

# Human Biology – Bachelor of Science

<https://natsci.msu.edu/about/departments-and-programs/human-bio-program.aspx>

Administered by the College of Natural Science Dean's Office

University Requirements			
	Cr.		Cr.
WRA 101	4	ISS 200 level	4
IAH 201-210	4	ISS 300 level	4
IAH 211 or higher	4		
Introductory Science and Math Requirements			
<b>Mathematics</b> One course from each group (1 and 2): 1. <i>MTH 124 Survey of Calculus I</i> MTH 132 Calculus I MTH 152H Honors Calculus I 2. <i>STT 231 Statistics for Scientists</i> STT 201 Statistical Methods STT 421 Statistics I MTH 126 Survey of Calculus II MTH 133 Calculus II MTH 153H Honors Calculus II		<b>Biology</b> All courses from one of the following groups: 1. BS 161 Cell and Molecular Biology BS 162 Organismal and Population Biology BS 171 Cell and Molecular Biology Lab BS 172 Organismal and Population Biology Lab 2. BS 181H Honors Cell and Molecular Biology BS 182H Honors Organismal and Population BS 191H Honors Cell and Molecular Biology Lab BS 192H Honors Organismal and Population Lab	
<b>Chemistry</b> All courses from one of the following groups: 1. <i>CEM 141 General Chemistry</i> <i>CEM 142 General &amp; Inorganic Chemistry</i> <i>CEM 161 Chemistry Lab I</i> <i>CEM 162 Chemistry Lab II</i> 2. CEM 151 Principles of Chemistry I CEM 152 Principles of Chemistry II CEM 161 Chemistry Lab I CEM 162 Chemistry Lab II 3. CEM 181H Honors Chemistry I CEM 182H Honors Chemistry II CEM 185H Honors Chemistry Lab I		<b>Physics</b> All courses from one of the following groups: 1. <i>PHY 221 Studio Physics for Life Scientists I</i> <i>PHY 222 Studio Physics for Life Scientists II</i> 2. PHY 193H Honors Physics I-Mechanics PHY 294H Honors Physics II-Electromagnetism PHY 191 Physics Laboratory for Scientists I PHY 192 Physics Laboratory for Scientists II	
Foundational Course Requirements			
<b>Organic Chemistry</b> All of the following: CEM 251 Organic Chemistry I CEM 252 Organic Chemistry II CEM 255 Organic Chemistry Lab  <b>Biochemistry</b> BMB 401 Comprehensive Biochemistry  <b>Genetics</b> IBIO 341 Fundamental Genetics  <b>Anatomy</b> One of the following courses: 1. <i>ANTR 350 Human Gross Anatomy</i> 2. IBIO 320 Developmental Biology 3. IBIO 328 Comparative Anatomy (W)  <b>Human Biology</b> HBIO 495 Capstone in Human Biology *(Prerequisite will be HBIO 295, effective Fall 2026)		<b>Physiology</b> All courses from one of the following groups: 1. <i>PSL 310 Physiology for Pre-Health Professionals</i> 2. PSL 431 Human Physiology I PSL 432 Human Physiology II  <b>Advanced Cell Biology/Immunology</b> One of the following courses: 1. HBIO 410 Cellular Basis of Disease** 2. BLD 434 Clinical Immunology* 3. MMG 409 Eukaryotic Cell Biology ** 4. MMG 413 Virology (discontinued SS23) 5. MMG 451 Immunology* 6. IBIO 425 Cells and Development (W)  If more than one Advanced Cell Biology Option is taken, the second course can be applied as a selective. *Do not take both BLD 434 and MMG 451. These are considered equivalent courses. **Do not take both HBIO 410 and MMG 409. These are considered equivalent courses.	

## Selectives

### Twelve credits from the following selective courses:

(DOES NOT INCLUDE COURSES USED TO FULFILL ANOTHER AREA OF THE MAJOR REQUIREMENTS)

#### Anthropology

ANP 204 Introduction to Medical Anthropology**	3
ANP 206 Introduction to Physical Anthropology**	3
ANP 270 Women and Health: Anthropological and International Perspectives**	3
ANP 370 Culture, Health, and Illness	3
ANP 425 Issues in Medical Anthropology	3
ANP 441 Osteology and Forensic Anthropology	4
ANP 443 Human Adaptability	3

#### Anatomy

ANTR 355 Human Gross Anatomy Laboratory	2
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#### Biomedical and Laboratory Diagnostics

BLD 204 Mechanisms of Disease (Must be taken before senior status, 88+ credits)	3
BLD 213L Clinical Laboratory Methods	2
BLD 324 Fundamentals of Hematology, Hemostasis, and Urinalysis	3
BLD 430 Molecular Diagnostics	2
BLD 439 Histocompatibility and Immunogenetics	1
BLD 446 Immunobiology of Neoplasia	1
BLD 447 Immunomodulation and Immunotherapy	1

#### Epidemiology

EPI 390 Disease in Society: Introduction to Epidemiology & Public Health**	4
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#### Human Biology

HBIO 295 Human Biology and Society	2
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#### Human Nutrition

HNF 310 Nutrition in Medicine for Pre-Health Professionals	3
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#### Integrative Biology

IBIO 408 Histology	4
IBIO 445 Evolution (W)	3
IBIO 450 Cancer Biology (W)	3

#### Microbiology

MMG 301 Introductory Microbiology	3
MMG 302 Introductory Lab for General and Allied Health Microbiology	1
MMG 365 Medical Microbiology	3
MMG 365L Medical Microbiology Laboratory	1
MMG 404 Human genetics	3
MMG 431 Microbial Genetics	3
MMG 461 Molecular Pathogenesis	3
MMG 465 Advanced Medical Microbiology	3
MMG 465L Advanced Medical Microbiology Laboratory	2

#### Neurobiology

NEU 300 Neurobiology	3
NEU 310 Psychology and Biology of Human Sexuality	3

#### Pharmacology

PHM 321 Common Drugs	3
PHM 350 Introductory Human Pharmacology	3
PHM 351 Fundamentals of Drug Safety	3
PHM 422 Fundamentals of Neuropharmacology	2
PHM 430 Human Pharmacology	3
PHM 431 Pharmacology of Drug Addiction**	3
PHM 440 Principles of Drug Action	1
PHM 450 Introduction to Chemical Toxicology	3
PHM 461 Tropical Medicine Pharmacology	2

#### Physiology

PSL 311L Physiology Laboratory for Pre-Health Professionals	2
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<b>Psychology</b>		3
PSY 320 Health Psychology		3
PSY 333 Neurobiology of Food Intake		
<b>Public Health</b>		3
PH 101 Introduction to Public Health**		3
OST 450 Introduction to Global Health**		
<b>**No prerequisites</b>		

With the approval of the director of the human biology major, a maximum of 3 credits in research (HBIO 498), internship (HBIO 497) or independent study (HBIO 496) courses may be used to satisfy this requirement.

**Additional Graduation Requirements:**

- **300-400 Level Courses: 30 credits**
- **Students must have a least a 2.0 cumulative GPA and at least a 2.0 cumulative Major GPA**

*Please monitor your Degree Progress on <https://student.msu.edu/>*

# College of Natural Science

## Human Biology Course Timeline

*The following is a list of courses required for the Human Biology major. This is only a sample guide.*

<b>Freshman</b>		<b>Sophomore</b>		<b>Junior</b>		<b>Senior</b>	
<b>Fall</b>	<b>Spring</b>	<b>Fall</b>	<b>Spring</b>	<b>Fall</b>	<b>Spring</b>	<b>Fall</b>	<b>Spring</b>
CEM 141/161	CEM 142/162	CEM 251	CEM 252/255	PSL 310 <i>(Or PSL 431 and 432 in Spring)</i>	Anatomy Option	Advanced Cell Biology Option <i>(Or in the Spring)</i>	Human Biology Required Selective <i>(Or in the Fall)</i>
MATH	MATH	BS 161/171	BS 162/172	PHY 221	PHY 222	Human Biology Required Selective	Human Biology Required Selective
ISS 200 Level <i>(University Requirement)</i>	WRA 101 <i>(University Requirement)</i>	IAH 201-210 <i>(University Requirement)</i>	IAH 211 or higher <i>(University Requirement)</i>	ISS 300 Level <i>(University Requirement)</i>	BMB 401	Human Biology Required Selective	IBIO 341
Elective	Elective	Elective <i>(Or MTH)</i>	Elective <i>(Or MTH)</i>	Elective	Elective	HBIO 495	Elective

**\*\*\*Many courses are offered in the summer. Consult with your advisor to determine if summer courses would be a good option for you.\*\*\***