Human Biology – Bachelor of Science

[*https://natsci.msu.edu/about/departments-and-programs/human-biology-program/*](https://natsci.msu.edu/about/departments-and-programs/human-biology-program/)

*Administered by the College of Natural Science Dean’s Office*

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| --- |
| University Requirements |
|  | Cr. |  | Cr. |
| WRA 101IAH 201-210IAH 211 or higher | 444 | ISS 200 levelISS 300 level | 44 |
| College Requirements |
| **Biology**BS 162 Organisms & Populations BS 172 Organismal Biology Lab**Chemistry** One of the following (groups 1, 2, 3 etc.):1. CEM 141 General Chemistry

CEM 142 General & Inorganic Chemistry CEM 161 Chemistry Lab I 1. CEM 151 Principals of Chemistry I

CEM 152 Principles of Chemistry II CEM 161 Chemistry Lab I 1. CEM 181H Honors Chemistry I

CEM 182H Honors Chemistry II CEM 185H Honors Chemistry Lab I**Mathematics** One of the following (groups 1, 2, 3 etc.):1. MTH 124 Survey of Calculus I

MTH 126 Survey of Calculus II1. MTH 132 Calculus I

MTH 133 Calculus II1. MTH 124 Survey of Calculus I

STT (201, 231, 351, or 421)1. MTH 132 Calculus I

STT (201, 231, 351, or 421)1. MTH 152H Honors Calculus I

MTH 153H Honors Calculus II | 32431431442333433-433-434 | **Physics** One of the following (groups 1, 2, 3 etc.):1. PHY 183 Physics for Scientists & Engineers I

PHY 184 Physics for Scientists & Engineers IIPHY 191 Physics Lab for Scientists IPHY 192 Physics Lab for Scientists II 1. PHY 231 Intro Physics I

PHY 232 Intro Physics IIPHY 251 Intro Physics Lab IPHY 252 Intro Physics Lab II1. PHY 193H Honors Physics I

PHY 294H Honors Physics IIPHY 191 Physics Lab for Scientists IPHY 192 Physics Lab for Scientists II 1. PHY 241 Physics for Cellular & Molecular Biologists I

PHY 242 Physics for Cellular & Molecular Biologists IIPHY 251 Intro Physics Lab IPHY 252 Intro Physics Lab II 5. PHY 221 Studio Physics for Life Scientists I PHY 222 Studio Physics for Life Scientists II300-400 Level Courses | 44113311441144114430 |
| Major Requirements |
| **All of the following:**BMB 401 Comprehensive BiochemistryBS 161 Cells and MoleculesBS 171 Cell and Molecular Biology LabCEM 162 Chemistry Lab IICEM 251 Organic Chemistry ICEM 252 Organic Chemistry IICEM 255 Organic Chemistry LabHBIO 495 Capstone in Human Biology (W)IBIO 341 Fundamental Genetics | 432133234 | **One of the following groups:**1. PSL 310 Physiology for Pre-Health Professionals
2. PSL 431 Human Physiology I

PSL 432 Human Physiology II | 444 |
| Major Requirements, Cont’d |
| **One of the following courses *(Advanced Cell Biology Option)*:**MMG 409 Eukaryotic Cell BiologyMMG 413 VirologyMMG 451 ImmunologyBLD 434 Clinical Immunology | 3333 | **One of the following courses *(Anatomy Option)*:**ANTR 350 Human Gross AnatomyIBIO 320 Developmental BiologyIBIO 328 Comparative Anatomy & Biology of Vertebrates (W) | 344 |
| **Twelve credits from the following selective courses**: *(****DOES NOT INCLUDE COURSES USED TO FULFILL ANOTHER AREA OF THE MAJOR REQUIREMENTS****)*ANP 441 Osteology and Forensic AnthropologyBLD 204 Mechanisms of DiseaseBLD 324 Fundamentals of Hematology, Hemostasis, and UrinalysisBLD 434 Clinical ImmunologyBLD 439 Histocompatibility and ImmunogeneticsBLD 446 Immunobiology of NeoplasiaBLD 447 Immunomodulation and ImmunotherapyHBIO 295 Human Biology and SocietyHNF 310 Nutrition in Medicine for Pre-Health ProfessionalsIBIO 408 HistologyIBIO 425 Cells and Development (W)IBIO 445 Evolution (W)IBIO 450 Cancer Biology (W)IBIO 483 Environmental Physiology (W)EPI 390 Disease in Society: Introduction to Epidemiology & Public HealthMMG 301 Introductory MicrobiologyMMG 302 Introductory Lab for General and Allied Health MicrobiologyMMG 365 Medical MicrobiologyMMG 365L Medical Microbiology LaboratoryMMG 404 Human geneticsMMG 409 Eukaryotic Cell BiologyMMG 413 VirologyMMG 431 Microbial GeneticsMMG 451 ImmunologyMMG 461 Molecular PathogenesisMMG 465 Advanced Medical MicrobiologyMMG 465L Advanced Medical Microbiology LaboratoryNEU 300 NeurobiologyNEU 310 Psychology and Biology of Human SexualityHBIO 496 Directed Study in Human BiologyHBIO 497 Internship in Human BiologyHBIO 498 Research in Human BiologyPHM 321 Common DrugsPHM 350 Introductory Human PharmacologyPHM 430 Human PharmacologyPHM 431 Pharmacology of Drug AddictionPHM 440 Principles of Drug ActionPHM 450 Introduction to Chemical ToxicologyPHM 461 Tropical Medicine PharmacologyPSL 311L Physiology Laboratory for Pre-Health Professionals | 433311123443344313133333332331-31-31-333331322 |

**Additional Graduation Requirements:**

* **Students must reach 120 credits (or 123 credits if starting in MTH 1825)**
* **Students must have a least a 2.0 cumulative GPA**
* **Students must have at least a 2.0 cumulative Major GPA**

***Please monitor your Degree Progress on*** [***https://student.msu.edu/***](https://student.msu.edu/)

**College of Natural Science**

**Human Biology Course Time Line**

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

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| --- | --- | --- | --- |
| **Freshman** | **Sophomore** | **Junior** | **Senior** |
| **Fall** | **Spring** | **Fall** | **Spring** | **Fall** | **Spring** | **Fall** | **Spring** |
| CEM 141/161 | CEM 142/162 | CEM 251 | CEM 252/255 | PSL 310*(Or PSL 431 and 432 in Spring)* | Anatomy Option  | Advanced Cell Biology Option*(Or in the Spring)* | Human Biology Required Selective*(Or in the Fall)* |
| MATH | MATH | BS 161/171 | BS 162/172 | PHY 231/251Or221 | PHY 232/252Or222  | Human Biology Required Selective | Human Biology Required Selective |
| ISS 200 Level*(University Requirement)* | WRA 101*(University Requirement)* | IAH 201-210*(University Requirement)* | IAH 211 or higher*(University Requirement)* | ISS 300 Level*(University Requirement)* | BMB 401 | Human Biology Required Selective  | IBIO 341 |
| Elective | Elective | Elective*(Or MTH)* | Elective*(Or MTH)* | 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.\*\*\****

*10/21 KT*