**ACADEMIC SUBJECT CERTIFICATE (ASC) – 26 credits**

The ASC in Bio-Resources and Technology (Plant Biotechnology) will prepare students for careers in biotechnology and qualify them to transfer to bachelor of science degree programs. Knowledge in Plant Biotechnology will be an asset in the application of this technology to bioprocessing production systems, assuring a safe food supply and environment.

This certificate consists of 26 credits. See course descriptions for prerequisites.

This is not an official document. Use it to keep track of your academic progress. You are responsible for meeting your program and graduation requirements. Check catalog for course descriptions and course prerequisites. See your academic counselor if you need help.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
<th>GRADE</th>
<th>SEMESTER</th>
<th>YEAR</th>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES – 16 credits</strong></td>
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<tr>
<td>BOT 101</td>
<td>General Botany (4)</td>
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<td>4</td>
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<tr>
<td>BIOL 171/171L</td>
<td>General Biology I and lab (4)</td>
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<tr>
<td>BIOL 171/171L are recommended for students intending to major in General Biotechnology or the Environmental and Microbial Biotechnology at UHM.</td>
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<tr>
<td>BOT 160</td>
<td>Identification of Tropical Plants (3)</td>
<td>OR</td>
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<tr>
<td>BOT 130</td>
<td>Plants in the Hawaiian Environment (4)</td>
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<tr>
<td>BOT 210</td>
<td>Phytobiotechnology (4)</td>
<td>OR</td>
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<tr>
<td>BIOL 275/275L</td>
<td>Cell and Molecular Biology and Lab (4)</td>
<td>OR</td>
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<tr>
<td>BOT 205</td>
<td>Ethnobotanical Pharmacognosy (3)</td>
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<tr>
<td>MICR 130</td>
<td>General Microbiology</td>
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<td>MICR 140</td>
<td>General Microbiology Lab</td>
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<td><strong>ELECTIVE COURSES – 10 credits</strong></td>
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<td><strong>Plant Biotechnology Electives</strong></td>
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<td>AG149</td>
<td>Plant Propagation (3)</td>
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<td>AG 152</td>
<td>Orchid Culture (3)</td>
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<td>BIOL 275</td>
<td>Cell and Molecular Biology (3)</td>
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<td>BIOL 275L</td>
<td>Cell and Molecular Biology Laboratory (1)</td>
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<td>BOT 105</td>
<td>Ethnobotany (3)</td>
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<td>BOT 130</td>
<td>Plants in the Hawaiian Environment (4)</td>
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<td>BOT 199/299</td>
<td>Independent Study or Summer Field Study Abroad (1-4)</td>
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<td>BOT 205</td>
<td>Ethnobotanical Pharmacognosy (4)</td>
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<tr>
<td>CHEM 151+</td>
<td>Elementary Survey of Chemistry (3)</td>
<td>OR</td>
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<td>CHEM 161</td>
<td>General Chemistry I (3)</td>
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<td>CHEM 162</td>
<td>General Chemistry II (3)</td>
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<tr>
<td>CHEM 151L+</td>
<td>Elementary Survey of Chemistry Laboratory (1)</td>
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<tr>
<td>CHEM 161L</td>
<td>General Chemistry I Lab (1)</td>
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<tr>
<td>CHEM 162L</td>
<td>General Chemistry II Lab (1)</td>
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<tr>
<td>CHEM 152</td>
<td>Survey of Organic &amp; BioOrganic Chemistry (3)</td>
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<td>CHEM 152L</td>
<td>Survey of Organic &amp; BioOrganic Chemistry Lab (1)</td>
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<td>FSHN 185</td>
<td>Human Nutrition (3)</td>
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<tr>
<td>GIS 150</td>
<td>Introduction to GIS/GPS (3)</td>
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**Graduation Requirements**

- 2.0 cumulative grade point average.
- Residency requirement: At least 50% of the required courses in the major area (the final credits) must be earned at the College. Under certain circumstances, this requirement may be waived upon request made to the Dean of Student Services.
- Last day for graduation certification is the last day of instruction.