COURSE SYLLABUS AND ASSESSMENT TOOLS
FST441 FUNCTIONAL FOODS

Credit : 3(3-0)
(3 hours lectures and discussion per week for 14 weeks; no laboratory work)

Semester : 7
Academic Year : 2011/2012
Pre-requisite : 1. Characteristics of Food Materials (FST332)
2. Metabolisms of Food Components (FST340)

Number of students : 110
Delivery Method : Lecture, class discussion, assignment, small group discussion, literature search, paper writing process, oral presentation

Course Coordinator : Nurheni Sri Palupi
Contact : 62-251-8626725; 0811116857
Lecturers : 1. Nurheni Sri Palupi (hnpalupi@yahoo.com),
2. Fransiska Rungkat Zakaria (fransiska_z@hotmail.com)

Day and Time : Wednesday, 07.00-09.30 am
Classroom : RK PAU

I. Course Description
This course discusses the efficacy of various foods and beverages to health for both fresh and processed foods. The course discussions include the relationship between food, nutrition and health, functional properties of food components (nutrients and bioactive components) and how to prevent health problems, food and beverage products as functional foods, processing principles and analysis of functional food products, and functional food development technologies including the technology of food fortification and supplementation.

II. General Learning Outcomes
In relation to expected learning outcomes, upon successful completion of this course the student will be able to:
1. understand the source and variability of raw food material and their impact on food processing operations.
2. understand the unit operations required to produce a given food product.
3. be able to apply and incorporate the principles of Food Science in practical, real-world situations and problems.
4. be able to apply the principles of food science to control and assure the quality of food products.
5. be aware of current topics of importance to the food industry.
6. understand government regulations required for the manufacture and sale of food products.
7. be able to describe the biochemistry process, basic concept of human nutrition and the relationship of the consumption of foods to nutritional status and health.
8. be able to evaluate the changes of biological function of food components due to food processing and storage.
9. be able to evaluate the biological functions of foods for health in addition to nutritional values.

This course also contributes to the development student success skills, i.e. oral and written communication skills, problem solving skills, critical thinking skills, professionalism and ethics, team working, literature search ability, and time management.

III. Specific Learning Outcomes

Upon successful completion of this course the student will be able to:
1. describe the physiological role of functional food in the immune, hormones and nerve system (C2, comprehension).
2. correlate the role of non-digestible carbohydrates (dietary fiber, resistant starch, oligosaccharides (NDOS) to health status: prebiotics and probiotics (C4, analysis).
3. correlate the role of amino acids, peptides, and proteins to health status: functional dairy product (C4, analysis).
4. correlate the role of fats and oils to health status, such as sea biota (C4, analysis).
5. determine the phytonutrient component of food to develop functional foods and/or food supplement: the role of non-nutritional antioxidant (polyphenol, isoprenoid, flavonoid, isoflavon, lycopene, etc) (C3, application).
6. determine the phytonutrient component of food to develop functional foods and/or food supplement: the role of nutritional antioxidant (β-carotene, α-tocopherol, etc) (C3, application).
7. determine and use the indigenous resources to develop the functional foods product from local tubers, leaves and fruits (C3, application).
8. determine and use the indigenous resources to develop functional foods product from local cereals and beans (C3, application).
9. determine and implement the safety aspect and regulations to develop functional food products (C3, application).
10. apply the principles of food product development to create functional foods based on local commodities (C3-C6, application-evaluation).
11. apply the regulation of functional food and labelling to create functional foods and fortified food product (C3-C6, application-evaluation).
IV. References

A. Textbooks


B. Teaching Material Support

Lecture notes in form of printed out power point presentations are available for each topic (most presented in English). Additional references will be distributed or highlighted in class to supplement lecture materials. It is recommended that students supplement the lecture notes by reading related textbooks.

V. Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Sub-topics</th>
<th>Lecturers</th>
</tr>
</thead>
</table>
| 1    | The relationship between functional food and health: problem and challenges | • Understanding of functional food  
• Role of functional food in the prevention of cardiovascular disease.  
• Role of functional food in the prevention of cancer.  
• Role of functional food as obesity controller.  
• Role of functional food as immune function controller.  
• Role of functional food as ageing process rate controller | NSP       |
| 2    | Physiological role of functional foods in the body                      | • Physiological role of functional food to innate and adaptive defense system  
• Physiological role of functional food in hormones system  
• Physiological role of functional food in nerves system | NSP       |
| 3    | The role of non-digestible carbohydrates (dietary fibre, resistant starch, oligosaccharides (NDOS) for health: prebiotics, probiotics and synbiotics | • Sources, definition, nutritional values and mechanism of physiological benefit  
• Intestinal microform and health aspect of functional colonic foods  
• Prebiotics as functional ingredient: dietary fiber, resistant starch and oligosaccharides and disease prevention  
• Probiotics as functional ingredient: differences in pathogenicity and protection across gastrointestinal regions  
• Synbiotics | FRZ       |
<table>
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<th>Week</th>
<th>Topics</th>
<th>Sub-topics</th>
<th>Lecturers</th>
</tr>
</thead>
</table>
| 4    | The role of amino acids, peptides, and proteins for health: functional dairy product | • The definition and function of amino acids  
• Milk functional peptide derivates as functional foods ingredients  
• Milk proteins and other modification  
• Nutritional values and biological activities of milk protein and peptides | NSP |
| 5    | The role of fat and oil for health: sea biota. | • Fat classification and nutritional function  
• The effect of fat for health  
• Food products from sea biota  
• The biological activities of fat from sea biota | FRZ |
| 6    | Phytonutrients and antioxidant (the role of non-nutritional antioxidant (polyphenol, isoprenoid, flavonoid, isoflavon, lycopene, etc) in functional foods | • Tocopherols and tocotrienols from oil and cereals grains  
• Isoflavones from soybeans and soy foods  
• Flavonoids from berries and grapes  
• Lycopene from tomatoes  
• Phenolic diterpenes from rosemary and sage  
• Whole grain foods, phytonutrients and health | NSP |
| 7    | Phytonutrient and antioxidant (the role of nutritional antioxidant (β-carotene, α-tocopherol, etc) in functional foods | • The role of vitamin A  
• The role of vitamin E  
• The role of vitamin C  
• Synergism of vitamins and minerals | NSP |
| 8    | Indigenous products as functional foods | • The kinds and benefits of the products  
• Formulation and processing  
• Sensory characteristics  
• Prospects and perspectives | FRZ |
| 9    | Cereals and beans (soybean) as functional foods: the soybean as a source of bioactive molecules | • Human consumption of soy foods  
• Compositions of soybean and soy products  
• Biological activities of soybean and soy product component (nutrient and non-nutrient molecules)  
• Development of soybean as functional foods | FRZ |
| 10   | Food fortification with vitamins and minerals | • The aim of fortifications  
• The kinds of carrier  
• The types of fortificans (vitamin & mineral)  
• Fortification process technology | FRZ |
<table>
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<th>Sub-topics</th>
<th>Lecturers</th>
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</thead>
</table>
| 11   | The technology of functional food products development | • Safety aspects  
• Good manufacturing practice aspects  
• Stability aspects  
• Design of functional foods product development | NSP |
| 12   | The safety and regulations of functional food products | • The group of active substances in functional foods  
• Claims identification  
• Claims evaluation (scientific evaluation)  
• Labelling and advertising | FRZ |
| 13   | Oral presentation: application of the principle of food product development, regulation of functional food and labeling to develop and create the functional and fortified food product | Paper topics: development of functional food product based on indigenous resource (conventional or new functional food product development) | NSP |
| 14   | Oral presentation: application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food products | Paper topics: development of functional food product based on indigenous resource (conventional or new functional food product development) | FRZ |

Note: NSP (Nurheni Sri Palupi); FRZ (Fransiska Rungkat Zakaria)

VI. Potential Course Overlap

There will be some deliberately controlled overlapping topics with other courses, such as the metabolism of plant pigment (carotene, chlorophyll) and phenolic compound in Metabolism of Food Components course (FST340), the chemistry of vitamin and mineral in Food Chemistry course (FST210), and labeling regulation in Food Regulation course (FST302).

VII. Lecture Rules

1. Students must arrive in the classroom on time. Students that arrive later than 15 minutes after the beginning time of course, are not permitted to attend the class and considered absent.
2. The students have to switch off the cellular phone. Communication (receiving or calling of telephone/SMS) is prohibited during class periods.
3. Remember that a minimum 80% of class attendance is compulsory to allow you to take a final examination. Exception will be made for certain justifiable conditions.
VIII. Assessment Tools

A. Midterm Examination

Midterm examination will be held during examination period scheduled by the Register’s office (after 7 week lecture). Each exam is composed of 50 multiple-choice questions (A, B, C, D and E) at different cognitive level. About 20% of questions are presented in English. Time: 90-120 minutes. The exam will cover course topics delivered in week 1-6. A key and score will be posted on announcement board after exam paper is graded.

B. Final Examination

Final examination will be held during examination period scheduled by the Register’s office (after 14 week lecture). Each exam is composed of 50 multiple-choice questions (A, B, C, D and E) at different cognitive level. The exam will cover course topics delivered in week 7-12. A key and score will be posted on announcement board after paper exam is graded.

The examples of written examination at different cognitive levels are as follow:

Example 1 (C1, knowledge)
The Indonesian traditional food is potential to be developed as a functional food if:
A. enough of scientific data about the benefit related to health  
B. rasanya diperbaiki
C. not contaminated by pathogen microorganism
D. enough of scientific data about self life
E. All above answers are false

Example 2 (C2, comprehension)
The potential market of functional foods must consider the consumer’ age. What is the major problem of old people:
A. tiredness
B. arthritis
C. lack of energy
D. all above answers are correct
E. all above answers are false

Example 3 (C3, application)
The development of functional foods is usually correlated with the increase of following gastrointestinal functions:
A. stimulation of GALT activity
B. production of SCFAs
C. controlling the balance of of intestinal microflora
D. all above answers are correct
E. all above answers are false

Example 4 (C5, synthesis)
Phytochemical compounds is known to have a biological activity to increase health status. Do you think that naturally occured phytochemicals in plant can be replaced by
extracted, isolated or purified phytochemicals? (it is assumed that the concentration of phytochemicals in both sources are the same).

C. Group Assignment: Paper and Oral Presentation (C3-C6: application-evaluation)

1. The class will be divided into 18 groups consisting of 6-7 students per group. The members of the groups will be determined by the lecturer.

2. Each group is responsible to search information from internet, textbooks, journals, magazine, etc regarding indigenous food resources rich in bioactive components that are potentially developed as functional foods.

3. Each group is required to write up 15-25 pages of paper regarding the concept or idea to develop a functional food from the selected food resources. The paper must meet the following writing format:
   (1) Cover page: Put a title of your paper on the top of a new page, name and IDs of your group members, and name of course and code.
   (2) Table of contents. Table of contents organized by chapter and sub-chapters contained in the paper, complete with corresponding pages.
   (3) Paper preparation. Paper presentation phases are as follows: (a) determination of topics and titles; (b) preparation of paper outline (after midterm examination; (c) writing up papers; (d) paper submission; and (e) oral presentation (weeks 13 and 14).
   (4) The contents of the paper. The content of the paper consists of introduction, literature review, plan or stage of development of functional food products and closing statement (recommendation or conclusion).
      a. Introduction chapter consists of background and goals.
      b. Literature review chapter include review of the availability of raw materials, excellence, product type, etc.
      c. The functional food development plan chapter consists of: (a) Formulation protocopect (form, technology, benefits/need) which includes the Strategic Plan, Market opportunity (target consumer), Product Definition; and (b) prototype functional food products which includes the selection of optimum formula or process, the product profile (sensory, nutritional composition, self life, functional excellence, etc.), and commercialization (launching, label, marketing plans).
      d. Closing Statement chapter. Closing statement consists of the recommendation or conclusion to paper contents.
   (5) Cited references: List all cited references in alphabetical order by following a journal citation guidelines.

4. Writing format: A4 paper, single space, Times New Roman 12 or Arial 11, paper margin (3 cm top, bottom, right; 4 cm left), soft cover, two copies.

5. The due date of paper submission is at week 12 during course period of the semester. Failure to meet the identified deadline will result in 10% reduction of your score or cancellation of oral presentation.

6. Zero grade will be given to any plagiarism. Plagiarism includes any work copied in whole or in part from another individual’s work.
7. The paper is graded based on the following criteria (maximum score for each criteria: 100): (1) writing format (20%), (2) clarity and accuracy of case study description (25%), (3) identified relevant articles in cited food regulation (25%); (4) recommendation/conclusion (20%), and (5) cited references (10%). Graded paper will be returned as a feedback.

8. The following rubric (modified from rubric developed by Kusnandar 2009) is used as a guideline to grade your paper.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent (90-100)</th>
<th>Strong Case (80-89)</th>
<th>Developing (70-79)</th>
<th>Limited (60-69)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the problem background (25%)</td>
<td>Clear description of the problem background with evidence and accurate and correct data with a clear cited references/information sources, objective of paper is presented clearly, follow the writing format</td>
<td>Clear description of the problem background but fail to show the source of information, objective of paper is clear enough, follow the writing format</td>
<td>Description of the problem background is clear but no cited references, no objective statement, follow writing format</td>
<td>Problem background description is not presented clearly, data pre-sented is not accurate/ misleading, no citation from acceptable references, no objective statement, does not obey writing format</td>
</tr>
<tr>
<td>Identification of articles cited (25%)</td>
<td>Cited articles are relevant to the problem background, various functional food article are referred, correct and clear interpretation of the articles to the problem.</td>
<td>Relevant articles are taken from few cited functional food article, interpretation of the articles is clear enough.</td>
<td>Relevant cited articles are taken as it is, no interpretation to the articles.</td>
<td>Cited articles are not relevant to the problem, incorrect or no interpretation of the articles</td>
</tr>
<tr>
<td>Closing Statement (recommendation or conclusion) (20%)</td>
<td>Draws a conclusion/recommendation that is supported by the data and gives strong supporting evidence for the conclusion/recommendation.</td>
<td>Statement draws a conclusion/recommendation that is supported by the data and gives some evidence for the conclusion.</td>
<td>Statement draws a conclusion but fails to show any evidence/data.</td>
<td>No conclusion/recommendation or the statement does not reflect the paper content</td>
</tr>
<tr>
<td>Cited references (10%)</td>
<td>Used many and varied references; presented by following a journal citation</td>
<td>Used few references; presented by following a journal citation.</td>
<td>Used inadequate number of sources; seldom.</td>
<td>No references cited in the paper or cited references are</td>
</tr>
</tbody>
</table>
9. Each group must present the paper orally in front of class in order that other students can learn from the presenter group and give a necessary comment or questions. Each group will present for 10 minutes, followed by discussion for 10 minutes. The order of the group presenters will be determined randomly.

10. Oral presentation will be graded according to the following criteria (maximum score: 100): (1) clarity and accuracy of information delivered during oral presentation (40%); (2) ability to answer the questions during discussion session (40%); and (3) presentation technique (20%). The following rubric (modified from rubric developed by Kusnandar 2009) is used as a guideline to grade your oral presentation.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent (90-100)</th>
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<th>Limited (60-69)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity and accuracy of information delivered during oral presentation</td>
<td>Information of the paper is delivered clearly, strong background and relevant cited references, strong explanation or discussion, clear and correct conclusion/recommendation</td>
<td>Information of the paper is clear, but not enough background or sufficient cited references, no explanation or interpretation, clear conclusion/recommendation</td>
<td>Information of the paper is not clear enough, no interpretation or discussion of the case, some information is not accurate, quit clear conclusion/recommendation</td>
<td>Information of the paper is not clear, a lot of missing or not accurate information, inaccurate citation of regulation, source of information is not clear, no clear or irrelevant conclusion or recommendation</td>
</tr>
<tr>
<td>Criteria</td>
<td>Excellent (90-100)</td>
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<tr>
<td>Ability to answer the questions during discussion session</td>
<td>Clear and correct explanation with strong argument with the support of relevant cited regulations</td>
<td>Clear and correct explanation but not supported by strong argument or relevant cited regulations</td>
<td>Clear explanation, some information is missing, incorrect or irrelevant, fail to answer with strong argument or support of cited regulations</td>
<td>Unclear explanation, fail to answer the questions, comment is not taken seriously</td>
</tr>
<tr>
<td>Technique and materials of presentation</td>
<td>Power point presentation is very clear, very well structured, free of word error, excellent appearance</td>
<td>Power point presentation is clear enough, some word error is found</td>
<td>Power point presentation is just enough, not structured, word error is frequently found</td>
<td>Power point presentation is not clear, a lot of word error is found, not well prepare</td>
</tr>
</tbody>
</table>

**IX. Grading Scale and Classification**

Composition of grading and classification are as follows:

<table>
<thead>
<tr>
<th>Assessment Tools</th>
<th>% of Grade</th>
<th>Maximum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>One midterm written examination</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>One final written examination</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Paper (Group)</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>Oral presentation (Group)</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Final grade classification:
A (≥80); AB (75-79); B (70-74); BC (65-69); C (55-64); D (45-54); E (<45).
### Assessment Tools to Measure the Achievement of Learning Outcomes in Functional Foods Course (FST 441)

<table>
<thead>
<tr>
<th>Code</th>
<th>Learning Outcomes</th>
<th>Course Content Covered</th>
<th>Cognitive Levels</th>
<th>Assessment Tools</th>
</tr>
</thead>
</table>
| III.A.1 | understand the source and variability of raw food material and their impact on food processing operations (cover in some extent) | • Sources, definition, nutritional values and physiological mechanism of non-digestible carbohydrate  
• Development of functional food product based on indigenous resources (paper presentation task) | C1-C3 | • Written examination (middle/final examination).  
• Paper assignment and oral presentation. |
| III.C.3 | understand the unit operations required to produce a given food product (cover in some extent) | • Design of functional product development  
• Good Manufacturing Practice aspect for functional food product development  
• Fortification process technology  
• Development of functional food product based on indigenous resources (paper presentation task) | C1-C3 | • Written examination (middle/final examination).  
• Paper assignment and oral presentation. |
| IV.A.1 | be able to apply and incorporate the principles of Food Science in practical, real-world situations and problems (cover in detail) | • Prospects and perspectives of indigenous resources as functional food  
• Food supplement developing, trading and research challenges  
• The aim of fortifications  
• Development of functional food product based on indigenous resources (paper presentation task) | C1-C2 | • Written examination (middle/final examination).  
• Paper assignment and oral presentation. |
<table>
<thead>
<tr>
<th>Code</th>
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<th>Course Content Covered</th>
<th>Cognitive Levels</th>
<th>Assessment Tools</th>
</tr>
</thead>
</table>
| IV.D.1 | be able to apply the principles of food science to control and assure the quality of food products (cover in some extent) | • Formulation and processing  
• Development of Soy-bean as Functional Foods  
• Food supplement formulas and processes  
• Sensory Characteristics and Specific Examples of food supplement  
• Development of functional food product based on indigenous resources (paper presentation task) | C1-C5            | • Written examination (middle/final examination).  
• Paper assignment and oral presentation. |
| IV.F.1 | be aware of current topics of importance to the food industry (cover in detail)     | • Safety aspect of functional food  
• Design of new functional food product development  
• Prospects and perspectives of indigenous resources to develop as functional food product.  
• Food supplement developing, trading and research challenges | C1-C3            | • Written examination (middle/final examination). |
| IV.G.1 | understand government regulations required for the manufacture and sale of food products (cover in detail) | • Claims identification of active substance in functional food  
• Scientific claim evaluation functional food developed  
• Labeling and advertising of functional food product  
• Development of functional food product based on indigenous resources (paper presentation task) | C1-C3            | • Written examination (middle/final examination).  
• Paper assignment and oral presentation. |
<table>
<thead>
<tr>
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<th>Course Content Covered</th>
<th>Cognitive Levels</th>
<th>Assessment Tools</th>
</tr>
</thead>
</table>
| V.A.1| be able to describe the biochemistry process, basic concept of human nutrition and the relationship of the consumption of foods to nutritional status and health (cover in some extent) | • Physiological benefit of non-digestive carbohydrates  
• Nutritional value of milk protein  
• Biological activities of milk protein and peptide derivates  
• The biological activities of fat from sea biota  
• Tocopherols and tocotrienols from oil and cereals grains  
• Isoflavones from Soybeans and Soy Foods  
• Flavonoids from berries and grapes  
• Lycopene from Tomatoes  
• Phenolic diterpenes from rosemary and Sage  
• Whole grain foods, phytoneutrients and health  
• The role of vitamin A, E, C  
• The aims of food fortification with vitamins and minerals | C1-C3 | Written examination (middle/final examination). |
| V.A.2| be able to evaluate the changes of biological function of food components due to food processing and storage (cover in some extent) | • Role of functional food in the prevention of cardiovascular and cancer disease; and obesity, immune function and ageing process rate controller.  
• Physiological role in immune, hormones and nerves system | C1-C3 | Written examination (middle/final examination). |
| V.A.3| be able to evaluate the biological functions of foods for health in addition to nutritional values (cover in detail) | • Sources, metabolisms and nutritional values  
• Milk proteins nutritional values  
• The biological activities of fat from sea biota | C1-C3 | Written examination (middle/final examination). |
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<tbody>
<tr>
<td>VI.A.1</td>
<td>demonstrate the use of oral and written communication skills (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.B.1</td>
<td>define a problem, identify potential causes and possible solutions, and make thoughtful recommendations (cover in some extent)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.B.2</td>
<td>apply critical thinking skills to new situations (cover in some extent)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.C.1</td>
<td>commit to the highest standards of professional integrity and ethical values (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.C.2</td>
<td>work and/or interact with individuals from diverse cultures (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.D.1</td>
<td>explain the skills necessary to continually educate oneself (cover in some extent)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.E.1</td>
<td>work effectively with others (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.E.2</td>
<td>provide leadership in a variety of situations</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
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<tr>
<td>VI.E3.</td>
<td>deal with individual and/or group conflict (cover in some extent)</td>
<td>labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
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</tr>
<tr>
<td>VI.F.1.</td>
<td>independently research scientific and nonscientific information (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.F.2.</td>
<td>competently use library resources (cover in detail)</td>
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<tr>
<td>VI.G.1.</td>
<td>manage time effectively (cover in detail)</td>
<td>Application of the principle of food product development, regulation of functional food and labelling to develop and create the functional and fortified food product (Paper Presentation)</td>
<td>C1-C5</td>
<td>Paper assignment and oral presentation.</td>
</tr>
<tr>
<td>VI.G.2.</td>
<td>facilitate group projects (cover in detail)</td>
<td></td>
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<tr>
<td>VI.G.3.</td>
<td>handle multiple tasks and pressures (cover in some extent)</td>
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</table>