| BY109: Intro to Biodiversity & Evolution BY110: Intro to Cell & Molecular Biology BY211: Physiology with Anatomy I BY212: Physiology with Anatomy II BY223: General Microbiology BY316: Biochemistry and Laboratory BY370: Cell Biology BY3751: Lab Molecular & Cell BY410: Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC" BY495: Senior Seminar  EQUIREMENTS OUTSIDE MAJOR: 30 Credits  Crec  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE1111: General Chemistry CE1112: General Chemistry Lab CE241: Organic Chemistry CE2411: Organic Chemistry CE2411: Organic Chemistry CE2411: Organic Chemistry CE2411: Physics for the Life Sciences PH105: Physics for the Life Sciences PH106: Physics for the Life Sciences   | Bachelor of Science in Biology with a Concentration in Molecular Cell Physiolog  MAJOR REQUIREMENTS/BIOLOGY - MOLECULAR CELL PHYSIOLOGY: 48 Credits |  |         |
|--|---|--|---------|
| BY110: Intro to Cell & Molecular Biology BY211: Physiology with Anatomy I BY212: Physiology with Anatomy II BY223: General Microbiology BY310: Biochemistry and Laboratory BY310: Cell Biology BY375: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC" BY495: Senior Seminar  CQUIREMENTS OUTSIDE MAJOR: 30 Credits  Crec  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE1111: General Chemistry CE1112: General Chemistry CE112: General Chemistry CE112: General Chemistry CE112: General Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry PH105: Physics for the Life Sciences PH1061: Physics for the Life Sciences  |   |  | Credit  |
| BY211: Physiology with Anatomy I BY212: Physiology with Anatomy II BY212: Physiology with Anatomy II BY223: General Microbiology BY310: Biochemistry and Laboratory BY370: Cell Biology BY375: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  Crec  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry Lab CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab PH106L: Physics for the Life Sciences Lab  |   | BY109: Intro to Biodiversity & Evolution                         | 4.0     |
| BY212: Physiology with Anatomy II BY223: General Microbiology BY310: Biochemistry and Laboratory BY370: Cell Biology BY375L: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  GUIREMENTS OUTSIDE MAJOR: 30 Credits  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry CE112L: General Chemistry CE1241L: Organic Chemistry CE241: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab  |   | BY110: Intro to Cell & Molecular Biology                         | 4.0     |
| BY223: General Microbiology BY310: Biochemistry and Laboratory BY370: Cell Biology BY375L: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  CQUIREMENTS OUTSIDE MAJOR: 30 Credits  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry CE112C: General Chemistry CE112C: General Chemistry Lab CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Physics for the Life Sciences PH105: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab  |   | BY211: Physiology with Anatomy I                                 | 4.0     |
| BY310: Biochemistry and Laboratory BY370: Cell Biology BY375L: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry CE112L: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CH105: Physics for the Life Sciences PH105: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences Lab  |   | BY212: Physiology with Anatomy II                                | 4.0     |
| BY370: Cell Biology BY375L: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC" BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry CE112: General Chemistry CE112: General Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab   |   | BY223: General Microbiology                                      | 4.0     |
| BY375L: Lab Molecular & Cell BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE1111: General Chemistry CE111L: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry CE112L: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry CE111L: General Chemistry CE111L: General Chemistry CE111L: General Chemistry CE111L: Organic Chemistry CE111L: Organic Chemistry CE111L: Organic Chemistry CE241L: Organic Chemistry CE111L: General Chemistry CE241L: Organic Chemistry CE111L: General Chemistry CE111 |   | BY310: Biochemistry and Laboratory                               | 4.0     |
| BY410: Molecular Biology BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC" BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA15: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE112L: General Chemistry CE112L: General Chemistry CE112L: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CH105: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab PH106L: Physics for the Life Sciences Lab   |   | BY370: Cell Biology  | 3.0     |
| BY423: Genetics BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC" BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry CE112: General Chemistry CE112: General Chemistry CE112: General Chemistry CE112: General Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry Lab CE242: Organic Chemistry Lab CE242: Organic Chemistry Lab CE241: Physics for the Life Sciences PH1061: Physics for the Life Sciences Lab  |   | BY375L: Lab Molecular & Cell                                     | 3.0     |
| BY425: Principles of Developmental Biology  6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications  CE111: General Chemistry  CE111L: General Chemistry Lab  CE112: General Chemistry Lab  CE112: General Chemistry  CE111L: Organic Chemistry  CE112: Organic Chemistry  PH105: Physics for the Life Sciences  PH106L: Physics for the Life Sciences  PH106L: Physics for the Life Sciences Lab  PH106L: Physics for the Life Sciences Lab   |   | BY410: Molecular Biology   | 3.0     |
| 6 Credits designated with Course*Type: "MC"  BY495: Senior Seminar  MA115: Intro to Mathematics Modeling in the Biological Sciences or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  |   | BY423: Genetics  | 4.0     |
| MA115: Intro to Mathematics Modeling in the Biological Sciences  or MA116: Calculus for the Biological Sciences or MA125: Calculus with Applications CE111: General Chemistry CE111L: General Chemistry CE112L: General Chemistry CE112L: General Chemistry CE112L: General Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE241: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab PH106L: Physics for the Life Sciences Lab  |   | BY425: Principles of Developmental Biology                       | 4.0     |
| MA115: Intro to Mathematics Modeling in the Biological Sciences  or MA116: Calculus for the Biological Sciences  or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications  CE111: General Chemistry  CE111L: General Chemistry Lab  CE112: General Chemistry  CE112L: General Chemistry  CE112L: Organic Chemistry  CE241: Organic Chemistry  CE241: Organic Chemistry  CE241E: Organic Chemistry  CH05: Physics for the Life Sciences  PH105: Physics for the Life Sciences  PH106: Physics for the Life Sciences  PH106L: Physics for the Life Sciences Lab  PH106L: Physics for the Life Sciences Lab   |   | 6 Credits designated with Course*Type: "MC"                      | 6.0     |
| MA115: Intro to Mathematics Modeling in the Biological Sciences  or MA116: Calculus for the Biological Sciences  or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications  CE111: General Chemistry  CE111L: General Chemistry Lab  CE112: General Chemistry  CE112L: General Chemistry Lab  CE241: Organic Chemistry  CE241: Organic Chemistry  CE241L: Organic Chemistry Lab  CE242: Organic Chemistry  PH105: Physics for the Life Sciences  PH105L: Physics for the Life Sciences Lab  PH106: Physics for the Life Sciences Lab  PH106L: Physics for the Life Sciences Lab   |   | BY495: Senior Seminar  | 1.0     |
| or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Crec   | QUIREMENTS OUTSIDE MAJOR  | : 30 Credits   | Credit  |
| or MA116: Calculus for the Biological Sciences or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Crec   |   | MA445. Intro to Mothernotics Modeling in the Diclorical Crispess | 2.0     |
| or MA125: Calculus with Analytic Geometry I  MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry CE112L: General Chemistry CE241: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  PH106L: Physics for the Life Sciences Lab  Crec   | or  | <u> </u>   | 3.0     |
| MA151: Statistics with Applications CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE241L: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab CE2E ELECTIVES: 14 Credits  Crec   |   |  |         |
| CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE242: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab   | OI .  | MA125. Calculus with Analytic Geometry i                         |         |
| CE111: General Chemistry CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab PH106L: Physics for the Life Sciences Lab  |   | MA151: Statistics with Applications                              | 3.0     |
| CE111L: General Chemistry Lab CE112: General Chemistry CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences CE2E ELECTIVES: 14 Credits  |   |  | 3.0     |
| CE112L: General Chemistry Lab CE241: Organic Chemistry CE241L: Organic Chemistry Lab CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences CEEE ELECTIVES: 14 Credits   |   | CE111L: General Chemistry Lab                                    | 1.0     |
| CE241: Organic Chemistry CE241L: Organic Chemistry Lab CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred   |   | CE112: General Chemistry   | 3.0     |
| CE241L: Organic Chemistry Lab CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EEE ELECTIVES: 14 Credits  Cred  |   | CE112L: General Chemistry Lab                                    | 1.0     |
| CE242: Organic Chemistry PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred   |   | CE241: Organic Chemistry   | 3.0     |
| PH105: Physics for the Life Sciences PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred  |   | CE241L: Organic Chemistry Lab                                    | 2.0     |
| PH105L: Physics for the Life Sciences Lab PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred   |   | CE242: Organic Chemistry   | 3.0     |
| PH106: Physics for the Life Sciences PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred   |   | PH105: Physics for the Life Sciences                             | 3.0     |
| PH106L: Physics for the Life Sciences Lab  EE ELECTIVES: 14 Credits  Cred  |   | PH105L: Physics for the Life Sciences Lab                        | 1.0     |
| EE ELECTIVES: 14 Credits Cred  |   | PH106: Physics for the Life Sciences                             | 3.0     |
|  |   | PH106L: Physics for the Life Sciences Lah                        | 1.0     |
|  |   | FITTOOL. Fitysics for the Life Sciences Lab                      |         |
|  | EE ELECTIVES: 14 Credits  | FITTOOL. Fitysics for the Life Sciences Lab                      | Credit  |
|  | EE ELECTIVES: 14 Credits  |  | Credit: |
| <del></del>  | REE ELECTIVES: 14 Credits   |  |         |
|  | REE ELECTIVES: 14 Credits   |  |         |

## Bachelor of Science in Biology with a Concentration in Molecular Cell Physiology **GENERAL EDUCATION REQUIREMENTS: 36 Credits Credits** FY-101: First Year Seminar \*(Select Section "BY") 3.0 First Year Seminar EN101: College Composition I Reading and Writing 3.0 EN102: College Composition II 3.0 Mathematics Fulfilled in Outside Major Requirements with MA115, MA116, MA125, or MA151 0.0 Natural Sciences Fulfilled in Major Requirements with required BY courses 0.0 Literature 3 Credits from courses designated with Course\*Type: LIT 3.0 Aesthetics and Creativity 3 Credits from Art, Music, Theatre, or Dance 3.0 Technological Literacy IT102: Information Technology for Scientists 3.0 Reasoned Oral Discourse Fulfilled in Major Requirements with BY375L and BY495 0.0 Historical Perspective 3 Credits from courses designated with Course\*Type: HS.SV 3.0 Social Science 3 Credits from courses designated with Course\*Type: SS.SV 3.0 Historical Perspective/Social 3 Credits from courses designated with Course\*Type: HS.SV 3.0 Sciences or 3 Credits from courses designated with Course\*Type: SS.SV Interdisciplinary Perspectives 3.0 3 Credits from courses designated with Course\*Type: ISP Cultural Diversity and Global 3 Credits from courses designated with Course\*Type: CD 6.0 Understanding and 3 Credits from courses designated with Course\*Type: GU or 6 Credits from the SAME foreign language or Foreign Language **Experiential Education** One course designated with Course\*Type: EX 0.0 Two courses from Biology (BY) designated with Course\*Type: WT Writing Intensive 0.0 0.0

Minimum Credits for Bachelor of Science in Biology with a Concentration in Molecular Cell Physiology = 128.0

## **NOTES:**

<sup>\* 58</sup> credits must be completed at the 200 level or higher.