

Biomedical Sciences (BS)

Degree Requirements

General Education (56 - 58 Hours)

Area I - Written Composition (2 Courses, 6 Hours)

- A. 3 hours: EH 101
- B. 3 hours: EH 102

Area II - Humanities & Fine Arts (4 Courses, 12 Hours)

- A. 3 hours: CA 110
- B. 3 hours from: ARH 100, ARH 103, ARH 123, ARS 101, DRA 110, MUL 101
- C. 3 hours from: EH 215, EH 216, EH 225, EH 226, EH 235, EH 236
- D. 3 hours from: AFR 101, EH 215, EH 216, EH 225, EH 226, EH 235, EH 236, LG 101, LG 102, LG 111, LG 112, LG 121, LG 122, LG 131, LG 132, LG 141, LG 142, LG 151, LG 152, LG 153, LG 171, LG 172, LG 173, LG 201, LG 202, LG 211, LG 212, LG 213, LG 221, LG 222, LG 231, LG 232, LG 234, LG 241, LG 242, LG 251, LG 252, LG 271, LG 272, LG 273, LGS 101, LGS 102, LGS 106, LGS 107, LGS 110, LGS 111, LGS 171, LGS 172, LGS 201, LGS 202, LGS 206, LGS 207, LGS 210, LGS 211, PHL 110, PHL 120, PHL 121, PHL 131, PHL 220, PHL 231, PHL 240, REL 100, REL 200, REL 201

Area III – Natural Sciences & Mathematics (3 Courses & Labs, 11-12 Hours)

- A. 3-4 hours from: MA 113, MA 115, MA 120, MA 125, MA 126, MA 227, MA 237, MA 238
- B. 8 hours: CH 131 & CH 131L, CH 132 & CH 132L

Area IV – History, Social & Behavioral Sciences (4 Courses, 12 Hours)

- A. 3 hours from: HY 101, HY 102, HY 121, HY 122, HY 135, HY 136
- B. 9 hours from: AN 100, AN 101, CA 100, CA 211, ECO 215, ECO 216, GEO 114, GEO 115, GS 101, HY 101, HY 102, HY 135, HY 136, IS 100, IST 201, NAS 101, PSC 130, PSY 120*, PSY 250*, SY 109*, SY 112*

Area V - Supporting Required Courses (15-16 Hours)

- A. 8 hours: BLY 121 & BLY 121L, CH 201 & CH 201L
- B. 3 hours from: ST 210, ST 305
- C. 4-5 hours: AN 121 & AN 121L ** or PH 114 & PH 114L

NOTES

Students must complete a 6 credit hour sequence either in literature (Area II – EH 215 & EH 216, EH 225 & EH 226, or EH 235 & EH 236) or history (Area IV – HY 101 & HY 102, HY 121 & HY 122, or HY 135 & HY 136)

* Recommended

** Only students in the Public and Global Health (PGH) Concentration should enroll in AN 121 / AN 121L

Major Requirements (48 Hours)

Biomedical Sciences Core (6-8 Courses, 17-19 Hours)

- A. 9 hours: BMD 201, BMD 321, BMD 322, BMD 323
- B. 4-6 hours: BMD 251 or BMD 311*** & BMD 334***
- C. 4 hours: BMD 210 & BMD 210L or BMD 402

***Students enrolled in the Pre-Health Professional (PHP) concentration are required to complete BMD 311 and BMD 334

Electives - (16-17 Unduplicated Hours)

- A. 16-17 hours from: BMD 210, BMD 210L, BMD 212, BMD 212L, BMD 251, BMD 252, BMD 290, BMD 311, BMD 331, BMD 334, BMD 335, BMD 336, BMD 350, BMD 351, BMD 390, BMD 401, BMD 402, BMD 403, BMD 410, BMD 420, BMD 430, BMD 441, BMD 450, BMD 451, BMD 490, BMD 493, BMD 494, BMD 499, BLY 301, BLY 411, BLY 459, EMS 210

Concentration Options - (14-15 Hours)

- A. 15 hours in Pre-Health Professional (PHP): BMD 335, BMD 336, BMD 350, BMD 401, BMD 430
 B. 15 hours in Public and Global Health (PGH): IS 100, KIN 263, BMD 351, BMD 441, HS 462
 C. 14 hours in Biotechnology (BT): BMD 331, BMD 350, BMD 451, BLY 445

Minor Requirements (0 Hours)

A minor is not required for this degree program

Notes:

A maximum of 3 hours of BMD 450, BMD 494 or BMD 499 can count toward major electives

Students interested in Health Professions (e.g. dental, medicine, pharmacy, etc.) and/or Ph.D. programs in Basic Medical Sciences may also need to enroll in General Biology II, Physics II, Organic Chemistry II and/or Calculus.

All undergraduates must complete two designated writing credit (W) courses, at least one of which must be in the student's major.

Additional classes may be needed to reach the 120 total credit hours required for graduation.

Graduation Plan**Biomedical Science (BS): PHP Concentration
(120 Total Hours)****First Year - Fall Semester**

Course ID	Course Description	Hours
EH 101	English Composition I	3
BLY 121 & BLY 121L	General Biology with Lab	4
CH 131 & CH 131L	General Chemistry with Lab	4
PSY 120	Introduction to Psychology or Area IV B. Social Science Elective	3
BMD 201	Seminars in Biomedical Sciences	1
Total Hours		15

First Year - Spring Semester

Course ID	Course Description	Hours
EH 102	English Composition II	3
BLY 122 & BLY 122L	***General Biology II with Lab	4
CH 132 & CH 132L	General Chemistry II with Lab	4

Math	**Area III, A	3-4
Total Hours		14-15

Second Year - Fall Semester

Course ID	Course Description	Hours
CH 201 & CH 201L	Organic Chemistry I with Lab	4
PH 114 & PH 114L or	Physics with Algebra/Trig I with Lab or	5
PH 201 & PH 201L	Calculus-based Physics I with Lab	4
Fine Arts Elective	**Area II, B	3
History	**Area IV, A	3
Total Hours		14-15

Second Year - Spring Semester

Course ID	Course Description	Hours
CH 202 & CH 202L	***Organic Chemistry II with Lab	4
PH 115 & PH 115L or	***Physics with Algebra/Trig II with Lab or	5
PH 202 & PH 202L	***Calculus-based Physics II with Lab	4
ST 210 or ST 305	Statistical Reasoning or Applied Stat Health Sciences	3
CA 110	Public Speaking	3
Total Hours		14-15

Third Year - Fall Semester

Course ID	Course Description	Hours
BMD 311	Human Anatomy	3
BMD 321	Biochemistry I	3
BMD 334	Human Physiology I	3
History	**Area IV, B (History #2 for Sequence or Social Science Elective)	3
Literature	**Area II, C	3
Total Hours		15

Third Year - Spring Semester

Course ID	Course Description	Hours
BMD 322	Biochemistry II	3

BMD 323	Biochemistry Lab	2
BMD 335	Human Physiology II	3
BMD 336	Human Physiology II Lab (W)	2
BMD Elective	**Major Elective	3
Literature	**Area II, D. (Literature #2 for Sequence or Humanities Elective)	3
Total Hours		16

Fourth Year - Fall Semester

Course ID	Course Description	Hours
BMD 401	Immunology	3
BMD Electives	**Major Electives	4
BMD 430	Neurosciences	4
BMD 493	Ethical Issues in Health (W)	3
Social Science	**Area IV, B. Social Science Elective	3
Total Hours		17

Fourth Year - Spring Semester

Course ID	Course Description	Hours
BMD 402	Medical Microbiology	4
BMD Electives	**Major Electives	6
BMD 350	Human Genetics and Genomics	3
General Elective		3
Total Hours		16

Notes

**See Degree Requirements

***Not required, recommended for students pursuing Health Professions Programs or Graduate School

(W) Writing-Intensive Course

Major Milestones

Effective for fall, 2016 Major Milestones are used in all concentrations of the Biomedical Sciences major to help students stay on track for timely graduation. Each regular semester in the Biomedical Sciences major is a tracking term. In order to remain on track, students must complete the milestone requirements for each tracking term. These requirements are viewable on the Major Milestones table below.

Major milestone requirements apply only to full-time, degree-seeking students who first entered Fall 2016 or later. Milestone requirements do not apply to transfer students in the Biomedical Sciences program.

The sample academic plan viewable on the Major Milestone tab below is designed to ensure graduation in the Biomedical Sciences major in four years. Several academic plans are available – consult with your academic advisor for the plan that is the best fit for you. For specific course requirements, refer to the program requirements above and the General Education requirement of the College of Allied Health Professions.

Biomedical Sciences Major Milestones

Term 1	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
AHP 101 CAS 100 HSC 101	First-Year Experience College Success		2	
EH 101/ EH 102	English Composition I/ English Composition II	EH 101 or ACT English Score 27	3	
PSY 120	Intro to Psychology		3	
BLY 121/ BLY 121L	General Biology I/Lab	ACT Math 22	4	
CH 131/ CH 131L	General Chemistry I/ Lab	ACT Math 24 or MA 112	4	
			16	
Term 2	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
EH 102	English Composition II	EH 101 or ACT English Score 27	3	MA 113 or MA 115
CH 132/ CH 132L	General Chemistry II/ Lab	CH 131/CH 131L	4	
BLY 122/ BLY 122L	General Biology II/Lab	BLY 121/BLY 121L	4	
MA 125	Calculus I	ACT Math 27 or MA 113, MA 115	4	
			15	
Term 3	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
CH 201/ CH 201L	Organic Chemistry II/ Lab	CH 132/CH 132L	4	CH 132/CH 132L with a grade of C or better
PH 114/PH 114L	Physics with Algebra/ Trig I/L	ACT Math 25, MA 113, MA 115	5	BLY 121/BLY 121L with a grade of C or better
BMD 201	Seminars in Biomedical Sciences		1	
History Elective			3	

Literature Elective	3
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Term 4	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
CH 202/ CH 202L	Organic Chemistry II	CH 201/CH 201L	4	CH 132/CH 132L with a grade of C or better
PH 115/PH 115L	Physics with Algebra/Trig II/L	PH 114/PH 114L	5	
ST 210	Statistical Reasoning		3	
CA 110	Public Speaking		3	
			15	

Term 5	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
BMD 311	Human Anatomy	BLY 121	3	BLY 122/BLY 122L with a grade of C or better
BMD 321	Biochemistry I	CH 201/CH 201L	3	CH 201/CH 201L with a grade of C or better
BMD 334	Physiology I	BLY 121, CH 131, CH 132	3	PH 114 with a grade of C or better
History #2 or Social Science Elective			3	
Literature #2 or Humanities Elective			3	
			15	

Term 6	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
BMD 322	Biochemistry II	BMD 321 and CH 201	3	
BMD 323	Biochemistry II lab	BMD 321	1	
BMD 335	Human Physiology II	BMD 334 and EH 102	3	
BMD 336 - W	Human Physiology II	BMD 334, BMD 335 and EH 102(C grade required)	1	

Social Science Elective			3
CIS 150 or CIS 010 and General Elective	Intro Computer Application Proficiency Test (pass)		3
			14

Term 7	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
BMD 401	Immunology	BMD 321	3	BMD 311 with a grade of C or better
BMD Elective			3	
BMD 430	Neurosciences	BMD 311 and BMD 334	4	
BMD 493	Issues in Biomedical Science	BLY 121 and EH 102	3	
Fine Arts Elective			3	
			16	

Term 8	Course Description	Pre-requisite	Cr Hrs	Milestone Notes
BMD 402	Medical Microbiology	BMD 321	4	
BMD Elective			3	
BMD 450	Intro to Research	BMD 321	2	
General elective			3	
			12	

Department Information

Biomedical Sciences Administrative Staff	(251) 445-9265
Chair	Nancy Rice
Professors	Rice
Professor Emeritus	Covey, Davis, Spector, Turrens
Associate Professor Emeritus	Stanfield
Associate Professors	Mockett, Ravine, Shokolenko, Thulasiraman

Assistant Professors

Gorelik, Swiger

Instructors

Henry

[Department of Biomedical Sciences website](https://www.southalabama.edu/colleges/alliedhealth/biomedical)
<https://www.southalabama.edu/colleges/alliedhealth/biomedical>

The Department of Biomedical Sciences educates students for successful health-related careers by providing instruction in core scientific content, encouraging critical thinking and providing active collaboration; it engages in hypothesis-driven research, embraces global diversity, and guides students to become life-long learners dedicated to enriching the scientific and healthcare community. The curriculum offers students a strong general education in the humanities, arts, and social sciences, followed by in-depth study in one of three concentrations: Pre-Health Professional Health (PHP), Biotechnology, and Public and Global Health. The program offers an optional Honors Research Thesis (BMD 499) to qualified students consisting of a laboratory apprenticeship in biomedical research under the mentorship of a faculty scientist. Students interested in the Honors Research Thesis option should contact Dr. Robin Mockett for information.

Concentrations

Pre-Health Professional (PHP)

The PHP concentration provides a strong foundation in basic human sciences, with corollary work in chemistry, math, and statistics. The PHP concentration prepares students to pursue post baccalaureate educational experiences in any biomedical discipline, including medicine, dentistry, pharmacy, optometry, as well as a Ph.D. degree in a variety of health and science related fields. In addition, this concentration offers prerequisite coursework for students wishing to pursue programs in the Pat Capps Covey College of Allied Health Professions.

Biotechnology (BT)

The BT concentration provides a strong foundation in basic human sciences, with an emphasis on fundamental concepts of genetics, molecular biology, and recombinant DNA technology. The core requirements have a strong applied skill-based laboratory component that further reinforces theoretical concepts. The BT concentration prepares students for entry level biotechnology jobs or post-graduate (M.S. and Ph.D.) research programs.

Public And Global Health (PGH)

The PGH concentration offers students interested in healthcare careers with a foundational knowledge of those challenges that limit the provision of health care globally. This concentration provides a strong foundation in basic human sciences, corollary work in chemistry, math, and statistics, and adds a multi-disciplinary exploration into key factors important to health and disease in resource limited areas. Students in the PGH concentration will gain knowledge of public health, global diseases, international healthcare systems, and introduction to epidemiology, as well as a basic knowledge of those social and environmental factors that impact health and disease in vulnerable populations. A BMD degree with a concentration in PGH prepares students for a tremendous diversity of graduate programs and careers in scientific research, public health, global health education, and jobs in industry and government laboratories (CDC).