

## SYLLABUS:

<b>Date / Revision</b>	23 May 2015 / 02 May 2017 / PP
<b>Faculty</b>	All Faculty
<b>Study Program</b>	All Study Program

## SUBJECT: Innovation and Product Development

### 1 Basic Information

<b>1.01</b>	<b>Subject Name</b>	<b>Innovation and Product Development</b>
<b>1.02</b>	<b>Semester</b>	5
<b>1.03</b>	<b>Level</b>	1
<b>1.04</b>	<b>SKS</b>	2
<b>1.05</b>	<b>Mandatory / Curriculum</b>	D-02
<b>1.06</b>	<b>Subject Code</b>	PROD
<b>1.07</b>	<b>Subject Code</b>	BME-CHE-FTE- D-LS-117
<b>1.08</b>	<b>Year</b>	2017 (7)
<b>1.09</b>	<b>Quality Control</b>	Final Test, see evaluation
<b>1.10</b>	<b>Limitations</b>	Min 12 and Max 32 students in one class
<b>1.11</b>	<b>Combined with</b>	All Study Programs
<b>1.12</b>	<b>Pre-requisite</b>	None
<b>1.13</b>	<b>Responsible</b>	Dr. Tutun Nugraha
<b>1.14</b>	<b>Revision</b>	15-05-2017/pp

### 2 Description of Subject

This course is given to the 5th semester students in all faculty within the university. The course is intended to introduce students into the way of thinking of how an innovative new product can be developed and various considerations that are attached to it. Students will be given some lectures related to the process of conceptualizing, designing and planning of a new products. Students will also be asked to choose a product form them to develop using knowledge and skills that they have acquired in the previous semesters in accordance to their own interest in the chosen field. By the end of the semester they will be asked to present and explain their project to a panel of lecturers. Students may also attempt to produce the prototype of the product to be presented to the panel members for judgement.

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### Objectives

This course will require students to apply the skills and knowledge that they have acquired before to be implemented in the small project that they have chosen under guidance from a supervisor(s). Furthermore, students will be required to be highly creative as this will be required in the process of conceptualizing, planning and the designing of the new products. Thus, this course will also bring out the entrepreneurial potential within each student.

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### Competency

Through this subject students will understand various concepts relevant to innovation and product development currently used in the food industries, which includes:

- the development of concept, design and planning of a new innovative product and create a business plan that will be applicable to the new product
- Students will also learn about the concept of patenting the new products, and the laws and regulations that are associated with it
- Students will learn through applications with supervision the management and planning of such project from the beginning until the production of a prototype of the product to be presented by the end of the project

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### Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers to build the projects;
- Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing;
- Student Study Effort: homework/assignment; preparation for test/quizzes/ examination.
- Writing assignments/presentations

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### Evaluation

5.1	<b>Absence maximum</b>	25%
5.2	<b>Participation in Discussion</b>	5 Points
5.3	<b>Project</b>	25 Points
5.4	<b>Presentation /Simulation</b>	10 Points
5.5	<b>Daily Quiz</b>	-
5.6	<b>Final Examination</b>	60 Points
	<b>Total</b>	100 Points

**7 Text Book and Reference**

<b>1</b>	<b>Main Text Book:</b> <ul style="list-style-type: none"> <li>J. A. Wesselingh, S. Kill, M.E. viligd; Designand Development of Biological, Chemical, Food and Pharmaceutical Products. Wiley.2007.</li> </ul>
<b>2</b>	<b>Supplement Textbooks:</b> Karl T. Ulrich & Steven D. Eppinger; Product Design and Development, Edition 4th, 2013.

**8 Content / Topics of Lecture**

Week	Content/ Topics of Lecturing	Text Book	Remark
1	<b>The New Wave of Innovation:</b> <ul style="list-style-type: none"> <li>What is innovation</li> <li>The new innovation process</li> <li>Market outlook</li> <li>The new consumer segment</li> </ul>		1 x 2 x 50 minutes
2	<b>Planning:</b> <ul style="list-style-type: none"> <li>Look around</li> <li>Team up</li> <li>Get method</li> <li>Analyse the situation</li> </ul>		1 x 2 x 50 minutes
3	<b>Design:</b> <ul style="list-style-type: none"> <li>Identifying Customer Needs</li> <li>Product Specification</li> </ul>		1 x 2 x 50 minutes
4	<b>Concept Development:</b> <ul style="list-style-type: none"> <li>Concept Generation</li> <li>Concept Selection</li> <li>Concept Testing</li> </ul>		1 x 2 x 50 minutes
5	<b>System Design Level:</b> <ul style="list-style-type: none"> <li>Product Architecture</li> </ul>		1 x 2 x 50 minutes
6	<b>System Design Level:</b> <ul style="list-style-type: none"> <li>Industrial Design</li> <li>Business Plan</li> </ul>		1 x 2 x 50 minutes
8	<b>MIDTERM SEMESTER BREAK</b>		
9	<b>Detail Design:</b> <ul style="list-style-type: none"> <li>Design for Manufacturing</li> <li>Flowsheet the Process</li> <li>Estimate the Cost</li> <li>Equip the Process</li> <li>Scale Up</li> </ul>		1 x 2 x 50 minutes

10	<b>Detail Design:</b> <ul style="list-style-type: none"> <li>• Prototyping</li> <li>• Robust Design</li> </ul>		1 x 2 x 50 minutes
11	<b>Testing and Refinement:</b> <ul style="list-style-type: none"> <li>• Organize the Market</li> <li>• Forecast Money Flows</li> <li>• Learn to Sell</li> <li>• Ethnography Marketing</li> <li>• Global Marketing</li> </ul>		1 x 2 x 50 Minutes
12	<b>Patent and Intellectual Property</b>		1 x 2 x 50 minutes
13	<b>Product Development Economics</b>		1 x 2 x 50 minutes
14	<b>Managing project</b>		1 x 2 x 50 minutes
15	<b>Plan Future Project</b>		1 x 2 x 50 minutes
16	<b>Project</b>		1 x 2 x 50 minutes
17	<b>Final Examination</b>		