



PANDUAN PROGRAM PENGAJIAN PRASISWAZAH

Undergraduate Studies Programme Guide

Bachelor Sains Operasi Pembuatan Makanan dengan Kepujian
Bachelor of Science in Food Manufacturing Operations with Honours

SESI AKADEMIK

Academic Session

2022/2023

FAKULTI SAINS DAN TEKNOLOGI MAKANAN

Faculty of Food Science
and Technology

FAKULTI SAINS DAN TEKNOLOGI MAKANAN

Maklumat Am

Ditubuhkan dalam tahun 1982, Fakulti Sains dan Teknologi Makanan merupakan Fakulti yang aktif dan mempunyai reputasi tinggi sebagai sebuah Fakulti yang terbaik di Universiti Putra Malaysia. Fakulti ini mempamerkan dasar visi penubuhan Universiti untuk memenuhi keperluan negara dalam bidang sains, teknologi, pembuatan, pengurusan, pemasaran dan khidmat makanan melalui pengajaran, penyelidikan, dan perkhidmatan profesional. Visi ini telah direalisasikan secara sistematik oleh kakitangan akademik dan sokongan Fakulti yang sangat komited dan sentiasa berkongsi pendapat dengan saintis di institusi akademik dan penyelidikan, industri dan pelanggan.

Tiga tunjang utama Fakulti adalah Jabatan Sains Makanan, Jabatan Teknologi Makanan, dan Jabatan Pengurusan dan Khidmat Makanan. Ketiga-tiga Jabatan mengamalkan kesepaduan persekitaran kerja yang interaktif di mana pendekatan sinergetik digunakan dalam menyumbang kepada kecemerlangan Fakulti Sains dan Teknologi Makanan.

Terdapat empat program yang ditawarkan oleh Fakulti iaitu Bachelor Sains dan Teknologi Makanan dengan Kepujian, Bachelor Sains Pengajian Makanan dengan Kepujian, Bachelor Sains Pengurusan Perkhidmatan Makanan dengan Kepujian dan Bachelor Sains Operasi Pembuatan Makanan dengan Kepujian. Program Bachelor Sains dan Teknologi Makanan dengan Kepujian menekankan latihan keseluruhan dalam bidang sains dan teknologi makanan yang merangkumi kimia, mikrobiologi, pemprosesan dan kejuruteraan makanan. Manakala program Bachelor Sains Pengajian Makanan dengan Kepujian merupakan kurikulum komprehensif yang bakal menghasilkan graduan terlatih dan profesional dalam bidang pemprosesan, pengeluaran, pengurusan dan pemasaran makanan. Program Bachelor Sains Pengurusan Perkhidmatan Makanan dengan Kepujian pula di wujudkan bagi melahirkan graduan profesional yang menyeluruh meliputi aspek sains makanan, kulinari dan gastronomi, layanan, pengurusan dan keusahawanan serta berupaya menjalankan penyelidikan dan pembangunan dalam bidang perkhidmatan makanan. Manakala Program Bachelor Sains Operasi Pembuatan Makanan dengan Kepujian yang ditawarkan bakal melahirkan profesional yang berpengetahuan dan berkemahiran teknikal dalam bidang operasi pembuatan makanan serta berkebolehan menyelesaikan masalah bidang operasi pembuatan makanan secara inovatif, kreatif dan beretika yang mampu berkomunikasi dan menunjukkan keupayaan pengendalian operasi pembuatan makanan serta mempunyai ciri keusahawanan dalam bidang yang diceburi dan juga mampu menjalankan penyelidikan dan pembangunan dalam bidang operasi pembuatan makanan.

FACULTY OF FOOD SCIENCE AND TECHNOLOGY

General Information

Established in 1982, the Faculty of Food Science and Technology is an active faculty which is highly regarded as one of the best faculties at Universiti Putra Malaysia. The faculty depicts the foundations of the vision for the establishment of the university to fulfill the nation's needs in the field of food science, technology, manufacturing, management, marketing and service through teaching, research, and professional services. This vision has been systematically realized by academic and supporting faculty staff who are highly committed and frequently share ideas with scientists at academic and research institutions, industries, and clients.

The three main pillars of the faculty are the Department of Food Science, Department of Food Technology and the Department of Food Service and Management. All three departments have an integrated interactive working environment whereby a synergetic approach is adopted to contribute to excellence in the Faculty of Science and Technology.

The faculty offers four programs i.e. Bachelor of Food Science and Technology with Honours, Bachelor of Science in Food Studies with Honours, Bachelor of Science in Food Service Management with Honours and Bachelor of Science in Food Manufacturing Operations with Honours. The Bachelor of Food Science and Technology with Honours program emphasizes on overall training in the field of food

science and technology which include food chemistry, microbiology, processing, and engineering. Meanwhile, the Bachelor of Science in Food Studies with Honours program has a comprehensive curriculum designed to produce well-trained and professional graduates in the field of food processing, production, management, and marketing. The Bachelor of Science in Food Service Management with Honours program was established to produce wholesome professional graduates covering aspects of food science, culinary and gastronomy, service, management, and entrepreneurship and can conduct research and development in the field of food service management. The Bachelor of Food Manufacturing Operations with Honours program, on the other hand, will produce professionals who are knowledgeable and technically skilled in the field of food manufacturing operations as well as able to solve problems in the field of food manufacturing operations in an innovative, creative and ethical manner, and can communicate and demonstrate the ability to handle food manufacturing operations and entrepreneurship in the field ventured and are also able to conduct research and development in the field of food manufacturing operations.

Pengurusan Fakulti/ Faculty Management

Dekan/ Dean

Prof. Madya Dr. Anis Shobirin Meor Hussin

Timbalan Dekan (Akademik dan Hal Ehwal Pelajar)

Deputy Dean (Academic and Student Affairs)

Prof. Madya Dr. Radhiah binti Shukri

Timbalan Dekan (Siswazah, Penyelidikan dan Inovasi)

Deputy Dean (Postgraduate, Research, and Innovation)

Prof. Madya Dr. Rabiha binti Sulaiman

Timbalan Dekan (Pembangunan dan Jaringan)

Deputy Dean (Development and Networking)

Prof. Madya Dr. Maimunah Sanny

Ketua Jabatan Sains Makanan

Head, Department of Food Science

Dr. Rashidah Sukor

Ketua Jabatan Teknologi Makanan

Head, Department of Food Technology

Prof. Madya Dr. Chong Gun Hean

Ketua Jabatan Pengurusan dan Khidmat Makanan

Head, Department of Food Service and Management

Dr. Ungku Fatimah Ungku Zainal Abidin

Ketua Penolong Pendaftar

Head Assistant Registrar

Pn. Rozi Tamin

Program Prasiswazah yang ditawarkan/Undergraduate Programs being offered:

Bachelor/Bachelor

1. Bacelor Sains dan Teknologi Makanan dengan Kepujian / *Bachelor of Food Science and Technology with Honours*
2. Bacelor Sains Pengajian Makanan dengan Kepujian / *Bachelor of Science in Food Studies with Honours*
3. Bacelor Sains Pengurusan Perkhidmatan Makanan dengan Kepujian / *Bachelor of Science in Food Service Management with Honours*
4. *Bachelor Sains Operasi Pembuatan Makanan dengan Kepujian / Bachelor of Science in Food Manufacturing Operations with Honours*

MAKLUMAT DAN SKEMA PENGAJIAN PAKEJ ELEx UNTUK PROGRAM 4 TAHUN/

INFORMATION AND STUDY SCHEME ELEX PACKAGE FOR 4 YEAR PROGRAM

**(Berkuatkuasa Untuk Ambilan Oktober 2021 Dan Seterusnya/
Effective For intake October 2021 onwards)**

ELEX Requirements for Graduation

The required number of LPE courses, CEL courses and LAX points to be fulfilled is based on MUET Bands as shown in the table below:

| CEFR Tahap | MUET Tahap | TOEFL/IELTS Skor | CIEP Tahap | Pearson Test of English (PTE) Academic Skor | Cambridge English Skor | Keperluan Bergraduat |
|------------|------------|---------------------------------------|------------|---|------------------------|--|
| C1 – C2 | 5.0 – 5+ | TOEFL iBT 95 – 120 IELTS 7.0 – 9.0 | - | 76 - 90 | 180 – 230 | 2 LPE + 1 CEL + 24 mata LAX <u>atau</u> 1 LPE + 1 CEL + 24 mata LAX + 1 Bahasa global |
| B1 – B2 | 3.0 – 4.5 | TOEFL iBT 42 – 94 IELTS 4.0 – 6.5 | 104 – 109 | 43 – 75 | 140 – 179 | 2 LPE + 2 CEL + 24 mata LAX |
| A1-A2 | 1.0 - 2.5 | TOEFL iBT N/A IELTS 2.5 – 3.5 | 101 – 103 | 24 – 42 | 100 – 139 | 3 LPE + 3 CEL + 24 mata LAX |

ELEX Scheme

Students **must** enroll in LPE, CEL and LAX each semester as specified in the ELEX Scheme.

The following table shows the ELEX Scheme for each semester according to MUET Bands

| Semester | SKEMA UNTUK PROGRAM 4 TAHUN | | |
|----------|--|---|---|
| | MUET 1.0 – 2.5 IELTS 2.5 – 3.5 CIEP 101 – 103 PTE 30 – 42 CE 120 – 139 | MUET 3.0 – 4.5 TOEFL iBT 42 – 94 IELTS 4.0 – 6.5 CIEP 104 – 109 PTE 43 – 75 CE 140 – 179 | MUET 5.0 – 5+ TOEFL iBT 95 – 120 IELTS 7.0 – 9.0 PTE 76 – 90 CE 180 – 230 |
| 1 | LAX 12 mata | LAX 6 mata | LAX 6 mata |
| 2 | CEL2102 LAX 6 mata | LPE2403 | Pilih SATU: CEL 2103/2104 |
| 3 | LPE2302 | LPE2503 | Pilih SATU: LPE2303/LPE2504/ Bahasa global |
| 4 | LPE2403 | LAX 6 mata | LAX 6 mata |
| 5 | LPE2503 | Pilih SATU: CEL 2105/2106/2107 | Pilih SATU: LPE2303/LPE2504/ |

| | | | Bahasa global |
|---|--------------------------------------|--------------------------------------|---------------|
| 6 | Pilih SATU: CEL 2105/2106/2107 | Pilih SATU: CEL 2105/2106/2107 | LAX 6 mata |
| 7 | Pilih SATU: CEL 2105/2106/2107 | LAX 6 mata | LAX 6 mata |
| 8 | LAX 6 mata | LAX 6 mata | - |

Note:

Students must follow the scheme of study provided based on MUET (or equivalent) every semester.

- Students MUET Band 5 and 6 have the option of taking either one or two LPE courses. Students who choose one LPE course, must also take a course in global language.
- Students who are on Industrial Training in a specific semester, do not need to register for English Language course or English Language skills activities for that semester but have to register and attend the course or activity in the preceding or prospective semester (subject to pre-requisite courses).

Information for ELEX (English Language Experience) package

I. LPE courses [credit (2+1)]

- LPE2302 (Reading for Academic Purposes)
- LPE2403 (Academic Interaction and Presentation)
- LPE2503 (Academic Writing)
- LPE2303 - **ONLY** for MUET Band 5 & 6
- LPE2504 - **ONLY** for MUET Band 5 & 6

Note: Students who failed the BBI course, must repeat the course until they pass before taking the next course.

II. CEL courses

- CEL2102 (Effective Listening and Speaking)
- CEL2103 (Writing Academic Texts)
- CEL2105 (Spoken Communication for the Workplace)
- CEL2106 (Communication for Professional Development)
- CEL2107 (Written Business Communication)

Note: Students who obtained Level 1 for CEL course, must repeat the course until pass (Level 2 and above).

III. LAX

- LAX (6 points or 12 points); 1 point = 2 hours per week
- 6 points LAX = 6 weeks x 2 hours per week
- 12 points LAX = 12 weeks x 2 hours per week
- LAX activities offered each semester will be announced by CALC (Centre for the Advancement of Language Competence)

Note: Students who obtained TM (Not Satisfactory), must take the same or different LAX activities to replace the failed activity points (TM). Students must ensure that the required number of LAX points is fulfilled before graduation.

Note:

Students must follow the prescribed scheme of study based on their MUET results (or equivalent) every semester.

- MUET Band 5 and 6 students can choose to enrol in either one or two BBI courses. If they choose to do one BBI course, they must also enrol in one global language.
- Students who are away on Industrial Training in any semester do not have to enrol in any course or LAX activity for that particular semester. However, they must enrol in a course or LAX activity in the prior or subsequent semester (subject to course pre-requisites).

ELEx Package Information

I. BBI Courses [(2+1) credits]

- LPE2302 (Reading for Academic Purposes)
- LPE2403 (Academic Interaction and Presentation)
- LPE2503 (Academic Writing)
 - BBI2425 – for MUET Band 5 & 6 students only
 - BBI2426 – for MUET Band 5 & 6 students only

Note: If students fail in a BBI course, they must repeat and pass the course before they can enrol in a subsequent BBI course.

II. CEL Courses

- CEL2102 (Effective Listening and Speaking)
- CEL2103 (Writing Academic Texts)
- CEL2105 (Spoken Communication for the Workplace)
- CEL2106 (Communication for Professional Development)
- CEL2107 (Written Business Communication)

Note: If students obtain LEVEL 1, they must repeat and pass the course (LEVEL 2 and above).

III. LAX

- LAX (6 points or 12 points); 1 point = 2 hours per week
- 6-point LAX = 6 weeks x 2 hours per week
- 12-point LAX = 12 weeks x 2 hours per week

Note: If students obtain TM (*Tidak Memuaskan/Unsatisfactory*), they must enrol in the same or different LAX activity to replace the failed points. Students must ensure that they fulfil the required number of LAX points for graduation.

IV. Pre-requisites for courses

- LPE2302: MUET Band 1 – 2/equivalent
- LPE2403: CEL 2102 Level 2 or MUET Band 3 – 4/equivalent
- LPE2503: Passed LPE2403
- CEL2103: Passed LPE2503 or MUET Band 5 – 6/equivalent
- CEL2102, 2105, 2106, 2107: No pre-requisite required

**Bachelor Sains Operasi
Pembuatan Makanan dengan
Kepujian**

***Bachelor of Science in Food
Manufacturing Operations with
Honours***

STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

| | | |
|---------------------------------|---|---|
| Nama Program | : | Bachelor Sains Operasi Pembuatan Makanan dengan Keahlian/ Bachelor of Science in Food Manufacturing Operations with Honours |
| Jumlah Kredit Bergraduat | : | 131 Jam Kredit/ Credit Hours |
| Tempoh Pengajian | : | 8 Semester/ Semesters (4 Tahun/ Years) |
| Matlamat Program | : | <ol style="list-style-type: none"> 1. Melahirkan profesional yang berpengetahuan dan berkemahiran teknikal dalam bidang operasi pembuatan makanan serta berkebolehan menyelesaikan masalah bidang operasi pembuatan makanan secara inovatif, kreatif dan beretika. 2. Melahirkan profesional yang mampu berkomunikasi dan menunjukkan keupayaan pengendalian operasi pembuatan makanan serta mempunyai ciri keusahawanan dalam bidang yang diceburi. 3. Melahirkan profesional yang mampu menjalankan penyelidikan dan pembangunan dalam bidang operasi pembuatan makanan. |

Ringkasan Hasil Pembelajaran Program

| Program | Pengetahuan dan Kefahaman | Kemahiran Praktikal | Kemahiran Kognitif | Kemahiran Komunikasi | Kemahiran Interpersonal | Etika dan Profesionalisme | Kemahiran Digital | Kemahiran Personal dan Keusahawanan | Kemahiran Kepimpinan, Autonomi dan Tanggungjawab | Kemahiran Numerasi |
|--|---------------------------|---------------------|--------------------|----------------------|-------------------------|---------------------------|-------------------|-------------------------------------|--|--------------------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
| Bachelor Sains Operasi Pembuatan Makanan | 36 | 22 | 24 | 12 | 13 | 17 | 9 | 7 | 4 | 4 |

1. Kursus Universiti/ University Courses (25 Kredit/ 25 Credits)

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T | PRASYARAT/ PREREQUISITE | (√) Jika lulus/ if passed |
|-------------------------|---|----|---|-----|------------------------------|---------------------------|
| LPE2403 | Interaksi dan Pembentangan Akademik/ <i>Academic Interaction and Presentation</i> | 3 | 3 | 0 | LPE2302 atau MUET Band 3 & 4 | |
| LPE2503 | Penulisan Akademik / <i>Academic Writing</i> | 3 | 3 | 0 | LPE2403 | |
| FCE3204 | Kemahiran Berfikir / <i>Thinking Skills</i> | 2 | 2 | 0 | Tiada/ None | |
| MGM3101 | Prinsip Pengurusan/ <i>Principles of Management</i> | 3 | 3 | 0 | Tiada/ None | |

| | | | | | |
|---------------------------|--|---|---|---|--------------|
| MGM3180 | Asas Keusahawanan/ <i>Basic Entrepreneurship</i> | 3 | 2 | 1 | Tiada/ None |
| PRT2009 | Pertanian dan Kehidupan / <i>Agriculture and Life</i> | 2 | 1 | 1 | Tiada/None |
| SKP2101* | Kenegaraan Malaysia/ <i>Malaysian Nationhood</i> | 3 | 3 | 0 | Tiada/ None |
| FEM2401* * | Politik Malaysia Dan Masyarakat/ <i>Malaysian Politics and Society</i> | 2 | 2 | 0 | |
| SKP3112* | Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i> | 2 | 2 | 0 | Tiada/ None |
| SKP3113* * | Falsafah dan Isu Semasa Masyarakat Sivil/ <i>Philosophy and Current Issues in Civil Society</i> | 3 | 3 | 0 | Tiada/ None |
| atau/ or SKP3123* * | Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i> | | | | |
| SKP3122* | Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i> | 2 | 2 | 0 | Tiada/ None |
| LPM2100* * | Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i> | 2 | 2 | 0 | Tiada / None |
| QK_XXXX | Kokurikulum I / <i>Co-curriculum I</i> | 1 | 0 | 1 | Tiada/ None |
| QK_XXXX | Kokurikulum II / <i>Co-curriculum II</i> | 1 | 0 | 1 | Tiada/ None |

Nota: * pelajar tempatan/ local student **pelajar antarabangsa/ international student

2. Kursus Teras di Universiti/ *Core Courses in University (80 Kredit/ 80 Credits)*

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T | PRASYARAT/ PREREQUISITE | (√) Jika lulus/ if passed |
|----------------------------|--|----|---|-----|----------------------------|---------------------------|
| ACT3112 | Perakaunan Pengenalan/ <i>Introductory Accounting</i> | 4 | 3 | 1 | Tiada/ None | |
| LP_2101 | Bahasa Global Asas I/ <i>Basic Global Language I</i> | 3 | 3 | 0 | Tiada/ None | |
| CHY3201 | Kimia Organik 1/ <i>Organic Chemistry 1</i> | 4 | 3 | 1 | CHY2001# | |
| FMO3001 | Pengenalan kepada Pembuatan Makanan/ <i>Introduction to Food Manufacturing</i> | 2 | 2 | 0 | Tiada/ None | |
| FMO3101 | Perubahan Nutrien dalam Pembuatan Makanan/ <i>Nutrient Changes in Food Manufacturing</i> | 3 | 3 | 0 | Tiada/ None | |

| | | | | | |
|---------|---|---|---|---|----------------------|
| FMO3203 | Mikrobiologi dan Sanitasi dalam Pemrosesan Makanan/ <i>Microbiology and Sanitation in Food Processing</i> | 3 | 3 | 0 | Tiada/ None |
| FMO3402 | Operasi Unit dalam Pembuatan Makanan/ <i>Unit Operations in Food Manufacturing</i> | 3 | 2 | 1 | FST3401 |
| FMO3801 | Pemrosesan dan Pengawetan Makanan/ <i>Food Processing and Preservation</i> | 3 | 2 | 1 | Tiada/ None |
| FMO4301 | Pembuatan dan Pengkomersilan Produk Makanan Baharu/ <i>Manufacturing and Commercialization of New Food Products</i> | 3 | 1 | 2 | FMO4801 atau FMO4802 |
| FMO4501 | Perundangan dalam Operasi Pembuatan Makanan/ <i>Laws in Food Manufacturing Operations</i> | 2 | 2 | 0 | Tiada/ None |
| FMO4601 | Analisis Produk Makanan/ <i>Analysis of Food Products</i> | 3 | 2 | 1 | Tiada/ None |
| FMO4602 | Kualiti dan Piawaian dalam Industri Pembuatan Makanan/ <i>Quality and Standards in Food Manufacturing Industry</i> | 3 | 3 | 0 | Tiada/ None |
| FMO4701 | Pengurusan Rangkaian Bekalan Makanan/ <i>Food Supply Chain Management</i> | 3 | 3 | 0 | MGM3101 |
| FMO4801 | Pembuatan Hasil Tumbuhan/ <i>Manufacturing of Plant Products</i> | 3 | 2 | 1 | FMO3801 |
| FMO4802 | Pembuatan Hasil Haiwan/ <i>Manufacturing of Animal Products</i> | 3 | 2 | 1 | FMO3801 |
| FMO4959 | Disertasi Bacelor/ <i>Bachelor Dissertation</i> | 6 | 0 | 6 | Tiada/ None |
| FST3111 | Kimia Komponen Makanan/ <i>Chemistry of Food Components</i> | 3 | 3 | 0 | Tiada/ None |
| FST3401 | Asas Kejuruteraan Makanan/ <i>Fundamentals of Food Engineering</i> | 3 | 2 | 1 | Tiada/ None |
| FST3602 | Makanan Halal/ <i>Halal Food</i> | 2 | 2 | 0 | Tiada/ None |
| FST4407 | Pengurusan Operasi Loji Makanan/ <i>Operational Management of Food Plant</i> | 3 | 3 | 0 | FST3405 atau FMO3402 |
| FST4408 | Pembungkusan Makanan/ <i>Food Packaging</i> | 3 | 2 | 1 | FST3302 atau FMO3801 |
| FST4410 | Kejuruteraan Sisa Industri Makanan/ <i>Food Industry Waste Engineering</i> | 2 | 2 | 0 | Tiada/ None |
| FST4411 | Reka Bentuk Loji Makanan/ <i>Food Plant Design</i> | 3 | 3 | 0 | FST3405 atau FMO3801 |
| MGM3113 | Gelagat Organisasi/ <i>Organizational Behavior</i> | 3 | 3 | 0 | MGM3101 |

| | | | | | |
|---------|---|---|---|---|-------------|
| MGM3211 | Prinsip Pemasaran/ <i>Principles of Marketing</i> | 3 | 3 | 0 | Tiada/ None |
| MTH3003 | Statistik Bagi Sains Gunaan/ <i>Statistics for Applied Sciences</i> | 4 | 3 | 1 | Tiada/ None |

Pengecualian daripada kursus CHY2001 (Kimia Am) diberi kepada pelajar yang memperolehi C+ ke atas bagi kimia peringkat diploma, matrikulasi, asasi dan STPM tetapi **pelajar perlu mengisi borang pengecualian atas talian**. # *Exemption from CHY2001 (General Chemistry) course is given to students who obtained C+ and above for their diploma, matriculation, foundation, and STPM level chemistry but students are required to fill in the online exemption form.*

3. Kursus Teras di Industri/ *Core Courses in Industry* (26 Kredit/ 26 Credits)

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T | PRASYARAT/ PREREQUISITE | (√) Jika lulus/ if passed |
|-------------------------------|---|----|---|-----|----------------------------|------------------------------------|
| FMO4901 | Latihan Industri/ <i>Industrial Training</i> | 12 | 0 | 12 | Tiada/ None | |
| FMO4902 | Operasi Industri Pembuatan Makanan/ <i>Operations in Food Manufacturing Industry</i> | 14 | 0 | 14 | Tiada/ None | |

Nota/ Notes : Kr = Jam Kredit/ *Credit Hour*, K = Kuliah/ *Lecture*, A = Amali/ *Laboratory*, T = Tutorial

SKEMA PENGAJIAN BACELOR SAINS OPERASI PEMBUATAN MAKANAN DENGAN KEPUJIAN/ *STUDY SCHEME FOR BACHELOR OF SCIENCE IN FOOD MANUFACTURING OPERATIONS WITH HONOURS*

TAHUN 1/ *1ST YEAR*

SEMESTER 1/ *1ST SEMESTER*

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|---|-----------|-----------|----------|
| MTH3003 | Statistik Bagi Sains Gunaan/ <i>Statistics for Applied Sciences</i> | 4 | 3 | 1 |
| FMO3001 | Pengenalan kepada Pembuatan Makanan/ <i>Introduction to Food Manufacturing</i> | 2 | 2 | 0 |
| MGM3101 | Prinsip Pengurusan/ <i>Principles of Management</i> | 3 | 3 | 0 |
| MGM3180 | Asas Keusahawanan/ <i>Basic Entrepreneurship</i> | 3 | 2 | 1 |
| PRT2009 | Pertanian dan Kehidupan/ <i>Agriculture dan Life</i> | 2 | 1 | 1 |
| SKP2101* | Kenegaraan Malaysia/ <i>Malaysian Nationhood</i> | 3 | 3 | 0 |
| FEM2401** | Politik Malaysia Dan Masyarakat/ <i>Malaysian Politics and Society</i> | 2 | 2 | 0 |
| QK_XXXX | Ko-kurikulum I/ <i>Co-curriculum I</i> | 1 | 0 | 1 |
| JUMLAH/ TOTAL | | 18 | 14 | 4 |

SEMESTER 2/ 2ND SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|------------------------------------|---|-----------|-----------|----------|
| LPE2403 | Interaksi dan Pembentangan Akademik/ <i>Academic Interaction and Presentation</i> | 3 | 3 | 0 |
| FCE3204 | Kemahiran Berfikir/ <i>Thinking Skills</i> | 2 | 2 | 0 |
| FST3401 | Asas Kejuruteraan Makanan/ <i>Fundamentals of Food Engineering</i> | 3 | 2 | 1 |
| CHY3201# | Kimia Organik 1/ <i>Organic Chemistry 1</i> | 4 | 3 | 1 |
| SKP3112* | Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i> | 2 | 2 | 0 |
| SKP3113** atau/ or SKP3123** | Falsafah dan Isu Semasa Masyarakat Sipil/ <i>Philosophy and Current Issues in Civil Society</i> atau/ or Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i> | 3 | 3 | 0 |
| SKP3122* | Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i> | 2 | 2 | 0 |
| LPM2100** | Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i> | 2 | 2 | 0 |
| FMO3101 | Perubahan Nutrien dalam Pembuatan Makanan/ <i>Nutrient Changes in Foods Manufacturing</i> | 3 | 3 | 0 |
| QK_XXXX | Ko-kurikulum II/ <i>Co-curriculum II</i> | 1 | 0 | 1 |
| JUMLAH/ TOTAL | | 20 | 17 | 3 |

TAHUN 2/ 2ND YEARSEMESTER 1/ 1ST SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|---|-----------|-----------|----------|
| ACT3112 | Perakaunan Pengenalan/ <i>Introductory Accounting</i> | 4 | 3 | 1 |
| FMO3203 | Mikrobiologi dan Sanitasi dalam Pemprosesan Makanan/ <i>Microbiology and Sanitation in Food Processing</i> | 3 | 3 | 0 |
| FMO3801 | Pemprosesan dan Pengawetan Makanan/ <i>Food Processing and Preservation</i> | 3 | 2 | 1 |
| FMO4601 | Analisis Produk Makanan/ <i>Analysis of Food Products</i> | 3 | 2 | 1 |
| FST3111 | Kimia Komponen Makanan/ <i>Chemistry of Food Components</i> | 3 | 3 | 0 |
| LPE2503 | Penulisan Akademik/ <i>Academic Writing</i> | 3 | 3 | 0 |
| JUMLAH/ TOTAL | | 19 | 16 | 3 |

SEMESTER 2/ 2ND SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|---|-----------|-----------|----------|
| FMO3402 | Operasi Unit dalam Pembuatan Makanan/ <i>Unit Operations in Food Manufacturing</i> | 3 | 2 | 1 |
| FMO4501 | Perundangan dalam Operasi Pembuatan Makanan/ <i>Laws in Food Manufacturing Operations</i> | 2 | 2 | 0 |
| FMO4801 | Pembuatan Hasil Tumbuhan/ <i>Manufacturing of Plant Products</i> | 3 | 2 | 1 |
| FMO4802 | Pembuatan Hasil Haiwan/ <i>Manufacturing of Animal Products</i> | 3 | 2 | 1 |
| FST3602 | Makanan Halal/ <i>Halal Food</i> | 2 | 2 | 0 |
| FST4410 | Kejuruteraan Sisa Industri Makanan/ <i>Food Industrial Waste Engineering</i> | 2 | 2 | 0 |
| MGM3211 | Prinsip Pemasaran/ <i>Principles of Marketing</i> | 3 | 3 | 0 |
| JUMLAH/ TOTAL | | 18 | 15 | 3 |

TAHUN 3/ 3RD YEARSEMESTER 1/ 1ST SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|---|-----------|-----------|----------|
| LP_2101 | Bahasa Global Asas I/ <i>Basic Global Language I</i> | 3 | 3 | 0 |
| FMO4301 | Pembuatan dan Pengkomersilan Produk Makanan Baharu/ <i>Manufacturing and Commercialization of New Food Products</i> | 3 | 1 | 2 |
| FMO4602 | Kualiti dan Piawaian dalam Pembuatan Makanan/ <i>Food Quality and Standards in Food Manufacturing Industry</i> | 3 | 3 | 0 |
| FST4411 | Rekabentuk Loji Makanan/ <i>Food Plant Design</i> | 3 | 3 | 0 |
| FST4408 | Pembungkusan Makanan/ <i>Food Packaging</i> | 3 | 2 | 1 |
| MGM3113 | Gelagat Organisasi/ <i>Organizational Behavior</i> | 3 | 3 | 0 |
| JUMLAH/ TOTAL | | 18 | 15 | 3 |

SEMESTER 2/ 2ND SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|--|----------|----------|----------|
| FMO4959 | Disertasi Bacelor/ <i>Bachelor Dissertation</i> | 6 | 0 | 6 |
| FST4407 | Pengurusan Operasi Loji Makanan/ <i>Operational Management of Food Plant</i> | 3 | 3 | 0 |
| FMO4701 | Pengurusan Rangkaian Bekalan Makanan/ <i>Food Supply Chain Management</i> | 3 | 3 | 0 |

| | | | |
|----------------------|-----------|----------|----------|
| JUMLAH/ TOTAL | 12 | 6 | 6 |
|----------------------|-----------|----------|----------|

TAHUN 4/ 4TH YEAR

SEMESTER 1/ 1ST SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|--|-----------|----------|-----------|
| FMO4902 | Operasi Industri Pembuatan Makanan/ <i>Operations in Food Manufacturing Industry</i> | 14 | 0 | 14 |
| JUMLAH/ TOTAL | | 14 | 0 | 14 |

SEMESTER 2/ 2ND SEMESTER

| KOD KURSUS/ COURSE CODE | NAMA KURSUS/ COURSE NAME | Kr | K | A/T |
|-------------------------------|--|-----------|----------|-----------|
| FMO4901 | Latihan Industri/ <i>Industrial Training</i> | 12 | 0 | 12 |
| JUMLAH/ TOTAL | | 12 | 0 | 12 |

KURSUS TAWARAN FAKULTI ATAU PUSAT LAIN/ COURSES OFFERED BY OTHER FACULTIES OR CENTRES

(Sila rujuk sinopsis pada fakulti atau pusat berkenaan/ Please refer to course synopsis from the respective faculties or centres)

1. FAKULTI EKOLOGI MANUSIA/ FACULTY OF HUMAN ECOLOGY

| | | | |
|-----|---------|--|---------|
| 1.1 | SKP2101 | Kenegaraan Malaysia/ <i>Malaysian Nationhood</i> | 3 (3+0) |
| 1.2 | SKP3112 | Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i> | 2 (2+0) |
| 1.3 | SKP3122 | Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i> | 2 (2+0) |

2. FAKULTI PERTANIAN/ FACULTY OF AGRICULTURE

| | | | |
|-----|---------|--|---------|
| 2.1 | PRT2009 | Pertanian dan Kehidupan/ <i>Agriculture and Life</i> | 2 (1+1) |
| 2.2 | PPT4202 | Perancangan dan Pengurusan Projek Perniagaantani/ <i>Agricbusiness Project Planning and Management</i> | 3 (3+0) |
| 2.3 | PPT4702 | Keusahawanan Perniagaantani/ <i>Agricbusiness Entrepreneurship</i> | 3 (2+1) |

3. PUSAT PEMAJUAN KOMPETENSI BAHASA/ CENTRE FOR THE ADVANCEMENT OF LANGUAGE COMPETENCE (CALC)

| | | | |
|-----|---------|--|---------|
| 3.1 | LPE2302 | <i>Reading for Academic Purposes</i> | 3 (3+0) |
| 3.2 | LPE2403 | <i>Academic Interaction and Presentation</i> | 3 (3+0) |
| 3.3 | LPE2503 | <i>Academic Writing</i> | 3 (3+0) |
| 3.4 | BBI2412 | <i>Writing for Academic Purposes</i> | 3 (2+1) |
| 3.5 | LPE2303 | <i>Critical Reading Skills</i> | 3 (2+1) |
| 3.6 | LPE2504 | <i>Creative Writing Skills</i> | 3 (2+1) |
| 3.7 | LP_2101 | Bahasa Global Asas I/ <i>Basic Global Language I</i> | 3 (3+0) |
| 3.8 | LP_2102 | Bahasa Global Asas II/ <i>Basic Global Language II</i> | 3 (2+1) |
| 3.9 | LP_2103 | Bahasa Global Asas III/ <i>Basic Global Language III</i> | 3 (2+1) |

4. FAKULTI EKONOMI DAN PENGURUSAN/ FACULTY OF ECONOMY AND MANAGEMENT

| | | | |
|-----|---------|---|---------|
| 4.1 | MGM3101 | Prinsip Pengurusan/ <i>Principles of Management</i> | 3 (2+1) |
| 4.2 | MGM3113 | Gelagat Organisasi/ <i>Organizational Behavior</i> | 3 (3+0) |
| 4.3 | MGM3180 | Asas Keusahawanan/ <i>Basic Entrepreneurship</i> | 3 (2+1) |
| 4.4 | MGM3211 | Prinsip Pemasaran/ <i>Principles of Marketing</i> | 3 (3+0) |
| 4.5 | MGM3244 | Gelagat Pengguna/ <i>Consumer Behavior</i> | 3 (3+0) |
| 4.6 | MGM4154 | Pengurusan Perdagangan Antarabangsa/ <i>International Business Management</i> | 3 (3+0) |
| 4.7 | MGM4183 | Keusahawanan/ <i>Entrepreneurship</i> | 3 (3+0) |

| | | | |
|------|---------|--|---------|
| 4.8 | MGM4204 | Pemasaran Perkhidmatan/ <i>Services Marketing</i> | 3 (3+0) |
| 4.9 | MGM4219 | Pengurusan dan Strategi Pemasaran/ <i>Marketing Strategy and Management</i> | 3 (3+0) |
| 4.10 | MGM4224 | Pemasaran Langsung/ <i>Direct Marketing</i> | 3 (3+0) |
| 4.11 | MGM4264 | Penyelidikan Pemasaran/ <i>Marketing Research</i> | 3 (3+0) |
| 4.12 | MGM4273 | Pemasaran Antarabangsa/ <i>International Marketing</i> | 3 (3+0) |
| 4.13 | MGM4284 | Pengurusan Promosi/ <i>Promotion Management</i> | 3 (3+0) |
| 4.14 | ACT2112 | Perakaunan Pengenalan/ <i>Introductory Accounting</i> | 4 (3+1) |
| 4.15 | ACT2131 | Perakaunan Kos dan Pengurusan/ <i>Cost and Management Accounting</i> | 3 (3+0) |
| 4.16 | ACT3211 | Pengurusan Kewangan/ <i>Financial Management</i> | 3 (3+0) |
| 4.17 | ACT3112 | Perakaunan Pengenalan/ <i>Introductory Accounting</i> | 4 (3+1) |
| 4.18 | ECN3100 | Prinsip Ekonomi/ <i>Principles of Economics</i> | 3 (3+0) |
| 4.19 | HPR4100 | Pengurusan Hotel dan Pusat Peranginan/ <i>Hotel And Resort Management</i> | 3 (3+0) |
| 4.20 | HPR4314 | Pengurusan Acara, Konvensyen Dan Pameran/ <i>Event, Convention And Exhibition Management</i> | 3 (3+0) |

5. FAKULTI SAINS/ *FACULTY OF SCIENCE*

| | | | |
|-----|---------|---|---------|
| 5.1 | PHY2001 | Fizik Am/ <i>General Physics</i> | 4 (3+1) |
| 5.2 | CHY2001 | Kimia Am/ <i>General Chemistry</i> | 4 (3+1) |
| 5.3 | FST3201 | Kimia Organik 1/ <i>Organic Chemistry I</i> | 4 (3+1) |
| 5.4 | MTH3003 | Statistik Bagi Sains Gunaan/ <i>Statistics for Applied Sciences</i> | 4 (3+1) |

6. FAKULTI PERUBATAN DAN SAINS KESIHATAN/ *FACULTY OF MEDICINE AND HEALTH SCIENCES*

| | | | |
|-----|---------|---|---------|
| 6.1 | DTK3000 | Kaunseling Pemakanan/ <i>Nutrition Counseling</i> | 3 (2+1) |
| 6.2 | DTK3200 | Pemakanan Klinikal/ <i>Clinical Nutrition</i> | 4 (3+1) |
| 6.3 | DTK3201 | Diet Terapi I/ <i>Therapeutic Diet I</i> | 3 (3+0) |
| 6.4 | SBP3202 | Biokimia Klinikal/ <i>Clinical Biochemistry</i> | 3 (2+1) |

7. FAKULTI BAHASA MODEN DAN KOMUNIKASI/ *FACULTY OF MODERN LANGUAGE AND COMMUNICATION*

| | | | |
|-----|---------|--|---------|
| 7.1 | KOH3432 | Kemahiran Komunikasi Interpersonal/ <i>Interpersonal Communication Skill</i> | 3 (2+1) |
|-----|---------|--|---------|

8. FAKULTI PENGAJIAN PENDIDIKAN / *FACULTY OF EDUCATIONAL STUDIES*

| | | | |
|-----|---------|--|---------|
| 8.1 | FCE3204 | Kemahiran Berfikir/ <i>Thinking Skills</i> | 2 (2+0) |
|-----|---------|--|---------|