

# University of Missouri

## Bachelor of Science in Biology

### Transfer Guide for East Central College

This plan is intended only as a general guide based on requirements in the 2013-2014 University of Missouri undergraduate catalog. You will need to complete a total of 120 hours in order to graduate. It will take roughly 90 to 110 credit hours to fulfill the requirements specific to the degrees offered in Biological Sciences. You may use elective courses to bring your total credit hours to 120.

At least 30 of the hours must be in courses at the 3000-level or higher. (Biology 2200 and 2300 and Chemistry 2100, 2110 and 2130 may be used to meet the 3000-level requirement.)

Check the following web sites for current course descriptions, prerequisites, course equivalencies and other specific details about the Biology major:

- 1) College Catalog (<http://registrar.missouri.edu>)
- 2) Transfer Equivalencies (<http://transfercourses.missouri.edu> or <http://transfer.org>)
- 3) General Education (<http://generaleducation.missouri.edu>)
- 4) Biological Sciences (<http://biology.missouri.edu/undergrad/>)

For more information about the Biological Sciences degree, please contact the Biology Advising Office at (573) 882-4068.

| University of Missouri  |         | East Central College  |
|---|---------|---|
| COURSE  | CREDITS | EQUIVALENT COURSE (CREDITS)   |
| <b>College Algebra (3)</b>  |         |   |
| MATH 1100 College Algebra   | 3       | MT 1403 College Algebra (3)   |
| <b>Mathematical Sciences (5-6)</b>  |         |   |
| <b>Select one option:</b>   |         |   |
| MATH 1400 Calculus for Social/Natural Sciences <b>and</b><br>MATH 2100 Calculus for Social/Natural Sciences I   | 6       | BU 2013/MT 2013 Survey Calculus (3) <b>and</b><br>MATH 2100 at MU   |
| MATH 1500 Analytic Geometry and Calculus I  | 5       | MT 1605 Analy Geom & Calc I (5)   |
| STAT 1400 Elem Stat for Life Sciences <b>and</b><br>CMP SC 1040 Intro to Problem Solving & Programming  | 6       | MT 2103 Statistics (3) <b>and</b><br>EG 2203 C++ Program Engr (3) <b>and</b> EG 2211 C++ Prog/Engin Lab (1) |
| <b>Chemistry (16 credits)</b>   |         |   |
| CHEM 1320 College Chemistry I   | 4       | CH 1305 Gen Chemistry I Lec & Lab (5)   |
| CHEM 1330 College Chemistry II  | 4       | CH 1405 Gen Chemistry II Lec & Lab (5)  |
| CHEM 2100 Organic Chemistry I   | 3       | CH 2305 Organic Chemistry I Lec & Lab (5)   |
| CHEM 2110 Organic Chemistry II  | 3       | CH 2415 Organic Chem II Lec & Lab (5) or<br>CH 2205 Org & Biochem Lec & Lab (5)                             |
| CHEM 2130 Organic Chemistry I Lab   | 2       | CH 2305 Organic Chemistry I Lec & Lab (5)   |
| <b>Physics (8-10 credits)</b>   |         |   |
| <b>Select one option:</b>   |         |   |
| PHYS 1210 College Physics I and Lab <b>and</b><br>PHYS 1220 College Physics II and Lab  | 8       | PH 1703 & PH 1712 College Physics I (5) <b>and</b><br>PH 1803 & PH 1812 College Physics II Lec (5)          |
| PHYS 2750 University Physics I and Lab <b>and</b><br>PHYS 2760 University Physics II and Lab  | 10      | PH 2103 & PH 2112 Gen Physics I (5) <b>and</b><br>PH 2203 & PH 2212 Gen Physics II (5)                      |
| <b>English Exposition and Argumentation (3 credits)</b>   |         |   |
| ENGLSH 1000 Exposition and Argumentation  | 3       | EN 1333 English Comp II (3)   |
| <b>★Behavioral Sciences (5 credits)</b>   |         |   |
| Behavioral Science 1  | 3       | Select <a href="#">behavioral sciences</a> from the general education list.                                 |
| Behavioral Science 2  | 2-3     |   |
| <b>★Social Sciences (9 credits) Courses from at least two different departments.</b>  |         |   |
| State Requirement in Government or History  | 3       | Select <a href="#">state requirement</a> from the general education list.                                   |
| Social Science 2  | 3       | Select <a href="#">social sciences</a> from the general education list.                                     |
| Social Science 3  | 3       |   |
| <b>★Humanities/Fine Arts (12 credits) Courses from at least three different areas.</b>  |         |   |
| Humanity 1  | 3       | Select <a href="#">humanities</a> from the general education list.  |
| Humanity 2  | 3       |   |
| Humanity 3  | 3       |   |
| Humanity 4  | 3       |   |
| <b>Foreign Language (12-13 credits) Must be in the same language.</b><br><i>Requirement is waived if level 4 of single foreign language was completed in high school.</i> |         |   |
| Language 1  | 5       | Select <a href="#">language courses</a> from the general education list.                                    |
| Language 2  | 5       |   |
| Language 3  | 3       |   |
| <b>Upper Level General Education (9 credits) At least 9 credits of behavioral science, social science, or humanities must be at the 2000-level or above.</b>              |         |   |

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|--|------------|---|
| COURSE   | CREDITS    | EQUIVALENT COURSE (CREDITS)   |
| <input checked="" type="checkbox"/> <i>Upper-level general education courses may also count toward other general education requirements (behavioral sciences, social sciences, or humanities).</i>   |            |   |
| ★Upper Level 1   | 3          | Select <a href="#">200-level/2000-level A&amp;S courses</a> from behavioral science, social science, or humanity on the general education list. Level is based upon the community college course number, NOT the MU equivalent. |
| ★Upper Level 2   | 3          |   |
| Upper Level 3  | 3          | Must be taken at MU.  |
| <b>Writing Intensive (2 courses)</b> <i>Must be completed with a C- or better.</i>   |            |   |
| ★Writing Intensive course from anywhere in the curriculum  | 3          | Must be taken at MU unless waived via completion of an AA degree.   |
| Writing Intensive course numbered 3000 or above in biology   | 3          | Must be taken at MU.  |
| <b>Biological Sciences (33 credits)</b> <i>At least 14 credits in Biology must be completed at the 3000-level or higher</i>  |            |   |
| BIO SC 1500 Introduction to Biological Systems   | 5          | BI 1325 Prin of Biology I Lec & Lab (5) <b>and</b><br>BI 1415 Prin of Biology II Lec & Lab (5)  |
| BIO SC 2200 General Genetics   | 4          | BI 2005 Genetics Lec & Lab (5)  |
| BIO SC 2300 Cell Biology   | 4          | BI 2045 Cell Biology Lec & Lab (5)  |
| Evolutionary Biology ( <i>select one course</i> )<br>BIO SC 3400 Evolution and Ecology<br>BIO SC 4600 Evolution  | 3          | None  |
| Biological Diversity ( <i>select one course</i> )<br>BIO SC 2600 Ornithology<br>BIO SC 2700 Ichthyology<br>MICROB 3200 - Medical Microbiology and Immunology<br>BIO SC 3210 Plant Systematics<br>BIO SC 3260 Invertebrate Zoology<br>BIO SC 3510 Biology of Fungi<br>BIO SC 3660 Mammalogy<br>BIO SC 3710 & 3715 Intro Entomology/Insect Diversity   | 3-5        | None  |
| Capstone ( <i>select one course</i> )<br>BIO SC 4950/4952 Undergraduate Research in Biology<br>BIO SC 4976 Molecular Biology<br>BIO SC 4978 Cancer Biology<br>BIO SC 4982 Human Inherited Diseases<br>BIO SC 4983 Molecular Ecology<br>BIO SC 4984 Mammalian Reproductive Biology<br>BIO SC 4986 Neurology of Motor Systems<br>BIO SC 4988 Nerve Cells and Behavior<br>BIO SC 4990 Vertebrate Histology & Microscopic Anat<br>BIO SC 4994 Senior Seminar | 3-5        | None  |
| Biology Electives<br>Bio Elective Credit (Physiology)<br>Bio Elective Credit (Microbiology)<br>Other Bio Elective Credit   | 7-11       | BI 2104 <b>and</b> 2115 Hum Anat & Phys I & II (max credit of 4 hours)<br>BI 2404 Microbiology Lec & Lab (4)  |
| <b>Electives</b>   |            |   |
| Choose electives to reach the total of 120 credits required for graduation.  |            |   |
| <b>Total Hours for BS in Biological Sciences</b>   | <b>120</b> |   |

★Requirement is automatically satisfied upon the completion of an Associate of Arts (AA) degree.

# General Education Courses

## East Central College

| <u>East Central College Course</u>      | <u>MU Equivalent</u> | <u>East Central College Course</u>              | <u>MU Equivalent</u> |
|---|----------------------|---|----------------------|
| <b>Behavioral Sciences</b>              |                      | <b>Social Sciences (◆= State Requirement)</b>   |                      |
| AN 1003 Intro to Cult Anthro (3)        | ANTHRO 2030          | CV 1003 American Civilization (3)               | HIST SSC             |
| AN 1103 Intro Phy Anth & Arch (3)       | ANTHRO BEH           | CV 2103 European Civil I (3)                    | HIST 1500            |
| PY 1103 Gen Psychology (3)              | PSYCH 1000           | CV 2203 European Civil II (3)                   | HIST 1510            |
| PY 2103 Pers & Social Adjust (3)        | PSYCH BEH            | CV 2303 Latin Amer Civil (3)                    | HIST 1850            |
| PY 2203 Child Psychology (3)            | PSYCH 2410           | CV 2613 East Asian Civ to 1800 (3)              | HIST SSC             |
| PY 2213 Abnormal Psychology (3)         | PSYCH 2510           | CV 2623 East Asian Civ Since 1800 (3)           | HIST 1830            |
| PY 2303 Social Psychology (3)           | PSYCH 2310           | EC 2103 Prin of Macroecon (3)                   | ECONOM 1015          |
| PY 2403 Human Development (3)           | PSYCH BEH            | EC 2203 Prin of Microecon (3)                   | ECONOM 1014          |
| PY 2503 Adolescent Psych (3)            | PSYCH BEH            | GE 1003 World Geography (3)                     | GEOG SSC             |
| SO 1103 Gen Sociology (3)               | SOCIO 1000           | ◆HI 1001 US & State Constitution Competency (1) | POL SC SSCST         |
| SO 2103 Human Relations (3)             | SOCIO 3310           | ◆HI 1103 US Hist to 1865 (3)                    | HIST 1100            |
| SO 2203 Marriage & Family (3)           | SOCIO 3420           | ◆HI 1203 US Hist 1865-1945 (3)                  | HIST 1200            |
| <b>Humanities</b>                       |                      | HI 1303 US Hist 1945-Present (3)                | HIST SSC             |
| AR 1203 Art Appreciation I (3)          | ART_GNR1020          | HI 1403 MO & Miss Valley Hist (3)               | HIST SSC             |
| AR 1703 Art History I (3)               | AR_H_A 1110          | HI 2802 Heritage Studies Lec (3)                | HIST SSC             |
| AR 1713 Art History II (3)              | AR_H_A 1120          | HI 2903 World Since 1945 (3)                    | HIST SSC             |
| CT 1033 Intro to Mass Comm (3)          | COMMUN 2100          | ◆PS 1103 Intro Political Sci (3)                | POL_SC 1700          |
| CT 1103 Public Speaking (3)             | COMMUN 1200          | ◆PS 1203 US Govt I: Natl & St (3)               | POL_SC 1100          |
| CT 1303 Theatre Appreciation (3)        | THEATR 1100          | ◆PS 1303 State and Local Government (3)         | POL_SC 2100          |
| CT 1403 Beginning Acting (3)            | THEATR 1400          | PS 2103 Internat Relations (3)                  | POL_SC 1400          |
| CV 2023 Islamic Civilization (3)        | REL_ST 2700          | SO 1203 Amer Social Prob (3)                    | SOCIO 3010           |
| CV 2603 Japanese Civil (3)              | JAPNSE 2320          | <b>Foreign Language</b>                         |                      |
| EN 1413 World Lit I (3)                 | ENGLISH LIT          | AB 1104 Elem Standard Arabic I (4)              | ARABIC 1100A         |
| EN 1423 World Lit II (3)                | ENGLISH LIT          | AB 1204 Elem Standard Arabic II (4)             | ARABIC 1100B         |
| EN 1503 Poetry (3)                      | ENGLISH LIT          | FR 1104 Elem French I (4)                       | FRENCH 1100          |
| EN 1603 Fiction (3)                     | ENGLISH LIT          | FR 1204 Elem French II (4)                      | FRENCH 1200          |
| EN 1613 World Fiction (3)               | ENGLISH LIT          | FR 2104 Interm French I (4)                     | FRENCH 2100          |
| EN 1703 Drama as Lit (3)                | ENGLISH LIT          | GR 1003 Beg German I (3)                        | GERMAN 1100A         |
| EN 1803 Art of the Novel (3)            | ENGLISH LIT          | GR 1103 Elem German I (3)                       | GERMAN 1100A         |
| EN 1813 Fiction into Film (3)           | ENGLISH 2870         | GR 1104 Elem German I (4)                       | GERMAN 1100          |
| EN 1903 Classical Mythology (3)         | CL_HUM 1060          | GR 1203 Elem German II (3)                      | GERMAN 1100B         |
| EN 2033 Lit for Children (3)            | ENGLISH LIT          | GR 1204 Elem German II (4)                      | GERMAN 1200          |
| EN 2103 Survey Brit Lit: Beg 1784 (3)   | ENGLISH 2200         | GR 2113 Interm German I (3)                     | GERMAN 1100B         |
| EN 2113 Sur Brit Lit: Romntcsm-Pr (3)   | ENGLISH 2200         | GR 2114 Interm German I (4)                     | GERMAN 2100          |
| EN 2203 Sur Amer Lit: Colnl-1865 (3)    | ENGLISH 2300         | SP 1104 Elem Spanish I (4)                      | SPAN 1100            |
| EN 2213 Surv Amer Lit: 1865-Pres (3)    | ENGLISH 2300         | SP 1204 Elem Spanish II (4)                     | SPAN 1200            |
| EN 2223 Lit of Mystery (3)              | ENGLISH 2150         | SP 2114 Interm Spanish I (4)                    | SPAN 2100            |
| EN 2303 Latino/a Literature (3)         | ENGLISH 2000         |   |                      |
| EN 2323 Women's Literature              | ENGLISH 2180         |   |                      |
| EN 2403 Lit of Fantasy (3)              | ENGLISH 2150         |   |                      |
| EN 2503 Lit of Sci Fict (3)             | ENGLISH 2150         |   |                      |
| EN 2603 Introduction to Shakespeare (3) | ENGLISH 2160         |   |                      |
| MU 1503 World Music (3)                 | MUSIC_N1313          |   |                      |
| MU 1603 Music Appreciation (3)          | MUSIC_N1310          |   |                      |
| PR 1003 Intro Philosophy (3)            | PHIL 1000            |   |                      |
| PR 1203 Hist of Mod Phil (3)            | PHIL 3200            |   |                      |
| PR 1303 Living World Religions (3)      | REL_ST 2110          |   |                      |
| PR 2103 Cont Ethical Prob (3)           | PHIL 1100            |   |                      |
| PR 2403 Biblical Lit I: Old Test (3)    | REL_ST HUM           |   |                      |
| PR 2503 Bibl Lit II: Old Test (3)       | REL_ST 2500          |   |                      |
| PR 2603 Bibl Lit III: New Test (3)      | REL_ST 2510          |   |                      |