### Course Outline

**Units: Technological Foundations in Production**

**Metabolism and Enzymology**

**Microbiology**

- Microbiology of Food and Environment

**Program Outline:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>41305</td>
<td>Biotechnology Engineering</td>
<td>5</td>
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<tr>
<td>41015</td>
<td>Applied Mathematics</td>
<td>4</td>
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<tr>
<td>41025</td>
<td>Numerical Analysis</td>
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<tr>
<td>41035</td>
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<td>3</td>
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<td>Heat Transfer</td>
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</tbody>
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**Prerequisites:**

- Basic Science courses
- Math courses
- Chemistry courses

**Core Courses:**

- Metabolism and Enzymology
- Microbiology of Food and Environment

**Elective Courses:**

- Biotechnology of Microorganisms
- Environmental Science
- Bioinformatics

**Examinations:**

- Oral exams
- Written exams

**Grading System:**

- A-F grades

**Credit System:**

- 3 credits

**Course Description:**

This course provides an overview of the technological foundations in production, focusing on the metabolic and enzymatic processes in food production. It covers the principles of microorganisms and their role in food production, including the microbiology of food and the environment. Students will learn about the biochemical and biophysical processes that underlie these technologies and how they can be applied to improve food production processes.

**Course Objectives:**

- Understand the principles of metabolic and enzymatic processes in food production.
- Learn about the role of microorganisms in food production.
- Master the principles of biotechnology and bioinformatics.

**Course Requirements:**

- Attendance at lectures and seminars.
- Participation in case studies.
- Completion of homework assignments.
- Passage of oral and written exams.

**Course Evaluation:**

- Attendance - 15%
- Homework assignments - 20%
- Case studies - 25%
- Midterm exam - 25%
- Final exam - 25%

**Course Instructor:**

Prof. Dr. J. Smith

**Course Schedule:**

- Lectures: Tuesdays 10:00-12:00, Fridays 14:00-16:00
- Seminars: Thursdays 16:00-18:00

**Course Materials:**

- Textbooks
- Lecture notes
- Online resources

**Course Resources:**

- Library
- Online databases
- Research papers

**Course Assessment:**

- Regular attendance
- Participation in discussions
- Completion of assignments

**Course Conclusion:**

This course provides a comprehensive introduction to the technological foundations in production, focusing on the role of metabolic and enzymatic processes and the principles of microorganisms in food production. Students will gain a deep understanding of the biochemical and biophysical processes that underlie these technologies and how they can be applied to improve food production processes.

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### Program Outline for Spring Semester

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- Written exams

**Grading System:**

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מבוא לפיתוח אב טיפוס

מטבוליזם ואנזימולוגיה