**YU Program/Major Assessment Template:**

**Mission, Goals, Objectives & Curriculum Map[[1]](#footnote-1)**

**College/School Name:** Katz School

**Department/Program Name:** Biotechnology Management and Entrepreneurship

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**I.          Department/Program Mission Statement**

The mission of the MS in Biotechnology Management and Entrepreneurship program is to prepare and graduate students with professional competencies in the scientific and technological, clinical, regulatory, and business areas that support the management and commercialization of biotechnology products and services that will make them highly competitive in the marketplace.

**II. Department/Program Student Learning Goals**

Upon completion of the MS in Biotechnology Management and Entrepreneurship, students will be able to:

1. Develop a foundational scientific and technical grounding in biotechnology for managing and commercializing biotechnology products and services
2. Explain the foundational and key concepts underlying the science and business of biotechnology
3. Analyze biotechnology case studies using relevant science and business concepts
4. Develop an operational knowledge of the business, legal, regulatory, and ethical aspects of the field for managing and commercializing biotechnology products and services
5. Utilize the knowledge and skills required to work effectively with the various stakeholders across the biotechnology ecosystem
6. Develop critical thinking and problem solving skills
7. Use a variety of effective and efficient communication skills to in the study of the field

**III. Department/Program Student Learning Objectives:**

**Definition:** Statements that describe the specific skills, values, knowledge, and/or attitudes that students should exhibit as a result of the program, and which are reflective of the overarching goal. Learning objectives should be stated so that they are measurable performance indicators of the larger overarching goal.

***Directions:***Complete the following table[[2]](#footnote-2) by listing each department/program goal in the left column. For each Program goal list 2-3 objectives in the right column. Remember that an objective is a specific, measurable, indicator of a learning goal. *Tip: Use the chart (presented on next page) of action words for specific performance indicators of the various cognitive processes in Bloom’s taxonomy if helpful.*

|  |  |
| --- | --- |
| **Department/Program Goal** | **Objectives** |
| 1. Develop a foundational scientific and technical grounding in biotechnology for managing and commercializing biotechnology products and services | 1. Students will be able to appreciate the science behind the growth of biotechnology 2. Students will be able to demonstrate how a product should be managed 3. Students will be able to take a biotechnology product and delineate its commercialization path |
| 2. Explain the foundational and key concepts underlying the science and business of biotechnology | 1. Students will be able to communicate scientific discoveries 2. Students will be able to elucidate the concepts to launch a biotechnology business 3. Students will be able to identify ideas based on scientific merit 4. Students will be able to clearly support ideas based on scientific merit |
| 3. Analyze biotechnology case studies using relevant science and business concepts | 1. Students will be able to apply accurate and relevant scientific concepts to case study analysis 2. Students will be able to apply accurate and relevant business concepts to case study analysis |
| 4. Develop an operational knowledge of the business, legal, regulatory, and ethical aspects of the field for managing and commercializing biotechnology products and services | 1. Students will be able to demonstrate the process by which a product is regulated 2. Students will be able to employ ethical practices to evaluate a scientific discovery 3. Students will be able to illustrate understanding of legal and business issues surrounding biotech products |
| 5. Utilize the knowledge and skills required to work effectively with the various stakeholders across the biotechnology ecosystem | 1. Students will be able to work collaboratively with each other on group projects 2. Students will be able to work with companies to complete specific projects for their capstone course 3. Students will be able to network with biotechnology professionals/guest speakers |
| 1. Develop critical thinking and problem solving skills | 1. Students will be able to analyze case studies to arrive at logical conclusions 2. Students will be able to recommend appropriate solutions based on information provided 3. Students will be able to apply critical thinking and problem solving skills to projects |
| 1. Use a variety of effective and efficient communication skills to in the study of the field | 1. Students will be able to communicate clearly using written media 2. Students will be able to present projects orally in a logical and coherent manner 3. Students will be able to describe concepts in a clear manner both verbally and in writing |

**IV. Curriculum Mapping**

**Definition:** Aligning courses with department and program level goals and objectives

**Directions:** Complete the table[[3]](#footnote-3) below by listing each learning objective/outcome for students in your department/program in the rows in the far left column. List the required courses/experiences in the remaining columns of the first row. Place an X in the cells of each course that targets each objective/outcome. A completed example by a psychology department is provided on the next page.

Levels Curriculum Map

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Learning objectives/outcomes   |  | | --- | |  |  |  | | --- | |  | | Required Courses/Experiences | | | | | |
| **Biotech Foundations** | **Biotech Management** | **IP/Reg** | **Apps of Biotech** | **Pharm product Dev and Commer** | **Capstone** |
| Students will be able to appreciate the science behind the growth of biotechnology | X |  |  | X |  | X |
| Students will be able to demonstrate how a product should be managed |  | X |  |  |  | X |
| Students will be able to take a biotechnology product and delineate its commercialization path |  | X |  |  | X |  |
| Students will be able to communicate scientific discoveries | X | X | X | X |  | X |
| Students will be able to elucidate the concepts to launch a biotechnology business |  | X |  |  |  | X |
| Students will be able to identify and clearly support ideas based on scientific merit | X | X |  | X |  |  |
| Students will be able to apply accurate and relevant scientific concepts to case study analysis | X | X | X | X | X |  |
| Students will be able to apply accurate and relevant business concepts to case study analysis | X | X | X | X | X |  |
| Students will be able to demonstrate the process by which a product is regulated |  |  |  |  |  |  |
| Students will be able to employ ethical practices to evaluate a scientific discovery | X | X | X |  | X |  |
| Students will be able to illustrate understanding of legal and business issues surrounding biotech products | X | X | X |  | X |  |
| Students will be able to work collaboratively with each other on projects | X | X | X | X | X | X |
| Students will be able to work with companies to complete specific projects |  |  |  |  |  | X |
| Students will be able to network with biotechnology professionals/guest speakers | X | X | X | X | X | X |
| Students will be able to review and analyze case studies to arrive at logical conclusions | X | X | X | X | X |  |
| Students will be able to analyze problems and recommend appropriate solutions based on information provided | X | X | X | X | X | X |
| Students will be able to apply critical thinking and problem solving skills to projects | X | X | X | X | X | X |
| Students will be able to communicate clearly using written media | X | X | X | X | X | X |
| Students will be able to present projects orally in a logical and coherent manner | X | X | X | X | X | X |
| Students will be able to describe concepts in a clear manner both verbally and in writing | X | X | X | X | X | X |

1. Some of the content on this form is based on material from the University of Connecticut and University of Massachusetts (Amherst) learning assessment websites. [↑](#footnote-ref-1)
2. Table adapted from the OAPA handbook program based assessment and review, University of Massachusetts (Amherst). Retrieved Nov. 8, 2013 from http://www.umass.edu/oapa/oapa/publications/online\_handbooks/program\_based.pdf [↑](#footnote-ref-2)
3. Table adapted from Curriculum Mapping Template from Lehman College Office of Assessment and Planning. Retrieved Nov. 7., 2013 from http://www.lehman.edu/research/assessment/templates.php [↑](#footnote-ref-3)