

Iowa Lakes Community College
Biotechnology Opportunities and Potential Career Paths

Industry Discussion Forums: Energy (Ethanol/Soy Diesel)
<p>Employment Opportunities <i>emerging employment opportunities within the biotechnology industry with an animal focus were identified as follows:</i></p> <ul style="list-style-type: none"> ▪ By-product marketing manager (<i>bio-diesel, ethanol</i>) ▪ Chemical Extraction Specialist ▪ Dry Distillers Grains (DDG) Animal Nutritionist (<i>also wet by-products, depending on process</i>) ▪ Grain buyer ▪ Logistics manager (<i>scale-house manager, transportation database</i>) ▪ Plant communications specialist ▪ Production-line supervisor ▪ By-product sales (<i>yeast, enzyme, suppliers which drive fermentation processes</i>) ▪ Sales representative ▪ Systems operator ▪ Testing technicians
<p>Specialized skills technicians must possess to successfully gain and maintain employment:</p> <ul style="list-style-type: none"> ▪ Assessment skills (<i>purchase grain</i>) ▪ Computer-aided drafting ▪ Database management ▪ Entrepreneurship – profitability and expanding ancillary by-product use. ▪ Basic electricity and programmable logics control systems. ▪ General agronomy (<i>grain</i>) toxins – plan design and integrations, cross genetics, developing and understand crop specific “uses” focused on corn and soybeans, ability to respond to specialty markets ▪ General safety skills in the areas of rail, containment, tracking and labeling. ▪ Mechanical skills – know equipment and technology and how to operate and maintain ▪ General knowledge of computer networking. ▪ Understand basic principles of HVAC ▪ Understand fermentation process ▪ Understand marketing principles
<p>Courses <i>and potential courses</i> were identified, and the term sequence, in which students would have an opportunity to explore and enhance their mastery of the competencies identified as core:</p> <ul style="list-style-type: none"> ▪ Accounting ▪ Chemistry ▪ Math: geometry, algebra ▪ Science: Chemistry: analytical applications; Microbiology: understanding systems and testing equipment ▪ Intro to Biotech I and II ▪ Biomass Applications ▪ Mechanical Fundamentals and process controls ▪ Industry terminology and safety I & II ▪ Renewable Energy Resource Management ▪ Industrial Equipment and Processes ▪ Quality Control ▪ Plant Design ▪ Permitting and Safety