

SYLLABUS:

Date / Revision 23 May 2015 / 02 May 2017 / PP
Faculty Life Sciences (LS)
Study Program Food Technology (FTE)

SUBJECT: Sensory Analysis

1 Basic Information

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|-------------|-------------------------------|---|
| 1.01 | Subject Name | Sensory Analysis |
| 1.02 | Semester | 6 |
| 1.03 | Level | 1 |
| 1.04 | SKS | 3 |
| 1.05 | Mandatory / Curriculum | D-02 |
| 1.06 | Subject Code | SEAN |
| 1.07 | Subject Code | CHE-FTE-BMED-LS-117 |
| 1.08 | Year | 2017 (7) |
| 1.09 | Quality Control | Final Test, OFSE, see evaluation |
| 1.10 | Limitations | Min 12 and Max 32 students in one class |
| 1.11 | Combined with | FTE, with CHE and BME as one of possible elective |
| 1.12 | Pre-requisite | Chemistry and lab, Organic Chemistry and lab |
| 1.13 | Responsible | Dr. Tutun Nugraha |
| 1.14 | Revision | 15-05-2017/pp |

2 Description of Subject

In this course, students will be introduced to the field of sensory analysis (or sensory/organoleptic evaluation). Sensory analysis applies the principles of experimental design and statistical analysis to the use of human senses (sight, smell, taste, touch and hearing) for the purposes of evaluating consumer products, particularly of interest here are food and pharmaceutical as well as cosmetics products. Typically, the process requires panels of human assessors, on whom the products are tested, and they are recording the responses made by the panel members. By applying statistical techniques to the results it is possible to make inferences and insights about the products under test. Most large consumer goods companies have departments dedicated to sensory analysis

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Objectives

In this course students are introduced to the subject of sensory analysis which is typically part of every industry that produce consumer goods especially food industry, and also pharmaceutical and cosmetics industries. The test will assist the company to judge the acceptability of the products by the general publics prior to release to the retail market in terms of human sensory acceptability or palatability. This course is one of the required courses taken by Food Technology students, but is also opened to students from other fields such as chemical engineering and Biomedical Engineering. Students will also apply their knowledge of statistics in an applied situation to finally come to a decision/final judgment of the products.

4

Competency

After taking this course students will gain understanding of the following:

- The importance of sensory analysis to the industry for quality control and public acceptance of products
- Methods to apply sensory evaluations including: design of implementation of sensory tests for different products, selection of panel members, the relevant statistical methods to implement the analysis
- How sensory evaluation can assist the industries to ensure that their products are acceptable to the consumer, and the quality of the products can be maintained at a constant level.

5

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

6

Evaluation

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| 5.1 | Absence maximum | 25% |
| 5.2 | Participation in Discussion | - |
| 5.3 | Homework / Classwork | 40 Points |
| 5.4 | Presentation /Simulation | - |
| 5.5 | Daily Quiz | - |
| 5.6 | Final Examination | 60 Points |
| | Total | 100 Points |

7 Text Book and Reference

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|----------|---|
| 1 | Main Text Book: <ul style="list-style-type: none"> Sensory analysis for food and beverage quality control, A practical guide Edited by David Kilcast, CRC Prss, Woodhead Publishing Ltd, Woodhead Publishing ISBN 978-1-84569-476-0 (book), Woodhead Publishing ISBN 978-1-84569-951-2 (e-book), CRC Press ISBN 978-1-4398-3142-7 |
| 2 | Supplement Textbooks: <ul style="list-style-type: none"> The Chemistry of Food, Jan Velisek, 2014, Wiley-blackwell, ISBN: 978-1-118-38381-0 |

8 Content / Topics of Lecture

| Week | Content/ Topics of Lecturing | Text Book | Remark |
|------|---|-----------|--------------------|
| 1 | Designing a sensory quality control program <ul style="list-style-type: none"> Introduction Company culture and commitment to quality Establishing a sensory quality control (QC) program Key elements of a sensory quality control (QC) Overview of approaches used to define sensory targets External support and consultancy | Chapter 1 | 1 x 3 x 50 minutes |
| 2 | Selection and management of staff for sensory quality control <ul style="list-style-type: none"> Personnel required for sensory quality control. Setting up a quality control (QC) panel Maintaining the quality control (QC) panel: <ul style="list-style-type: none"> performance, motivation and size Possible issues Case study: selection and management of staff for sensory quality control of cereal-based ingredients | Chapter 2 | 1 x 3 x 50 minutes |
| 3 | Proficiency testing of sensory panels <ul style="list-style-type: none"> Design and implementation of proficiency testing The Panels Analysis of data/validation of results Panel performance | Chapter 3 | 1 x 3 x 50 minutes |
| 4, 5 | Sensory methods for quality control <ul style="list-style-type: none"> Descriptive specifications (DS) method 'In/out' (or pass/fail) method Difference from control (DFC) method 'A' not 'A' method Paired comparison methods (e.g. 2AFC, n-AFC, simple difference test) Scaling method (including targeted scaling) Ranking test Triangle test Quality scoring/grading/rating method Magnitude estimation and duo-trio methods In-house and do-it-yourself (DIY) methods | Chapter 4 | 2 x 3 x 50 minutes |

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| 6 | Establishing product sensory specifications <ul style="list-style-type: none"> • Rationale using sensory specifications • Defining sensory specifications • Reference samples • Implementation of sensory specifications • Maintenance and follow-up | Chapter 5 | 1 x 2 x 50 minutes |
| 7 | Combining instrumental and sensory methods in food quality control <ul style="list-style-type: none"> • Introduction: the perceptual basis of food quality • The role of instrumental measurement • Sensory analysis of quality • Instrumental measurement of quality factors • Analysis and validation of instrumental measurements • Future trends | Chapter 6 | 1 x 2 x 50 minutes |
| 8 | MIDTERM SEMESTER BREAK | | |
| 9,10,11 | Statistical approaches to sensory quality control <ul style="list-style-type: none"> • Introduction • Statistics defined • Managing risk • Knowing your product • Methods of measurement and practical examples • Practical considerations • Assessor proficiency and validation • Sensory instrumental correlations Product matching | Chapter 7 | 3 x 3 x 50 minutes |
| 12, 13, 14 | Sensory quality control in practice <ul style="list-style-type: none"> • Using sensory techniques for shelf-life assessment • case study: Setting up shelf-life confirmation studies for an ambient product • Other examples, sensory analysis for: <ul style="list-style-type: none"> • Food Ingredients • Sensory quality control in the chilled and frozen ready meal, soup and sauce sectors • Fresh produce • Applied Projects in sensory analysis | Branen, Davidson, Salminen, Thorngate, Chapter 8 - 15 | 3 x 3 x 50 Minutes |
| 15 | Review/Evaluation | | 1 x 2 x 50 minutes |
| 16, 17 | Final Examination | | |