Engineering Technology – BioProcess Operator

**General description:** This career-laddering curriculum provides individuals with the essential skills needed to perform a variety of bioprocess operations tasks in existing and emerging biotechnology manufacturing environments. Course work includes developing the following skills: identifying vehicle and transportation hazards; employing physical and cyber security practices; using fire, rescue and emergency response equipment; operating environmental control equipment; handling potable water, fire water, service/utility water, waste water and cooling water; working with chemicals; maintaining auxiliary equipment; storing materials; operating and repairing steam turbines, heat exchangers, boilers, turbines, engines, separation equipment; reactors, solids handling equipment, steam generation and distribution systems, reaction systems, separation systems, extraction systems, distillation systems, stripping systems, dehydration systems, and filtration systems; employing techniques to optimize system economics; writing procedures; recognizing normal and abnormal system operation; employing strict procedural techniques for system startup and system shutdowns; and working as part of a team. Graduates will be qualified to attain entry-level process operator positions in biotechnology and bioscience production facilities, food processing plants, pharmaceutical process facilities, chemical manufacturing plants, pulp and paper manufacturing plants, and power generation facilities. An AAS degree is not available, but a certificate may be earned in conjunction with a degree in another Engineering Technology specialty. See also Agribusiness and Biofuels.

**Sample of job titles with this degree:** Plant Technician, BioProcess Coordinator, BioProcess Manager, Lab Technician, Sales Technician, Bioproduct Purchaser, Small Business Owner.
<table>
<thead>
<tr>
<th>Engineering Technology – BioProcess Operator Specialty Courses</th>
<th>Credit Hours</th>
<th>BioProcess Operator Cert. 300M</th>
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</thead>
<tbody>
<tr>
<td>DRAFT 103 AutoCAD, Introductory (or ENGT 102)</td>
<td>3</td>
<td>X</td>
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<tr>
<td>ENGT 100 Manufacturing Processes</td>
<td>3</td>
<td>X</td>
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<tr>
<td>ENGT 101 Motor Control Fundamentals</td>
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<tr>
<td>ENGT 103 Fluid Power Fundamentals</td>
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<td>X</td>
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<tr>
<td>ENGT 105 Occupational Safety</td>
<td>3</td>
<td>X</td>
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<tr>
<td>ENGT 111 Motor Control Applications</td>
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<tr>
<td>ENGT 120 Process Control Fundamentals</td>
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<td>X</td>
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<tr>
<td>ENGT 125 BioProcess Operation Fundamentals</td>
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<tr>
<td>ENGT 131 Maintenance Fundamentals</td>
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<tr>
<td>ENGT 160 Metrology and Quality Control</td>
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<tr>
<td>ENGT 210 PLC Fundamentals</td>
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<td>ENGT 220 Process Control Applications</td>
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<tr>
<td>ENGT 225 BioProcess Operation Applications</td>
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<td>X</td>
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<tr>
<td>ENGT 226 BioProcess Operation Systems</td>
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<td>ENGT 231 Piping Fundamentals</td>
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<td>ENGT 234 Pump Applications</td>
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<td><strong>Total Hours</strong></td>
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