

BIOLOGY

Dual Degree Engineering Program Bachelor of Science Degree in DDEP-Biology

Credits: 122

CIP Code: 260101

| Code | Title | Hours |
|---|------------------------------|-----------|
| Required Courses | | |
| Select 32 credits ¹ | | 32 |
| Recommended Biology Electives | | |
| Select 25 credits ² | | 25 |
| Required Cognate Courses for DDEP-Biology Majors | | |
| Chemistry | | |
| CCHE 111 | Gen Chem 1 & Recitation | 4 |
| CCHE 112 | Gen Chem II Lec & Recitation | 4 |
| CCHE 231 | Organic Chemistry | 4 |
| CCHE 232 | Organic Chemistry | 4 |
| Physics | | |
| CPHY 121 | Physics I: Mechanics | 4 |
| CPHY 122 | Physics II: Elec & Magnetism | 4 |
| Total Hours | | 81 |

¹ Includes transfer credits from partner institution. Please refer to Biology catalog entry for listing of major courses required.

² Please refer to Biology catalog entry for listing of electives.

General Education Courses

| Code | Title | Hours |
|--|------------------------------|-------|
| Area A: Humanities/Fine Arts | | |
| Select one of the following: | | 3 |
| CART 150 | Art Appreciation | |
| CHUM 228 | | |
| CHUM 238 | | |
| CMUS 120 | Music Appreciation | |
| CSTA 252 | Theater Appreciation | |
| Area B: Social/Behavioral Sciences | | |
| CPSY 211 | General Psychology | 3 |
| Select one of the following: | | 3 |
| CSCJ 215 | Intro. to Sociology | |
| CSCJ 216 | Intro. to Anthropology | |
| CSCJ 218 | Contemporary Social Problems | |
| Area C: Natural Sciences/Mathematics/Statistics | | |
| CMAT 111 | Calculus I | 4 |
| CMAT 112 | Calculus II | 4 |
| Area D: Communications | | |
| CENG 105 | College Composition I | 3 |
| CENG 106 | College Composition II | 3 |
| CENG 201 | Intro to World Literature I | 3 |
| or CENG 202 | Intro to World Literature II | |
| Area E: Financial/Technological | | |
| CCIS 105 | Programming Principles I | 3 |

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|--------------------|------------------|-----------|
| CBUS 250 | Personal Finance | 3 |
| Total Hours | | 32 |

Other University Requirements

| Code | Title | Hours |
|--------------------|--------------------|----------|
| CGED 100 | First Year Seminar | 1 |
| CGED 101 | 1st-Year Seminar | 1 |
| Total Hours | | 2 |

Free Electives: 6 Credits (includes transfer credits from partner institution)

Note: Free Electives should be chosen in consultation with the advisor, depending on the choice of minor or stackable credentials.

Dual Degree Engineering Program Plan of Study for Bachelor of Science Degree in DDEP-Biology

| Course | Title | Hours |
|------------------------|--|-----------|
| First Year | | |
| First Semester | | |
| CBIO 111 & 111L | General Biology I & Lab and (Area C) | 4 |
| CMAT 111 | Calculus I (Area C) | 4 |
| CENG 105 | College Composition I (Area D) | 3 |
| CGED 100 | First Year Seminar | 1 |
| CCHE 111 & 111L | Gen Chem 1 & Recitation and General Chemistry Lab | 4 |
| Hours | | 16 |
| Second Semester | | |
| CBIO 112 & 112L | General Biology II & Lab and General Biology II Lab | 4 |
| CCHE 112 | Gen Chem II Lec & Recitation | 4 |
| CMAT 112 | Calculus II (Area C) | 4 |
| CENG 106 | College Composition II (Area D) | 3 |
| CGED 101 | 1st-Year Seminar | 1 |
| Hours | | 16 |
| Second Year | | |
| First Semester | | |
| CEGR 101 & 101L | Introduction to Engineering and Intro to Engineering Lab | 3 |
| CMAT 211 | Calculus III | 4 |
| CPHY 121 & 121L | Physics I: Mechanics and Physics I: Mechanics Lab | 4 |
| CHIS 211 or CHIS 212 | History of the United States or History of the United States | 3 |
| CCIS 105 & 105L | Programming Principles I and Programming Principles I Lab | 4 |
| Hours | | 18 |
| Second Semester | | |
| CEGR 110 & 110L | Engineering Graphics and Engineering Graphics Lab | 3 |
| CENG 201 or CENG 202 | Intro to World Literature I (Area D) or Intro to World Literature II | 3 |

| | | |
|--------------------|--|---|
| CPHY 122 & 122L | Physics II: Elec & Magnetism and Physics II:Electricity&Mag.Lab | 4 |
| CMAT 212 | Differential Equations | 3 |
| CCIS 106 & 106L | Programming Principles II and Programming Principles II Lab | 4 |

Hours **17**

Third Year**First Semester**

| | | |
|-----------|------------------------------|---|
| CMAT 214 | Linear Algebra | 3 |
| CBIO 233 | Microbiology | 4 |
| CCHE 231 | Organic Chemistry | 4 |
| CCHE 231L | Organic Chemistry Lab | 0 |
| CCHE 231R | Organic Chemistry Recitation | 0 |
| CPSY 211 | General Psychology | 3 |
| CEGR 211 | Engineering Statics | 3 |

Hours **17**

Second Semester

Select one of the following: 3

| | | |
|-------------------------|--|---|
| CHUM 228 | | |
| CHUM 238 | | |
| CART 150 | Art Appreciation | |
| CMUS 120 | Music Appreciation | |
| CBUS 250 | Personal Finance | 3 |
| CCHE 232 | Organic Chemistry | 4 |
| CCHE 232L | Organic Chemistry Lab | 0 |
| CCHE 232R | Organic Chemistry Recitation | 0 |
| CSCJ 215 or CSCJ 216 | Intro. to Sociology or Intro. to Anthropology | 3 |
| CBIO 312 & 312R | Genetics I and Genetics Recitation | 3 |

Hours **16**

Fourth Year**First Semester****Courses to be Completed at Partner Institution 4th & 5th Year**

Additional hours needed to satisfy degree requirements can be taken (or transfer equivalent) at and transferred from partner institution beyond Junior Year

| | | |
|-------------------------|---|---|
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| CBIO 375 | Cell and Molecular Biology (or transfer equivalent) | 3 |
| CBIO 390 or CBIO 491 | Introductory Biochemistry (or transfer equivalent) or Biochemistry & Recitation | 3 |
| CBIO 480 | Research in Biology (or transfer equivalent) | 3 |

Hours **15**

Second Semester

| | | |
|----------|--|---|
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| CBIO 492 | Biochemistry (or Elective or transfer equivalent) | 3 |

| | | |
|--------------------|----------------------------|---|
| CBIO 341 & 341L | and or transfer equivalent | 4 |
|--------------------|----------------------------|---|

Hours **16**

Fifth Year**First Semester**

| | | |
|----------|---|---|
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| CBIO 478 | Cell Biology Laboratory (or transfer equivalent) | 3 |

Hours **12**

Second Semester

| | | |
|----------|---|---|
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| ENGR XXX | Engineering Course | 3 |
| CBIO 482 | Seminar in Biology (or transfer equivalent) | 1 |

Hours **16**

Total Hours **159**