BIOTECHNOLOGY MINOR

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BIO/CHEM 202</td>
<td>Orientation to Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td>BIO 161</td>
<td>Introduction to Cell and Molecular Biology</td>
<td>4-5</td>
</tr>
<tr>
<td>BOT 121</td>
<td>General Botany</td>
<td></td>
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<tr>
<td>MCRO 221</td>
<td>Microbiology</td>
<td></td>
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<tr>
<td>MCRO 224</td>
<td>General Microbiology I</td>
<td></td>
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<tr>
<td>BIO 303</td>
<td>Survey of Genetics</td>
<td>3-5</td>
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<tr>
<td>BIO 351</td>
<td>Principles of Genetics</td>
<td></td>
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<tr>
<td>CHEM 373</td>
<td>Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Survey of Biochemistry and Biotechnology</td>
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<tr>
<td>CHEM 371</td>
<td>Biochemical Principles</td>
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Laboratory elective- select from the following: 3-5

- ASCI 403: Applied Biotechnology in Animal Science
- BIO/CHEM 475: Molecular Biology Laboratory
- CHEM 474: Protein Techniques Laboratory

Approved Electives

Select from the following: 6-11

- Animal Biotechnology
  - ASCI 403: Applied Biotechnology in Animal Science
  - ASCI 440: Immunology and Diseases of Animals
  - DSCI 330: Artificial Insemination and Embryo Biotechnology

- Bioinformatics
  - BIO/CHEM 441: Bioinformatics Applications
  - CSC 448: Bioinformatics Algorithms

- Cell and Molecular Biology/Microbial Biotechnology
  - BIO 426: Immunology
  - BIO 452: Cell Biology
  - BIO/CHEM 475: Molecular Biology Laboratory
  - BIO 476: Gene Expression Laboratory
  - CHEM 474: Protein Techniques Laboratory
  - CHEM 428: Nutritional Biochemistry
  - MCRO 225: General Microbiology II
  - MCRO 320: Emerging Infectious Diseases
  - MCRO 402: General Virology
  - MCRO 433: Microbial Biotechnology

- Engineering-related Biotechnology
  - BRAE 448: Bioconversion
  - ENGR 581: Biochemical Engineering
  - ENVE 443: Bioremediation Engineering

- Ethics

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<tr>
<td>PHIL 339</td>
<td>Biomedical Ethics</td>
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<tr>
<td>or PHIL 341</td>
<td>Professional Ethics</td>
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Pharmaceutical Biotechnology

- CHEM 377: Chemistry of Drugs and Poisons
- CHEM 477: Biochemical Pharmacology

Plant Biotechnology

- BOT 323: Plant Pathology

Total units 28