the Board of Trustees, as well as the University core. The A&S general education curriculum consists of 36-48 semester hours divided among broad categories.

B.S. IN BIOLOGICAL SCIENCES

Biology is the science of life and of living organisms, including their structure, function, growth, origin, evolution, and distribution. Students pursuing a B.S. in Biological Sciences will complete a body of courses covering the unifying principles of biology. According to one survey, Biologists have the highest job satisfaction of any career. Why? It's because biology is inherently interesting. The questions and problems that biologists work on are often vitally important. In addition, biologists are also moderately well paid.

In today's job market, most professional Biologists need advanced degrees or specific training. The B.S. in Biological Sciences should be viewed as a pre-professional degree that prepares the student for either advanced study in the biological sciences or specific training in a profession (such as in medicine, therapy, law, education, engineering, or business). See the pre-professional options for more information. Because of these realities, biology majors must be focused and seek the challenge of a rigorous degree program.

Requirements and Options

The College of Arts and Sciences and MSU requirements also must be met. There are several possible areas of focus in Biological Sciences. Within the requirements each student can tailor their program, with the help of their advisor, to suit their interests in biology. A student may choose a liberal arts approach and take a broad selection of courses. A student may instead choose to focus their science electives and upper level biology courses on sub-disciplines such as Botany, Zoology, Cell Biology, Physiology, Ecology, or Natural History.

B.S. IN MICROBIOLOGY

The relevance of Microbiology is more applicable than ever before. From the emergence of deadly infectious diseases, to global climate change, to advances in biotechnology, to threats of bioterrorism, the impact of microorganisms on our very existence is stunning. Microorganisms constitute at least 60% of the earth's biomass, regulating the cycling of soil nutrients and atmospheric gases that sustain life on the planet. Microorganisms naturally produce or can be engineered to produce many of the chemicals, enzymes, and antibiotics that humans rely upon daily. They provide both beneficial and detrimental effects to the human body as they aid in digestion and provide a barrier to infection or overwhelm host defenses to produce disease. In the 21st century opportunities for careers in microbiology are abundant. Choosing Microbiology as your major is a great place to begin.

A degree in Microbiology provides:

1. great preparation for professional school (medicine, veterinary medicine, dentistry, optometry, etc.)
2. the basis for graduate school leading to a career as an academic or industry researcher (M.S., Ph.D.)
3. training for a career as a biomedical research technician, science educator, environmental scientist, and many other exciting career paths.

B.S. IN MEDICAL TECHNOLOGY

Medical Technology is a vital part of the field of laboratory medicine. A medical technologist performs a myriad of laboratory tests to find the causes and cures for disease. These tests include the analysis of blood, body fluids, cells, tissues, and also the isolation and identification of microorganisms which cause disease. In addition, the medical technologist performs tests which assess risk factors for disease and help determine overall health status.

The medical technologist must be knowledgeable in basic sciences and skilled at using sophisticated laboratory instruments. Employment opportunities for medical technologists are excellent. Besides work in hospital labs, positions are also available in research, administration, education, industry, private practice, and public health. A graduate in medical technology is eligible to one or more national certification examination given the American Society of Clinical Pathologists or by the National Certifying Agency for Medical Laboratory Personnel. Some states require a state license examination as well.

Students seeking the B.S. in Medical Technology spend 3 years on the MSU campus and one year of study at a MSU-affiliated hospital that houses an accredited school of medical technology. During the fourth-year hospital phase, students are considered MSU students and the B.S. degree is awarded upon completion of hospital training. Currently there are job openings throughout the United States because of a shortage of medical technologists. Graduates are prepared for certification by several national agencies.

Medical laboratory scientists work in five major areas of the laboratory: Blood Banking, Chemistry, Hematology, Immunology, and Microbiology. Medical laboratory scientists are self-sufficient, precise, and thorough.

B.S. in Biological Sciences

Biological Sciences Four-Year Track
(Updated 8/2016)

Freshman Year

Fall (17 hrs)	Spring (17 hrs)
Biology I w/lab	Biology II w/lab
Chemistry I	Chemistry II
Chemistry I Lab	Chemistry II Lab
College Algebra*/Calculus	Trigonometry*/Stats
English Comp I	English Comp II
Social Science Elective	History

Sophomore Year

Fall (15 hrs)	Spring (16 hrs)
Cell Biology (BIO 2103)	General Microbiology
Organic Chemistry I	Organic Chemistry II
General Physics I	General Physics II
Social Science Elective	Elective
Elective	Introduction to Communication

Junior Year

Fall (15 hrs)	Spring (16 hrs)
Elective	(AREA) Biology Course 4 hr.
(AREA) Biology Course 3 hr.	(AREA) Biology Course 3 hr.
(AREA) Biology Course 3 hr.	Professional Writing for Biologists (BIO 3013)**
Foreign Language I	Foreign Language II
Fine Art	Life Science Elective

Senior Year

Fall (16 hrs)	Spring (13 hrs)
(AREA) Biology Course 4 hr.	(AREA) Biology Course 4 hr.
(AREA) Biology Course 3 hr.	Human Genetics (BIO 4133)
Literature	Life Science Elective
Life Science Elective	Elective
Elective	

* These two courses can be replaced by taking Calculus I (Math ACT sub score of 26+ required)

**Substitute courses for BIO 3013:
AELC 3203–Intro to Technical Writing in AgriCommunications
EN 3313–Writing for the Workplace
EN 3303--Creative Writing
GG 4333–Geowriting

BIOLOGICAL SCIENCES DEGREE REQUIREMENTS (124 HOURS)

(Revised 8/2016)

Biology Core:	**21 Hrs.**	**University**
BIO 1134 Biology I[1]	4	_____
BIO 1144 Biology II[1]	4	_____
BIO 2103 Cell Biology	3	_____
BIO 3013 Writing for Bio[2]	3	_____
BIO 3304 Gen. Micro[1]	4	_____
BIO 4133 Human Genetics	3	_____

Biology Area: (see next page)		**24 Hrs.**
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____

Other Department Requirements:		
CH 1213 Chemistry I	3	_____
CH 1211 Invest. Chem. I Lab	1	_____
CH 1223 Chemistry II	3	_____
CH 1221 Invest. Chem. II Lab	1	_____
CH 4513 Organic Chem. I	3	_____
CH 4511 Org Chem I Lab[3]	1	_____
CH 4523 Org Chem II	3	_____
CH 4521 Org Chem II Lab[4]	1	_____
PH 1113 Gen. Physics I	3	_____
PH 1123 Gen. Physics II (or)	3	_____
PH 1133 Gen. Physics III	3	_____

Core Requirements:	**30 Hrs.**	
EN 1103 English Comp. I	3	_____
EN 1113 English Comp. II	3	_____
Literature Elective	3	_____
Fine Arts Elective	3	_____
FL___ 1113 Foreign Language	3	_____
FL___ 1123 Foreign Language	3	_____
History Elective	3	_____
CO1003 Fund of Pub Speaking (or)	3	_____
CO 1013 Intro. to Communication	3	_____
Social Science Elective	3	_____
Social Science Elective	3	_____

Math and Statistics Requirements:	**6 Hrs.**	
MA 1313 College Algebra (and)	3	_____
MA 1323 Trigonometry (or)	3	_____
ST 2113 Statistics	3	_____
OR		
MA 1713 Calculus I (satisfies all MA)	3	_____

Life Sciences Electives (next page)	**10 Hrs.**	
_____	___	_____
_____	___	_____
_____	___	_____

General Electives	**14 Hrs.**	
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____
_____	___	_____

[1]Requires Lab

[2]Substitute courses for **BIO 3013**
AELC 3203–Intro to Technical Writing in Agri-communications
EN 3313–Writing for the Workplace
EN 3303-- Creative Writing
GG 4333–Geowriting

[3]CH 4511 Org Chem I Lab (required for pre-med, pre-dental and pre-optometry)
[4]CH 4521 Org Chem II Lab (required for pre-med, pre-dent

BIOLOGY CORE= 21 HRS

BIO 1134 Biology I
BIO 1144 Biology II
BIO 2103 Cell Biology
BIO 3013 Writing for Biologists
BIO 3304 General Microbiology
BIO 4133 Human Genetics

BIOLOGY AREA COURSES = 24 HRS

Three (3) Biology Area Courses must include a laboratory (*)
A minimum of one animal course and one plant course is required from Areas 2, 3, or 4 (See advisor for other options)

1. **MOLECULES AND CELLS:**
   - BCH 4603/4613/4013 Biochemistry
   - BIO 3103 Genetics I*
   - BIO 4114 Cellular Physiology *
   - BIO 4324 Soil Microbiology*
   - BIO 4413 Immunology
   - BIO 4433 Principles of Virology
   - BIO 4503 Vertebrate Histology *
   - BIO 4504 Comparative Vertebrate Embryology *
2. **ANATOMY AND PHYSIOLOGY:**
   - BIO 3504 Comparative Anatomy *
   - BIO 4204 Plant Anatomy*
   - BIO 4214 General Plant Physiology *
   - BIO 4514 Animal Physiology *
3. **ORGANISMS: (**One animal course and one plant course are recommended)
   - BIO 2113 Plant Biology *
   - BIO 2213 Survey of Plants & Fungi *
   - BIO 3303 Parasitology *
   - BIO 3524 Biology of Vertebrates *
   - BIO 4203 Taxonomy of Spermatophytes *
   - BIO 4224 Aquatic Botany*
   - BIO 4603 Ethnobotany
4. **ECOLOGY AND EVOLUTION:**
   - BIO 3104 Ecology *
   - BIO 4113 Evolutionary Biology
   - BIO 4143 Population Genetics
   - BIO 4213 Plant Ecology *

Indicates the course includes a lab

LIFE SCIENCE ELECTIVE EXAMPLES = 10 HRS

FNH 1103 – Introduction to Food Science, Nutrition, and Health Promotion
FNH 2283 – Child Health and Nutrition
FNH 2293 - Individual & Family Nutrition
FNH 3163 - Basic Principles of Health Promotion
GG 1113 – Survey of Earth Sciences I (lab is not needed)
GG 1123 – Survey of Earth Sciences II (lab is not needed)
GG 1133 – Planetary Geology (no lab)
HS 1813 – Individual & Family Development through Lifespan
HS 2283 – Child Health & Nutrition
HS 2293 – Individual & Family Nutrition
HS 2803- Pre-natal and Infant Development
HS 2813 – Child Development
PSS 1313 – Plant Science
PSS 2343 – Floral Design

GENERAL ELECTIVE EXAMPLES (but not limited to) = 14 HRS

PH 1063 - Descriptive Astronomy
FIN 2003 - Personal Money Management
AAS 1063 - Intro to African American Studies
CO 2013 - Voice and Articulation
EPY 2513 - Human Growth and Development
PSY 3213 – Psychology of Abnormal Behavior (Pre-requisite PSY 1013 or 1093)
PHI 3323 - Medical Ethics (sophomore and above)
PHI 1123 - Intro to Ethics
KI 2603 - Medical Terminology (sophomore and above)

B.S. in Medical Technology

4-Year Track

(Updated 8/2016

Freshman Year

Fall	Spring
English Comp I	English Comp II
College Algebra	Trigonometry (or Intro to Stats)
Chemistry I	Chemistry II
Chemistry I Lab	Chemistry II Lab
Biology I	Social Science Elective
Social Science Elective	History Elective
17 hours	**16 Hours**

Sophomore Year

Fall	Spring
Literature Elective	Human Physiology
Organic Chemistry I	Bioinstrumentation
Foreign Language I	Organic Chemistry II
General Microbiology	Foreign Language II
Fine Arts Elective	Fund of Public Speaking or Intro to Communication
16 Hours	**16 Hours**

Junior Year

Fall	Spring
Pathogenic Microbiology	Principles of Biochemistry
Parasitology	Immunology
Writing for Biology***	Human Genetics
Free Elective	Free Elective
Free Elective	
17 Hours	**12 Hours**

Senior Year (Internship)

Fall	Spring
BIO 4630 – Special Topics	BIO 4606 – Clinical Microbiology
BIO 4660 – Serology/Immunology	BIO 4610 – Urinalysis
BIO 4670 -- Clinical Chemistry	BIO 4650 – Immunohematology
12 Hours	**12 Hours**
Summer	
BIO 4620 – Hematology	
6 Hours	

*** Substitute courses for BIO 3013:
AELC 3203–Intro to Technical Writing in Agri-communications
EN 3313–Writing for the Workplace
EN 3303-- Creative Writing
GG 4333–Geowriting

Summary of Requirements
General University Requirements……33 hours
Medical Technology Requirements……61 hours
Medical Technology Internship Requirements……30 hours

Hospitals Affiliated with Mississippi State University for the Medical Technology Internship Program
(12-month program – August to August – Must have a 2.75 GPA)

Jennifer Knight, MT (ASCP)
Program Director
School of Medical Technology
Mississippi Baptist Medical Center
1225 North State Street
Jackson, MS 39202
601-968-3070
Jenniferknight@mbmc.org

Lee Montgomery MT (ASCP)
Program Director
School of Medical Technology
North Mississippi Medical Center
830 South Gloster Street
Tupelo, MS 38801
662-377-3066
lmontgomery@nmhs.net

Holly Irby, Program Director
Vanderbilt University Medical Center
Room 4605, The Vanderbilt Clinic
1301 Medical Center Drive
Nashville, TN 37232-5310
615-322-8681
holly.j.irby@vanderbilt.edu

MEDICAL TECHNOLOGY DEGREE REQUIREMENTS – 124 HOURS

(Updated 8/2016)

Medical Technology Core:		**35 Hrs.**
BIO 1134 Biology I[1]	4	_____
BIO 3013 Writing for Bio[2]	3	_____
BIO 3014 Human Physiology[1]	4	_____
BIO 3303 Parasitology	3	_____
BIO 3304 Gen. Micro[1]	4	_____
BCH 4013 Prin of Biochem.	3	_____
BIO 4133 Human Genetics	3	_____
BIO 4303 Bioinstrumentation	3	_____
BIO 4405 Pathogenic Micro.	5	_____
BIO 4413 Immunology	3	_____

College Requirements:		**30 Hrs.**
EN 1103 English Comp. I	3	_____
EN 1113 English Comp. II	3	_____
Literature Elective	3	_____
Fine Arts Elective	3	_____
FL___ 1113 Foreign Language	3	_____
FL___ 1123 Foreign Language	3	_____
History Elective	3	_____
CO 1003 Fund of Pub Speaking		
OR		
CO 1013 Intro. to Communication	3	_____
Social Science Elective	3	_____
Social Science Elective	3	_____

Other Department Requirements:		**14 Hrs.**
CH 1213 Chemistry I	3	_____
CH 1211 Invest. Chem I Lab	1	_____
CH 1223 Chemistry II	3	_____
CH 1221 Invest. Chem II Lab	1	_____
CH 4513 Organic Chem I	3	_____
CH 4523 Org Chem II	3	_____

Math and Statistics Requirements:		**6 Hrs.**
MA 1313 College Algebra (and)	3	_____
MA 1323 Trigonometry (or)	3	_____
ST 2113/3113 Statistics	3	_____

Medical Tech. Internship Classes		**30 Hrs.**
(August to August – Affiliated Hospital)		
BIO 4602 Urinalysis	2	_____
BIO 4606 Clinical Micro.	6	_____
BIO 4612 Special Topics	2	_____
BIO 4614 Serology/Immun.	4	_____
BIO 4624 Immunohematology	4	_____
BIO 4626 Hematology	6	_____
BIO 4636 Clinical Chemistry	6	_____

General Electives:		**9 Hrs.**
_____	___	_____
_____	___	_____
_____	___	_____

[1]Requires Lab

[2]Substitute courses for BIO 3013- AELC 3203–Intro to Technical Writing in Agri-communications; EN 3313–Writing for the Workplace; GG 4333–Geowriting, EN 3303 Creative Writing

B.S. in Microbiology

4-Year Track

(Updated 8/2016)

Freshman Year

Fall (17 hrs)	Spring (17 hrs)
English Comp I	English Comp II
Calculus I	Chemistry II
Chemistry I	Chemistry II Lab
Chemistry I Lab	Biology II
Biology I	Social Science Elective
Social Science Elective	History Elective

Sophomore Year

Fall (13 hrs)	Spring (17 hrs)
Cell Biology	General Microbiology
Organic Chemistry I	Organic Chemistry II
Organic Chemistry I Lab	Organic Chemistry II Lab
General Physics I	General Physics II
Fine Arts Elective	Fund of Public Speaking or Intro to Comm.
	General Biochemistry I*

Junior Year

Fall (16 hrs)	Spring (15 hrs)
General Biochemistry II*	Writing for Biologists***
Bacterial Genetics Lab	Bacterial Genetics
General Physics III**	Immunology
General Elective	Intro to Statistical Inference
Bacterial Physiology	Foreign Language II
Foreign Language I	

Senior Year

Fall (13 hrs)	Spring (16 hrs)
Pathogenic Microbiology	Virology
General Elective	Microbiology Elective (4)
Microbiology Elective (4)	General Elective
General Elective	General Elective
	Literature Elective

*Pre-Med students take General Biochemistry I and II/others students can take Principles of Biochemistry

** Pre-Med Students only

***Substitutions for BIO 3103 Writing Course are: AELC 3203, EN 3313, EN 3303, GG 4333

Microbiology Electives – Food Microbiology, Animal Physiology, Human Anatomy, Human Physiology, Comparative Anatomy, Ecology, Plant Anatomy, Cellular Physiology, Plant Physiology, and Biology of Vertebrates

MICROBIOLOGY DEGREE (B.S.) REQUIREMENTS - 124 HOURS

(Updated 8/2016)

(B.S.-LEVEL POSITION, PRE-PROFESSIONAL, GRADUATE, AND MINOR[1] TRACKS)

Microbiology Requirements	**Hrs**	
BIO 3304 General Microbiology	4	___
BIO 4405 Pathogenic Microbiology	5	___
BIO 4413 Immunology	3	___
BIO 4433 Virology	3	___
BIO 4443 Bacterial Genetics	3	___
BIO 4442 Bacterial Genetics Lab	2	___
BIO 4463 Bacterial Physiology	3	___
Microbiology Electives (8 hrs) [2]		
_____		___
_____		___
_____		___

Departmental Core		
BIO 1134 Biology I	4	___
BIO 1144 Biology II	4	___
BIO 2103 Cell Biology	3	___

Other Dept. Requirements		
CH 1213 Chemistry I	3	___
CH 1211 Chemistry I Lab	1	___
CH 1223 Chemistry II	3	___
CH 1221 Chemistry II Lab	1	___
CH 4513 Organic Chemistry I	3	___
CH 4511 Organic Chemistry I Lab	1	___
CH 4523 Organic Chemistry II	3	___
CH 4521 Organic Chemistry II Lab	1	___
PH 1113 General Physics	3	___
PH 1123 or 1133 General Physics	3	___
BCH 4013 Principles of Biochemistry[3]	3	___

University Requirements	**Hrs**	
EN 1103 English Comp. I	3	___
EN 1113 English Comp. II	3	___
Literature elective	3	___
Fine Arts elective	3	___
FL_1113 (see options on next page)	3	___
FL_1123	3	___
HI elective	3	___
CO 1003 Fund of Public Speaking		
OR CO1013 Intro to Communication	3	___
Soc. Sci. elective	3	___
Soc. Sci. elective	3	___

Scientific Writing/Computer Literacy		
BIO 3013[4]	3	___

Math and Statistics Requirements		
MA 1713 Calculus I	3	___
ST 3123 Intro. Statistical Inference	3	___

General Electives	**15 or 18**	
_____	__	___
_____	__	___
_____	__	___
_____	__	___
_____	__	___
_____	__	___

[1]Students desiring a minor must take General Microbiology, Pathogenic Microbiology, and 2 elective microbiology courses to total no less than 19 total hours of microbiology coursework.

[2]Applied microbiology courses are strongly recommended, regardless of the Department in which they are offered (for example, Food Microbiology, Environmental Microbiology, or Soil Microbiology). Upper division courses in Medical Technology or Biochemistry are also acceptable. BIO 3504 (Comparative Anatomy), BIO 4133 (Human Genetics), BIO 4502 (Toxicology), BIO 3004 (Human Anatomy), and BIO 3014 (Human Physiology) are acceptable. Students are encouraged to obtain laboratory research experience by enrolling in Directed Individual Study for microbiology elective credit, with the approval of a faculty member willing to mentor the student. Students should see their advisor for assistance in selecting courses for microbiology elective credit. Hours in excess of 8 will reduce the general electives requirement by an equal number.

[3]Students on the pre-professional/graduate track are recommended to take BCH 4603/4613 and 15 hours of general electives; students on the B.S.-level position track may substitute BCH 4013 and 18 hours of general electives.

[4]Substitute courses for BIO 3013 - AELC 3203–Intro to Technical Writing in Agri-communications; EN 3313–Writing for the Workplace; GG 4333–Geowriting; EN 3303 Creative Writing

Requirements for a Minor in Biological Sciences (21 or 22 Hours)

Biology Core = 18 hours:

- BIO 1134- Biology I
- BIO 1144- Biology II (Must have completed BIO 1134 with a "C" or better)
- BIO 2103- Cell Biology (Must have completed BIO 1134, BIO 1144, CH 1213/ 11 & CH 1223/21 with a "C" or better)
- BIO 3304- General Microbiology (Must have completed BIO 1134, BIO 1144, CH 1213/ 11 & CH 1223/21 with a "C" or better)
- BIO 4133- Human Genetics (Must have completed BIO 1134, 1144, or 2113)

Choose **one** course from Area 3 *or* Area 4 below = 3 or 4 hours:

5. **ORGANISMS**
   - BIO 2113 Plant Biology *
   - BIO 2213 Survey of Plants & Fungi *
   - BIO 3303 Parasitology *
   - BIO 3524 Biology of Vertebrates *
   - BIO 4203 Taxonomy of Spermatophytes *
   - BIO 4224 Aquatic Botany*
   - BIO 4603 Ethnobotany
6. **ECOLOGY AND EVOLUTION**
   - BIO 3104 Ecology *
   - BIO 4113 Evolutionary Biology
   - BIO 4143 Population Genetics
   - BIO 4213 Plant Ecology *

* Indicates the course includes a lab

(NOTE: A MINIMUM GRADE OF "C" IS REQUIRED IN ALL BIOLOGY COURSES)

Requirements for a Microbiology Minor (19 hours)

Required Courses = 13 hours:

- BIO 1134- Biology I
- BIO 3304- General Microbiology (Must have completed BIO 1134, BIO 1144, CH 1213/ 11 & CH 1223/21 with a "C" or better)
- BIO 4405- Pathogenic Microbiology (Must have completed BIO 3304 with a "C" or better)

Choose **two** of the following courses = 6 hours:

- BIO 4413 Immunology (Must have completed BIO 3304 and CH 4513 with a "C" or better)
- BIO 4443- Bacterial Genetics (Must have completed BIO 3304 and BCH 4603 with a "C" or better
- BIO 4463- Bacterial Physiology (Must have completed BIO 3304 and BCH 4603 with a "C" or better
- BIO 4433 Principles of Virology (Must have completed BIO 3103, 3304, BCH 4603 with a "C" or better)

(NOTE: A MINIMUM GRADE OF "C" IS REQUIRED IN ALL BIOLOGY COURSES)

DEPARTMENTAL SCHOLARSHIPS

The Department of Biological Sciences offers a number of scholarships to outstanding and deserving students. The criteria for each scholarship is listed below. Students must be enrolled in a minimum of 12 credit hours each semester to receive scholarships. The deadline for submitting applications is December 1st if you wish to be considered for the upcoming fall semester. Please apply for all academic scholarship online at admissions.msstate.edu.

C.B. Mitchell Pre-Medical Scholarship

This is a four-year scholarship, typically awarded to high achieving entering freshmen in any major but must be planning on applying to medical school. Sophomores and juniors may apply but entering freshmen are given priority.

Coy E. Patton Memorial Scholarship

Candidates must be a full-time student at Mississippi State University enrolled in the College of Arts and Sciences with specific interest in the pre-dental curriculum tract. Must be a sophomore classification or higher. Demonstrate good moral character and have demonstrated leadership ability and financial need.

Harned Memorial Scholarship-Microbiology

Candidates for this scholarship should have above average scholastic achievement and while need are not the overriding factor in the decision it will be taken into consideration. Student must have a junior standing and be microbiology major.

John C. Longest Endowed Pre-Med Scholarship

Candidates must be a full-time student in the College of Arts and Sciences, majoring in Biological Sciences or Microbiology. Students who have a pre-medical concentration and who plan to pursue a career in medicine will be eligible. Juniors and seniors are eligible to apply.

Mabry-Clark Memorial Scholarship

Candidates must be a full-time female student at Mississippi State University enrolled in the College of Arts and Sciences, majoring in Biological Sciences: pre-medical, pre-veterinary, and medical-technician majors are not eligible to apply, must be a senior with plans to pursue research and attend graduate school in biological sciences, have demonstrated academic achievement with a minimum of a 3.0 GPA or better based on a 4.0 system, demonstrate good moral character, and have demonstrated leadership ability and financial need.

Mildred Watkins Brand Memorial Scholarship

Candidates must be a full-time student at Mississippi State University enrolled in the College of Arts and Sciences majoring in Biological Sciences with specific interest in the pre-med program. Selection of recipients shall be based on need and merit.

Dr. William E. Gardiner Memorial Award

Candidate must be a full-time student that has an emphasis of study in the field of plant sciences and/ or genetics. The student must be baccalaureate, must have demonstrated superior academic achievement, and must show potential in professional development in the field.

APPENDIX A

Concentration Curriculum Sheets

Biological Sciences (B.S.)

- Occupational Therapy……16-17
- Physical Therapy……17
- Pre-Medical……18
- Pre-Dental……18
- Pre-Nursing
  - University Medical Center (UMC) – Jackson, MS……19
  - Mississippi University for Women (MUW) – Columbus, MS……20
  - University of Southern Mississippi (USM) – Hattiesburg, MS……21
- Pre-Optometry……22
- Health Information Management……23
- Radiologic Sciences - Admission Requirements……24
- Pre-Veterinary Science (See advisor, Dr. Mary Celeste Reese)

UNIVERSITY OF MISSISSIPPI MEDICAL CENTER – OCCUPATIONAL THERAPY

ADMISSION REQUIREMENTS

REQUIRED COURSES	**NUMBER OF HOURS**
Communication	
English Comp I (EN 1103)	3
English Comp II (EN 1113)	3
Fundamentals of Public Speaking (CO 1003)	3
Humanities/Social Sciences/Behavioral Science/Fine Arts	
Humanities and Fine Arts (see listing)[1]	9
Social/Behavioral Science (see listing)[2]	6
General Psychology (PSY 1013)	3
Human Growth and Development or Developmental Psychology	3
Child or Adolescent or Abnormal Psychology	3
Natural Sciences	
General Biology 1 & 2 or Zoology (1 & 2)with Lab (BIO 1134 & BIO 1144)	8
Human Anatomy & Physiology with Lab (BIO 3004 and BIO 3014)[3]	8
General Chemistry with Lab (CH 1213 & CH 1211)	4
Physics with Lab (PH 1113)	4
Mathematics	
College Algebra (MA 1313), Quantitative Reasoning, or Higher Mathematics	3
Intro to Statistics (ST 2113)[4]	3
Electives [5]	9
Total prerequisite hours:	**72**

General Information:

- Have completed a minimum of 72 semester hours of academic credit. Sciences survey courses designed for non-science majors are not acceptable for transfer credit. Have successfully completed (a grade of C or better) on all the prerequisite courses. All applicants must have a minimum grade point average of 3.0 on a 4.0 scale.
- Provide evidence of 24 hours of observation in at least two occupational therapy clinical departments or practices within the calendar year preceding the application deadline.
- [1]Humanities and fine arts include courses such as art history, dance, history, modern languages, music, philosophy, religion, or theatre.
- [2]Social and behavioral sciences include courses such an anthropology, economics, political science, psychology, or sociology.
- [3]One course of pure human anatomy with lab and one course of pure physiology with lab is equivalent to two A&P courses.
- [4]Statistics may include courses such as elementary, behavioral, or introductory. Survey courses are not acceptable.
- [5] These are not required but might be helpful: medical terminology, trigonometry (prerequisite to physics), additional psychology courses and/or other biological science courses

PRE-OCCUPATIONAL THERAPY

Applications are accepted **online only** and are available from **July 1** until the application deadline each year. All application documents, including completed observation forms, all transcripts and the non-refundable $25 application fee must be received by the Office of Student Records and Registrar by **Jan. 15**. Students are strongly encouraged to complete the application submission well before the deadline date whenever possible. The program requires seventy-two (72) hours of prerequisite courses that can be taken at Mississippi State University prior to transfer to the University of Mississippi Medical Center upon acceptance.

Applicants who will be taking prerequisite courses after the application deadline, but immediately prior to enrollment (January-May) to the program, must complete the plan of study.

The application is not presented to the Occupational Therapy Admissions Committee until the Registrar at the University of Mississippi Medical Center receives it, and it is certified as complete. Any questions related to a submitted application or receipt of support documentation should be directed to the Master of Occupational Therapy Admissions Officer, Felicity Broderick, in the Registrar's Office at (601) 984-1085 or fbroderick@umc.org

To learn more about the UMMC Occupational Therapy Program, visit here.

PRE-PHYSICAL THERAPY

The online application process for the Doctor of Physical Therapy program at the University of Mississippi Medical Center opens July 1 each year; the application deadline is November 1 of the year that precedes potential entry into the program. To be eligible to apply, applicants must have a baccalaureate degree and meet specified pre-requisite course requirements with minimum 3.0 required and overall grade point averages.

- **Admission Requirements** contains information on 1) prerequisite course requirements, 2) DPT application instructions, and 3) forms for documenting observation hours.
- **Application Procedure** contains information for the Office of Student Records and Registrar and a link to the online application.

All applications to the DPT Program at UMMC must be submitted online. The applicant is responsible for submitting all required documentation to the Office of Student Records and Registrar by the application deadline to be considered for an interview. ***Please read the DPT Application Instructions carefully before submitting your application.***

To learn more about the UMMC Physical Therapy Program, visit here.

PRE-MEDICAL CONCENTRATION

The Department of Biological Sciences offers two degree programs for students who want to concentrate in Pre-Med: Biological Sciences or Microbiology. However, any bachelor's degree can be obtained to enter medical school. The typical pre-requisite courses for medical school are 6 hours of English, 6 hours of math, 8 hours of general biology, 8 hours of inorganic chemistry, 8 hours of organic chemistry and 8 hours of physics.

These degree programs encompass all medical school requirements with two exceptions:

1) For the Biological Sciences degree, pre-meds must take CH 4511 Organic Chemistry I lab, and CH 4521 Organic Chemistry II lab. The credit hours for lab can be used for life science electives.

2) For both degree programs, PH 1133 Physics III must be taken to satisfy UMMC's requirements. The credit hours for this course can be used as a general elective.

The following are a list of courses recommended for pre meds:

BIO 3033 Genetics I
BIO 3504 Comparative Anatomy
BCH 4113 Principles of Biochemistry
BIO 4503 Vertebrate Histology
BIO 4514 Animal Physiology

The MCAT is offered at Mississippi State University through the Computer Based Testing Services and should be taken the spring semester of the junior year. Another great resource for all MSU Pre-Med concentrations, regardless of major, is the new Pre-Med Advising Office located in 116 Harned Hall.

For example, UMMC's Medical School Selection Factors include:

- MCAT scores (average MCAT score of accepted applicants is 28)
- G.P.A. (average GPA of accepted applicants is 3.8)
- BCPM (biology, chemistry, physics, math) G.P.A. (average is 3.7)
- Community Service
- Evaluation letters from faculty
- Interview

Medical Schools

University of Mississippi Medical Center in Jackson, MS
University of Alabama at Birmingham in Birmingham, AL
The University of Tennessee Health Sciences Center in Memphis, TN
Vanderbilt University School of Medicine in Nashville, TN

Association of American Medical Schools Database

Pre-Med/Pre-Dental Four Year Track

~Freshman Year~

Fall (17)	Spring (17)
Biology I w/lab (BIO 1134)	Biology II w/lab (BIO 1144)
Chemistry I	Chemistry II
Chemistry I Lab	Chemistry II Lab
College Algebra*/Calculus	Trigonometry*
English Comp I	English Comp II
General Psychology	History

~Sophomore Year~

Fall (16)	Spring (13)
Cell Biology (BIO 2103)	Organic Chemistry II
Organic Chemistry I	Organic Chemistry II Lab
Organic Chemistry I Lab	General Physics II
General Physics I	Introduction to Communication
Social & Behavioral Science	General Microbiology (BIO 3304)
Elective/Intro to Stats***	

~Junior Year~

Fall (16)	Spring (16)
(AREA) Biology Course 3 hr.	(AREA) Biology Course 4 hr.
General Biochemistry I	General Biochemistry II
General Physics III**	Professional Writing for Biologists****
Foreign Language I	Foreign Language II
Fine Art	Life Science Elective

~Senior Year~

Fall (16)	Spring (13)
(AREA) Biology Course 4 hr.	(AREA) Biology Course 4 hr.
(AREA) Biology Course 3 hr.	Human Genetics
Literature	Life Science Elective
Life Science Elective	Elective
(AREA) Biology Course 3 hr.	----------

***Be aware that these two courses can be replaced by Calculus I.**
****Be aware that this course is only required for premed majors <u>ONLY</u>!**
*****Requirements for pre-dental majors <u>ONLY!</u>**
******Substitute courses for BIO 3013 – AIS 3203–Intro to Technical Writing in Agricommunications; EN 3313–Writing for the Workplace; EN 3303- Creative Writing; GG 4333–Geowriting.**

<u>Suggested 3 hr. Biology Area Courses</u>	<u>Suggested 4 hr. Biology Area Courses</u>
BIO 4413 - Immunology	BIO 3504 - Comparative Anatomy
BIO 4503 - Vertebrate Histology	BIO 4514 - Animal Physiology
BIO 3303 - Parasitology	BIO 3524 - Biology of Vertebrates
BIO 4433 - Principle of Virology	BIO 4114 - Cellular Physiology

(10/2016)

Traditional BSN and Accelerated BSN Prerequisites
School of Nursing University Medical Center, Jackson, MS

Natural Sciences and Mathematics – 26 Semester Hours

Sciences survey courses or courses for non-science majors are not acceptable for transfer credit. Math courses must be at or above the college algebra level. Sciences courses taken more than 10 years ago will not be accepted for transfer credit.

Requirements	Hours	Course	Complete
General Chemistry I with lab (4 semester hours)	4	CH 1213/1211	
Sciences with lab	4	BIO 1134	
Microbiology with lab	4	BIO 3304	
Human Anatomy	4	BIO 3004	
Human Physiology	4	BIO 3014	
College Algebra or higher level math	3	MA 1313	
Statistics	3	ST 2113	

Psychosocial Sciences – 18 Semester Hours

Requirements	Hours	Course	Complete
General Psychology	3	PSY 1013	
Introductory Sociology	3	SO 1003	
Developmental Psychology *	3	PSY 3803	
Nutrition	3	HS 2293	
Psychosocial Sciences Elective **	3		
Psychosocial Sciences Elective **	3		

* a. In a senior college, Developmental Psychology, to include development from infancy through old age
b. In a junior or community college, HGD, to include development from infancy through old age

** Abnormal Psychology or other psychology courses, Anthropology, Economics, Geography, History, Political Science, Social Problems or other sociology courses

Humanities and Fine Arts – 18 Semester Hours

Requirements	Hours	Course	Complete
English Composition I	3	EN 1103	
English Composition II	3	EN 1113	
Speech	3	CO 1003	
Humanities and Fine Arts Elective	3		
Humanities and Fine Arts Elective	3		
Humanities and Fine Arts Elective	3		

Unacceptable Courses: None of the required courses listed, described, or recommended above may be met by the following: courses in physical training; military science; dogmatic religion; mathematics or science designed for non-science majors or course credit granted without college-level testing.

Revised: 10/2016

To learn more about the UMMC BSN Program, visit here.

FINE ARTS (One course required)

___ARC 1013 Architectural Appreciation
___ARC 2313 History of Architecture I
___ARC 3313 History of Architecture II
___ARC 3323 History of Architecture III
___ART 1013 Art History I (Prehistoric to Renaissance)
___ART 1023 Art History II (Renaissance to Present)
___ART 1113 Art Appreciation
___CO 1503 Intro to Theatre
___MU 1113 Music Appreciation

___MU 1103 African American Music
___MU 2323 Music History III

FOREIGN LANGUAGES (Two semesters in one language required.) (Must be taken consecutively)

____FLS 1113 and FLS 1123 Spanish I & II
____FLF 1113 and FLF 1123 French I & II
____FLG 1113 and FLG 1123 German I & II
____FLJ 1113 and FLJ 1123 Japanese I & II
____FLL 1113 and FLL 1123 Latin I & II
____FLR 1113 and FLR 1123 Russian I & II
____FLH 1113 and FLH 1123 Greek I & II

PUBLIC SPEAKING (One course required)

___CO 1003 Fundamentals of Public Speaking *OR*
___CO 1013 Introduction to Communication

HUMANITIES (One EN and One HI course required)

___EN 2203 Intro to Literature (Not applicable if EN 1183, or 1193 taken)
___EN 2213 English Literature (Beginning to Romantic Period)
___EN 2223 English Literature (Romantic Period to present)
___EN 2243 American Literature (Beginning to Whitman)
___EN 2253 American Literature (Whitman to present)
___EN 2273 World Literature (Greek, Roman, and Medieval European translations)
___EN 2283 World Lit (Non-English speaking world, Renaissance to 20th Century)
___HI 1063 Early U.S. History
___HI 1073 Modern U.S. History
___HI 1163 World History Before 1500
___HI 1173 World History Since 1500
___HI 1213 Early Western World
___HI 1223 Modern Western World
___HI 1313 East Asian Civilizations to 1300
___HI 1323 East Asian Civilizations Since 1300

SOCIAL AND BEHAVIORAL SCIENCES (Two courses in separate disciplines required)

__AN 1103 Introduction to Anthropology
__AN 1143 Introduction to Cultural Anthropology
__AN 1543 Introduction to Archaeology

__CO 1223 ***or*** 1403 Intro to Communication Theory ***or*** Intro to Mass Media
__EC 2113 ***or*** 2123 Principles of Macroeconomics ***or*** Principles of Microeconomics

__GR 1123 Introduction to World Geography
__GR 2013 Cultural Geography
__GR 3113 Conservation of Natural Resources
__GR 4123 Urban Geography
__GR 4203 Geography of North America
__PS 1113 American Government
___PS 1313 Introduction to International Relations
__PS 1513 Comparative Government
__PS 2713 Introduction to Engineering and Public Policy

__PSY 1013 General Psychology
__PSY 3073 Psychology of Interpersonal Relations

__SO 1003 Introduction to Sociology
__SO 1103 Contemporary Social Problems

__SO 1203 Sociology of Families

MISSISSIPPI UNIVERSITY FOR WOMEN (MUW)
BSN Prerequisite Check List

All students who plan to apply to the MUW program must first make an appointment with Dr. Tammy McCoy, RN, PhD. Contact information: bsn@muw.edu. 662-329-7301 - Fax: 662-329-8559

Written and Oral Communication (9 hours required)

EN 1103___ English Composition I (3)
EN 1113___English Composition II (3)
CO 1003___Fundamentals of Public Speaking (3)

Critical Thinking (3 hours required)

PHI 1103___Introduction to Philosophy (3)
PHI 1113___Introduction to Logic (3)
PHI 1123___Introduction to Ethics (3)
PHI 2123___Medical Ethics (3)

Natural Sciences (with lab, 15 hours required)

BIO 3004___Human Anatomy* (4)
BIO 3014___Human Physiology (4)
BIO 3304___General Microbiology*(4)
Human Pathophysiology* (3) *(Must take at MUW)*

Health-Related (3 hours)

FNH 2293___Individual and Family Nutrition* (3)

Humanities and Fine Arts (12 hours required)

History Survey (3-6)

HI 1063___Early U.S. History (3)
HI 1073___Modern U.S. History (3)
HI 1213___Early Western World (3)
HI 1223___Modern Western World (3)

Literature Survey (3-6)

EN 2203___Introduction to Literature
EN 2213___English Literature I (3)
EN 2223___English Literature II (3)
EN 2243___American Literature I (3)
EN 2253___ American Literature II (3)
EN 2273___World Literature (3)
EN 2283___ World Literature (3)

Fine Arts History/Appreciation (3-6)

ART 1013___Art History I (3)
ART 1023___ Art History II (3)
ART 1113___Art Appreciation (3)
PE 1323___History and Appreciation of Dance (3)
MU 1113___History and Appreciation of Music(3)
CO 1503___Introduction to Theater (3)

Qualifying Skills (6 hours required)

MA 1313___College Algebra (3)
MA 2113___Introduction to Statistics (3)*

Social Science (3 hours required)

PSY 1013___ General Psychology* (3)

General Courses----------51 hours
General Core Electives----------11 hours

TOTAL PRE-REQ HOURS---------62 hours

***= Nursing Requirements**

(revised: 8/2016)

For more information on the MUW BSN program, visit here.

THE UNIVERSITY OF SOUTHERN MISSISSIPPI - SCHOOL OF NURSING
BACHELOR OF SCIENCE (BSN)
NON-NURSING PREREQUISITE COURSES AND CREDITS

EN 1103 – English Comp I (3)
EN 1113 – English Comp II (3)

MA 1313 – College Algebra (3)
ST 2113 – Intro to Stats (3)

HI 1213 – Early Western World (3)
HI 1223 – Modern Western World (3)

BIO 1134 – Biology I (4)
BIO 3004 – Human Anatomy (4)

SO 1003 – Intro to Sociology (3)
S0 1203 – Marriage and Family (3)

FNH 2293 – Individual & Family Nutrition (3)
EN 2273 or EN 2283 – World Literature (3)

CH 1213 – Chemistry I (3)
CH 1211 – Invest in Chemistry I Lab (1)

PSY 1013 – General Psychology (3)
PSY 3803 – Intro to Developmental Psychology (3)

BIO 3014 – Human Physiology (4)
BIO 3304 – General Microbiology (4)

Fine Arts (3)*

Total 59 hours
A grade of "C" or better is required in all courses.

***FINE ARTS (One course required.)**
___ART 1113 Art Appreciation
___CO 1503 Intro to Theatre
___MU 1113 Music Appreciation
___PE 1323 History and Appreciation of Dance

Requirements:

- Acceptance to Southern Miss and the Southern Mississippi nursing program.
- An ACT of 21 or above.
- A GPA of at least 2.5 or above on a 4.0 scale in non-nursing prerequisite courses and at least a 2.0 in each course.
- Only one required science course may be repeated, one time.
- All prerequisite courses completed before matriculation into nursing.
- Proof of current CPR certification.
- Proof of physical exam; immunizations (MMR, Tdap, Hepatitis B); varicella vaccine or titer; and TB skin test.
- Proof of criminal background check and/or affidavit.
- Controlled-substances screen.
- Must be in good academic standing at Southern Miss; cannot be on probation, probation continued, or suspension.
- Applicants transferring from another school of nursing must provide a letter from the dean/director of that school stating that s/he is in good standing and eligible for progression in that program.
  (Revised: 10/2016)

For more information on the USM BSN Program, visit here.

SOUTHERN COLLEGE OF OPTOMETRY
Memphis, Tennessee

A candidate for admissions to Southern College of Optometry (SCO) is required to complete at least 90 semester hours or 135 quarter hours at an accredited undergraduate institution prior to enrollment at SCO. Applicants can be submitted after two full years of undergraduate work if the candidate is eligible to continue at least the last school attended. Strong preference will be given to applicants with baccalaureate or higher degrees. All applicants must be in good academic standing and complete the following prerequisite courses prior to enrolling at SCO.

THE PREREQUISITE COURSES ARE:

• English Composition I and II and or literature (one year[1])	EN 1103 & EN 1113
• General Psychology (one course)	PSY 1013
• Social Sciences[2] (one year[1])	SO 1003 & SO 1103
• Statistics (one course)	ST 2113
• Calculus (one course)	MA 1713
• General Biology w/labs (one year)	BIO 1134* & BIO 1144*
• Microbiology with *lab[3] (one course)	BIO 3304
• General Physics I & II w/labs (one year[1])	PH 1113 & PH 1123*
• General Chemistry w/labs (one year[1])	CH 1213 & CH 1211*
	CH 1223 & CH 1221*
• Organic Chemistry (one course)	CH 4513 & CH 4511*
• Biochemistry[4] (one course	BCH 4013

[1]One year is equal to two semesters or three quarters.
[2]The Social Science requirement may be satisfied by completing courses in any of the following areas: Sociology, Psychology, Political Science, History, Economics, Anthropology, Geography, Religion or Philosophy.
[3]Bacteriology with lab is the only course that can be used as a substitute for Microbiology.
[4]Molecular Biology is the only course that can be used as a substitute for Biochemistry.

To learn more about the Southern College of Optometry, visit here.

HEALTH INFORMATICS AND INFORMATION MANAGEMENT

HIIM professionals are experts in managing the collection, storage, retrieval, analysis, and interpretation of healthcare data and information. To provide the highest healthcare delivery, healthcare information is used not only for patient care, but also for legal issues, reimbursement, research, planning, and evaluation.

Opportunities for employment are found in a variety of settings, including hospitals, clinics, rehabilitation centers, home health agencies, health maintenance organizations, insurance agencies, governmental agencies, educational institutions, and research centers.

The University of Mississippi Medical Center is please to offer both on-line bachelor's and master's programs for Health Informatics and Information Management professionals and students who are interested in becoming part of this fast growing field. Please click the links to learn more information regarding these exciting opportunities.

ADMISSION REQUIREMENTS

To be eligible for admission to the RHIT to Health Information Administrator progression program, candidates must:

- Have a 2.5 GPA on a 4.0 scale;
- Submit ACT scores;
- Have completed 60 semester hours of academic credit from an approved institution of higher learning listed below with a "C" or better:

PREREQUISITE COURSES	SEMESTER HOURS
English Composition	6
Humanities and Fine Arts	9
College Algebra, Quantitative Reasoning or Higher Mathematics	3
Human Anatomy	3
Human Physiology	3
Social or Behavioral Science	6
Basic Computer Concepts and Applications	3
Electives	22
TOTAL	60

To learn more about the UMMC HIIM Program, visit here.

RADIOLOGIC SCIENCES - ADMISSION REQUIREMENTS

Selection of applicants is made on a competitive basis and equal education opportunity is offered to all students who meet the entrance requirements without regard to race, creed, sex, color, religion, marital status, sexual orientation, age, national origin, disability, or veteran status.

Preference is given to applicants who are legal residents of Mississippi. A student desiring admission to the Radiologic Sciences program must submit an online application for admission to the Office of the Registrar, an official transcript of grades and an official statement documenting scores on the American College Test (ACT). Since the program has limited student capacity, selection into the program is competitive. Not every applicant who applies to the program will be selected.

No applicant is accepted until the admissions process is complete, which includes an interview by the admission committee. Applicants should not present themselves for interviews until notified. Those applicants whom the admission committee deems it advisable to interview are provided with sufficient notice of interview appointment.

In addition to the admission standards of the institution and the general admission requirements of the School of Health Related Professions, candidates seeking admission to the radiologic sciences program must:

- Have completed a minimum of 60 semester hours of academic credit (exclusive of physical education, military science, dogmatic religion and vocational courses) from a regionally accredited institution of higher learning;
- Have a minimum overall cumulative grade point average of 2.5 on 4.0 scale;
- Complete an interview;
- Submit ACT scores;
- Have current CPR certification at the time of registration;
- Successfully complete a background check at time of registration
- Have successfully completed (a grade of C or better) the following minimum prerequisite number of required courses:

Prerequisite Courses	**# of Courses**	**Semester Hours**
English Composition	2	6
Social or Behavioral Science*	2	6
College Algebra, Quantitative Reasoning or Higher Mathematics	1	3
Speech	1	3
Humanities and Fine Arts**	3	9
Anatomy and Physiology with Lab	2	8
Natural Sciences***	1	3
Basic Computer Concepts and Applications	1	3
Electives****		19
Total Prerequisites		**60**

*Social and behavioral sciences include courses such as anthropology, economics, political science, psychology, or sociology.
** Humanities and fine arts include courses such as history, literature, foreign languages, journalism, philosophy, religion, art history, music appreciation, or theatre.
***Natural Sciences include courses such as astronomy, biology, chemistry, geology, physics or physical science
****Recommended electives include medical terminology, natural sciences (general chemistry, physics, biology, and microbiology), advanced mathematics, and advanced computer sciences.

To learn more about the UMMC Radiologic Sciences Program, visit here.

APPENDIX B

Request for Waiver of Overload Policy……..27
Request to Enroll in Off-Campus Course……..28

REQUEST FOR WAIVER OF OVERLOAD POLICY

Name: _____ Date: _____

ID#: _____ Major: _____ Email: _____

Local Mailing Address: _____ Local Phone: _____

I request permission to take a total of _____ hours during the period of enrollment noted below. I realize that I will not be allowed to drop any of my courses beyond the last day to drop. I also accept the responsibility for my actions in this overload.

Enrollment period (check one):

- Fall _____ 1st 5-week summer term _____ Total hours ____
- Spring _____ 2nd 5-week summer term _____ Total hours ____
  10-week summer term _____ Total hours ____

My grade point average is:

1. _____ for the term immediately preceding the enrollment period noted.
2. _____ MSU grade point average.
3. _____ Cumulative grade point average.

Classification: Freshman____ Sophomore____ Junior____ Senior____

I expect to graduate at the end of the period of enrollment noted above: Yes_____ No_____

Reason for request:_____
_____
_____

Comments/Conditions: _____
_____
_____

LIST OF ALL COURSES * Indicates Overload Course

Course	Symbol	Number	Section	Course	Symbol	Number	Section

Student _____ Date _____ Advisor _____ Date _____

Department Head _____ Date _____ Dean _____ Date _____

(October 2001)

MISSISSIPPI STATE UNIVERSITY™
COLLEGE OF ARTS & SCIENCES

Request To Enroll In Off-Campus Course

Mississippi State University
Office of the Associate Dean of Academic and Student Affairs
224 Allen Hall – Mail Stop 9706
Tel. No. (662) 325-2646 – Fax: (662) 325-8740
Box AS, Mississippi State, MS 39762

Contact person: Tracy Britt or Barbara Stewart, Academic Coordinators
Email: trbitt@deanas.msstate.edu or bstewart@deanas.msstate.edu

_____ _____ _____
Name MSU ID Number Major

Total hours earned from:

- Community/Junior College _____
- Senior College other than MSU _____
- Mississippi State University _____

Total Hours Completed _____

*Acceptance of junior or community college work is limited to one-half of the total requirements for graduation in a given curriculum.

I request permission to take the following course(s) at a regionally accredited institution other than Mississippi State University during the_____Term 20_____.

Name of Institute and location:_____
_____

Course Number_____ Description Title_____
Course Number_____ Description Title_____
Course Number_____ Description Title_____

I request a waiver for completing in residence at Mississippi State University the last 32 hours of course work to fulfill degree requirements: _____Yes _____No

Student's Signature:_____ Date_____

Student's MSU Email Address:_____

APPROVED:_____ _____
Advisor Academic Coordinator