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 101  IAH 201-210  IAH 211 or higher | 4  4  4 | ISS 200 level  ISS 300 level | 4  4 |
| 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 II   1. MTH 132 Calculus I   MTH 133 Calculus II   1. 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 | 3  2  4  3  1  4  3  1  4  4  2  3  3  3  4  3  3-4  3  3-4  3  4 | **Physics**  One of the following (groups 1, 2, 3 etc.):   1. PHY 183 Physics for Scientists & Engineers I   PHY 184 Physics for Scientists & Engineers II  PHY 191 Physics Lab for Scientists I  PHY 192 Physics Lab for Scientists II   1. PHY 231 Intro Physics I   PHY 232 Intro Physics II  PHY 251 Intro Physics Lab I  PHY 252 Intro Physics Lab II   1. PHY 193H Honors Physics I   PHY 294H Honors Physics II  PHY 191 Physics Lab for Scientists I  PHY 192 Physics Lab for Scientists II   1. PHY 241 Physics for Cellular & Molecular Biologists I   PHY 242 Physics for Cellular & Molecular Biologists II  PHY 251 Intro Physics Lab I  PHY 252 Intro Physics Lab II  5. PHY 221 Studio Physics for Life Scientists I  PHY 222 Studio Physics for Life Scientists II  300-400 Level Courses | 4  4  1  1  3  3  1  1  4  4  1  1  4  4  1  1  4  4  30 |
| Major Requirements | | | |
| **All of the following:**  BMB 401 Comprehensive Biochemistry  BS 161 Cells and Molecules  BS 171 Cell and Molecular Biology Lab  CEM 162 Chemistry Lab II  CEM 251 Organic Chemistry I  CEM 252 Organic Chemistry II  CEM 255 Organic Chemistry Lab  HBIO 495 Capstone in Human Biology (W)  IBIO 341 Fundamental Genetics | 4  3  2  1  3  3  2  3  4 | **One of the following groups:**   1. PSL 310 Physiology for Pre-Health Professionals 2. PSL 431 Human Physiology I   PSL 432 Human Physiology II | 4  4  4 |
| Major Requirements, Cont’d | | | |
| **One of the following courses *(Advanced Cell Biology Option)*:**  MMG 409 Eukaryotic Cell Biology  MMG 413 Virology  MMG 451 Immunology  BLD 434 Clinical Immunology | 3  3  3  3 | **One of the following courses *(Anatomy Option)*:**  ANTR 350 Human Gross Anatomy  IBIO 320 Developmental Biology  IBIO 328 Comparative Anatomy & Biology of Vertebrates (W) | 3  4  4 |
| **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 Anthropology  BLD 204 Mechanisms of Disease  BLD 324 Fundamentals of Hematology, Hemostasis, and Urinalysis  BLD 434 Clinical Immunology  BLD 439 Histocompatibility and Immunogenetics  BLD 446 Immunobiology of Neoplasia  BLD 447 Immunomodulation and Immunotherapy  HBIO 295 Human Biology and Society  HNF 310 Nutrition in Medicine for Pre-Health Professionals  IBIO 408 Histology  IBIO 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 Health  MMG 301 Introductory Microbiology  MMG 302 Introductory Lab for General and Allied Health Microbiology  MMG 365 Medical Microbiology  MMG 365L Medical Microbiology Laboratory  MMG 404 Human genetics  MMG 409 Eukaryotic Cell Biology  MMG 413 Virology  MMG 431 Microbial Genetics  MMG 451 Immunology  MMG 461 Molecular Pathogenesis  MMG 465 Advanced Medical Microbiology  MMG 465L Advanced Medical Microbiology Laboratory  NEU 300 Neurobiology  NEU 310 Psychology and Biology of Human Sexuality  HBIO 496 Directed Study in Human Biology  HBIO 497 Internship in Human Biology  HBIO 498 Research in Human Biology  PHM 321 Common Drugs  PHM 350 Introductory Human Pharmacology  PHM 430 Human Pharmacology  PHM 431 Pharmacology of Drug Addiction  PHM 440 Principles of Drug Action  PHM 450 Introduction to Chemical Toxicology  PHM 461 Tropical Medicine Pharmacology  PSL 311L Physiology Laboratory for Pre-Health Professionals | | | 4  3  3  3  1  1  1  2  3  4  4  3  3  4  4  3  1  3  1  3  3  3  3  3  3  3  2  3  3  1-3  1-3  1-3  3  3  3  3  1  3  2  2 |

**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.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 231/251  Or  221 | PHY 232/252  Or  222 | 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*