FACULTY OF BIOTECHNOLOGY AND BIOMOLECULAR SCIENCES
UNIVERSITI PUTRA MALAYSIA
WITH KNOWLEDGE WE SERVE
HISTORY

- 1931 - School of Agriculture
- 1947 - Malayan Agricultural College
- 1971 - Universiti Pertanian Malaysia
- 1997 - Universiti Putra Malaysia
- 2006 - Recognize as one of research universities in Malaysia

UNIVERSITY’s FACTS AND INFO

- Faculties : 16
- Institutes : 9
- Centre : 16

<table>
<thead>
<tr>
<th>UNDERGRADUATE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>17,252</td>
</tr>
<tr>
<td>International Undergraduates</td>
<td>326</td>
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<tr>
<td>Undergraduate Exchange to UPM</td>
<td>277</td>
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<table>
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<tr>
<th>POSTGRADUATE</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Postgraduates</td>
<td>10,286</td>
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<tr>
<td>International Postgraduates</td>
<td>2,948</td>
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<tr>
<td>Postgraduates Exchange to UPM</td>
<td>26</td>
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CAMPUS FACILITIES

LIBRARY

SPORTS
CAMPUS FACILITIES

CULTURE AND ARTS

COLLEGE
CAMPUS FACILITIES

FOODS

RECREATION
Vision

- To become an internationally reputable Faculty in the area of biotechnology and biomolecular sciences.

Mission

- To be a leading centre of learning and research in the area of biotechnology and biomolecular sciences, contributing not only towards the creation of wealth and nation building but also towards universal human advancement and discovery of knowledge.
## FACULTY STAFF

<table>
<thead>
<tr>
<th>Academic Staff</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>14</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>14</td>
</tr>
<tr>
<td>Lecturer</td>
<td>31</td>
</tr>
<tr>
<td>Tutor</td>
<td>16</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>75</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Non-Academic Staff</th>
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</thead>
<tbody>
<tr>
<td>Administration Officer</td>
<td>3</td>
</tr>
<tr>
<td>Science Officer</td>
<td>6</td>
</tr>
<tr>
<td>Research Officer</td>
<td>2</td>
</tr>
<tr>
<td>Engineer</td>
<td>1</td>
</tr>
<tr>
<td>Supporting Staff</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>89</strong></td>
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ACADEMIC AND STUDENT AFFAIR
## PROGRAMMES OFFERED

### Undergraduate Studies

<table>
<thead>
<tr>
<th>Programme</th>
<th>Degree</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td><strong>Cell and Molecular Biology</strong></td>
<td>B. Sc. (Hons.)</td>
<td>4 years</td>
</tr>
<tr>
<td><strong>Bioprocess Technology</strong></td>
<td>B. Sc. (Hons.)</td>
<td>4 years</td>
</tr>
<tr>
<td><strong>Microbiology</strong></td>
<td>B. Sc. (Hons.)</td>
<td>4 years</td>
</tr>
<tr>
<td><strong>Biochemistry</strong></td>
<td>B. Sc. (Hons.)</td>
<td>4 years</td>
</tr>
</tbody>
</table>
**Undergraduate Programmes**

- B. Sc. (Hons.) Biochemistry
- B. Sc. (Hons.) Biotechnology
- B. Sc. (Hons.) Microbiology
- B. Sc. (Hons.) Cell & Molecular Biology

**ENTRY REQUIREMENTS**

- Matriculation or Foundation
- STPM
- Diploma and Equivalent
Course materials: Notes, assignments and etc
STUDENT INFORMATION SYSTEM (SMP)

**MYREGISTER**

**MUHAMMAD SHALHADI BIN SAHARUDDIN**

You are not allowed to register any course due to the following reason(s):

1) Now is not within registration period.

**LIST OF COURSES REGISTERED:**

<table>
<thead>
<tr>
<th>NO.</th>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
<th>CREDIT HOUR</th>
<th>STATUS</th>
<th>LECTURE TIME</th>
<th>LECTURE GROUP</th>
<th>LECTURE LOCATION</th>
<th>LAB TIME</th>
<th>LAB GROUP</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>BTC3002</td>
<td>COMMERCIALISATION AND CURRENT ISSUES IN BIOTECHNOLOGY</td>
<td>2(2+0)</td>
<td>YW</td>
<td>S10-12</td>
<td>1</td>
<td>BS BIOTECH 1.4</td>
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<td>2</td>
<td>BTC3303</td>
<td>BIOPROCESS DESIGN AND SCALING-UP</td>
<td>3(2+1)</td>
<td>YW</td>
<td>I10-12</td>
<td>1</td>
<td>BS BIOTECH 1.3</td>
<td>R14-17</td>
<td>MP1</td>
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<tr>
<td>3</td>
<td>BTC3401</td>
<td>SOLID WASTE TREATMENT TECHNOLOGY</td>
<td>2(2+0)</td>
<td>YW</td>
<td>K08-10</td>
<td>1</td>
<td>BS BIOTECH 1.3</td>
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<tr>
<td>4</td>
<td>BTC4901</td>
<td>INDUSTRIAL TRAINING</td>
<td>6(0+6)</td>
<td>YW</td>
<td></td>
<td>1</td>
<td>LATIHAN INDUSTRI</td>
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</table>

**TOTAL CREDIT HOURS:** 13
STUDENT CENTRED LEARNING (SCL)

SCL Approaches

- Case Study
- Modular Approach
- Problem Based Learning (PBL)
- Project Oriented Problem Based Learning (PoPBL)

Universiti Putra Malaysia
TEACHING FACILITIES - CLASS
TEACHING FACILITIES - CLASS
TEACHING FACILITIES - LABORATORY
TEACHING FACILITIES - ICT
ACTIVITIES

Students orientation

Career Day

Biomix Dinner

Outdoor activities

Muhibbah Biomix
DISTRIBUTION OF INTERNATIONAL STUDENTS

- Iran
- Indonesia
- Nigeria
- Gambia
- Kenya
RESEARCH AND POSTGRADUATE STUDIES
PROGRAMMES OFFERED
Postgraduate Studies

Doctor of Philosophy (PhD)
• With Thesis
• 6-10 Semesters

Master of Science (MS)
• With Thesis
• 4-6 Semesters
RESEARCH CLUSTER: BIOSYSTEM & BIOTECHNOLOGY (BB)

Prof. Datin Paduka Dr Khatijah Yusoff
Head of Cluster

<table>
<thead>
<tr>
<th>RP</th>
<th>RG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Animal Vaccine and Diagnostic Technology</td>
<td>2</td>
</tr>
<tr>
<td>2. Bioengineering and Bioprocessing</td>
<td>2</td>
</tr>
<tr>
<td>3. Microbial and Cellular Technology</td>
<td>4</td>
</tr>
<tr>
<td>4. Systems Biology and Molecular Systematics</td>
<td>3</td>
</tr>
</tbody>
</table>

RP = Research Program  
RC = Research Centre  
RG = Research Group
CLUSTER: BIOSYSTEM & BIOTECHNOLOGY (BB)

BIOSYSTEMS AND BIOTECHNOLOGY

- Animal Vaccine and Diagnostic Technology
  - Vaccines and Diagnostic Technologies
    - Aquatic Diagnostics and Health Management
  - Bioengineering and Bioprocessing
    - Biomass & Biorefinery
      - Biomanufacturing Design (BBRC)
  - Microbial and Cellular Technology
    - Enzyme and Microbial Technology (EMTech) RESEARCH CENTRE
      - Lactic Acid Bacteria and Biosystems
      - Bioremediation
    - Molecular Aquatic Biodiversity
  - Systems Biology and Molecular Systematics
    - Functional Genomics and Bioinformatics
    - Molecular Systematics

“Towards universal human advancement and discovery of knowledge”
ENZYME & MICROBIAL TECHNOLOGY (EmTech)

Prof. Dr. Raja Noor Zaliha Raja Abd. Rahman
Head of Research Center EmTech

Isolation and identification of microorganisms for enzyme production

Molecular approaches to enhance yield and obtain novel properties

Structures and functions of enzymes

Enzymatic synthesis for high value-added products

Bioremediation and bioconversion

Research Collaborators:

UNIVERSITIES/RI’S
• Nancy Université, France
• University of Minnesota, USA
• Osaka University, Japan
• University of Hyogo, Japan
• Hokkaido University, Japan
• Academia Sinica, Taiwan
• Malaysian Genome Institute (MGI)

PRIVATE SECTORS
• Maruwa Foods & Biosciences, Japan
• Masaru Sato Space Programme, Japanese Space Exploration Agency (JAXA)
BIOPROCESSING AND BIOMANUFACTURING RESEARCH CENTER (BBRC)

Prof. Dr. Arbakariya Ariff
Head of BBRC

- Reactor system and process design
- Development, kinetics, modeling and optimization for production of industrial enzymes and products

Research Collaborators:

UNIVERSITIES/RI
- University of Sheffield, UK
- Air Langga University, Indonesia
- Thailand Institute of Science and Technological Research, Thailand

PRIVATE SECTORS
- Sime Darby Sdn Bhd
- Malaysian Palm Oil Board (MPOB)
- Malaysian AgriHighTech Sdn Bhd
- Stellagen Sdn Bhd
Biomass utilization for production of renewable and valuable green bioproducts (bioenergy, biofertilizer, bioplastics) from oil palm waste biomass, kitchen waste, landfill leachate and sago wastes.
LACTIC ACID BACTERIA

Applications of LAB and their metabolites for food, health, livestock and aquaculture industries

Plasmid and bacterial strain improvement

Recombinant vaccine development

Enhancing growth and production of metabolites - bioprocess technology

LAB culture collection

Research Collaborators:

UNIVERSITIES/RI:
- UTM, USM, UM, UKM, UiTM
- National Institute of Health, USA
- Thailand Institute of Science and Technological Research
- BOKU, Austria
- NAIST, Japan

PRIVATE SECTORS:
- Nutrino Synbio (M) Sdn. Bhd.
- Stellagen Sdn. Bhd.
- Ecocillus Sdn Bhd.
- Cosmos Sdn Bhd.

Prof. Dr. Raha Abdul Rahim
Research Group Leader
MoU, Collaborations, Visits, Seminars, Conferences, Professional Societies, and Society engagement

Prof. G. R. Tomlinson from Sheffield University

Prof. Robert Slater from University of Hertfordshire, UK

Dr. Mohd Yunus Abd. Shukor explaining his Kit for Monitoring Xenobiotics Pollution

Signing of MoU between UPM and Johor Plant Tech Sdn. Bhd.

Signing of MoU between UPM, FELDA and KIT

Our protein to space!!! Research under Prof Raja Nor Zaliha
SELECTED PRODUCTS

NipahScan

Planting Materials

Bioplastic (PHA)

New orchid varieties/fragrant orchids
Bioenergy, KIT-FELDA-UPM

Space crystals

Bacterial cellulose

Enzyme assay of environmental toxicants (Xenoassay kit)
ECPhage for colibacillosis control in poultry. The solution contains bacteriophage that could specifically eliminate the causative agent of colibacillosis. When administered to infected chickens, ECPhage could reduce the mortality rate of chickens by 75%. The body weights of infected chickens were also not significantly different from uninfected chickens.

L2 lipase space crystals in capillary tube
EXPERTS AT BIOTECH UPM
DEPARTMENT OF BIOCHEMISTRY

HEAD OF DEPARTMENT

Professor Dato’ Dr. Abu Bakar Salleh
Ph.D (University of St. Andrews)
Field: Applied Biochemistry and Enzyme Technology

Professor Dr. Mohd. Arif Syed
Ph.D (University of Aberdeen)
Field: Bioremediation and Toxicology

Professor Dr. Maziah Mahmood
Ph.D (Murdoch University)
Dip. Plant. Tissue Culture (C.S.U.)
Field: Plant Biochemistry and Plant Biotechnology
DEPARTMENT OF BIOCHEMISTRY

Professor Dr. Norhani Abdullah
Ph.D (Universiti Putra Malaysia)
Field: Animal Nutritional Biochemistry

Associate Professor Dr. Mohd. Yunus Abd. Shukor (Sabbatical leave)
Ph.D (Universiti Putra Malaysia)
Field: Bioremediation

Dr. Mohd Shukuri Mohamad Ali (Sabbatical leave)
Ph.D (Universiti Putra Malaysia)
Field: Structure Biochemistry
Dr. Syahida Ahmad  
Ph.D (Universiti Putra Malaysia)  
Field: Natural Product and Animal Cell Biotechnology

Dr. Noor Azmi Shaharudin  
Ph.D (University of Notthingham)  
Field: Plant Biotechnology

Dr. Uswatun Hasanah Zaidan (Post Doctoral leave)  
Ph.D (Universiti Putra Malaysia)  
Field: Enzyme Technology & Food Biochemistry
Dr. Mohammed Nazrim Marikkar
Ph.D (Universiti Putra Malaysia)
Field: Food Chemistry

Dr. Siti Aqlima Ahmad
Ph.D (Universiti Putra Malaysia)
Field: Bioremediation & Toxicology

Dr. Zetty Norhana Balia Yusof
Ph.D (University of Cambridge)
Field: Plant Sciences
DEPARTMENT OF BIOCHEMISTRY

Dr. Amir Syahir Amir Hamzah  
Ph.D (Tokyo Institute of Technology)  
Field: Biosensor

Dr. Siti Nurbaya Oslan  
Ph.D (Universiti Putra Malaysia)  
Field: Microbial Biotechnology

Dr. Nur Adeela Yasid  
Ph.D (University of Sheffield)  
Field: Microbial Metabolomics
DEPARTMENT OF BIOPROCESS TECHNOLOGY

HEAD OF DEPARTMENT
Associate Professor Dr. Rosfarizan Mohamad
Ph.D (Universiti Putra Malaysia)
Field: Fermentation Technology

Professor Dr. Mohd. Ali Hassan
Ph.D (Okayama University)
Field: Bioprocess Engineering and Environmental Biotechnology

Professor Dr. Arbakariya Ariff
Ph.D (University of Manchester Institute of Science & Technology)
Field: Fermentation Technology and Bioprocess Engineering
DEPARTMENT OF BIOPROCESS TECHNOLOGY

Professor Dr. Suraini Abd. Aziz
Ph.D (University of Wales)
Field: Biochemical Engineering and Enzyme Technology

Professor Dr. Lai Oi Ming
Ph.D (Universiti Putra Malaysia)
Field: Enzyme & Oils Technology and Food Biotechnology

Associate Professor Dr. Foo Hooi Ling
Ph.D (Imperial College London)
Field: Industrial Biotechnology
DEPARTMENT OF BIOPROCESS TECHNOLOGY

**Associate Professor Dr. Umi Kalsom Md Shah**  
Ph.D (Universiti Putra Malaysia)  
Field: Industrial Microbiology

**Associate Professor Dr. Nor ‘Aini Abdul Rahman**  
Ph.D (Kyushu Institute of Technology)  
Field: Environmental Biotechnology & Metabolic Engineering

**Dr. Phang Lai Yee**  
Ph.D (Kyushu Institute of Technology)  
Field: Environmental Biotechnology
Dr. Helmi Wasoh @ Mohamad Isa  
Ph.D (Universiti Putra Malaysia)  
Field: Enzyme Technology

Dr. Hidayah Ariffin  
Ph.D (Kyushu Institute of Technology)  
Field: Environmental Biotechnology & Bioprocess Engineering

Dr. Mohd Rafein Zakaria (*Post Doctoral leave*)  
Ph.D (Universiti Putra Malaysia)  
Field: Environmental Biotechnology
Dr. Murni Halim
Ph.D (University College London)
Field: Bioprocess Engineering

Dr. Norhayati Ramli
Ph.D (Universiti Putra Malaysia)
Field: Microbial Biotechnology

Dr. Mohd Zulkhairi Mohd Yusoff
Ph.D (Kyushu Institute of Technology)
Field: Environmental Biotechnology
Dr. Mohamad Faizal Ibrahim  
Ph.D (Universiti Putra Malaysia)  
Field: Bioprocessing and Enzyme Technology

Dr. Mohd Shamzi Mohamed  
Ph.D (Universiti Putra Malaysia)  
Field: Fermentation Technology and Bioprocess Engineering

Dr. Ahmad Muhaimin Roslan  
Ph.D (Kyushu Institute of Technology)  
Field: Environmental Engineering
HEAD OF DEPARTMENT
Associate Professor Dr. Janna Ong Abdullah
Ph.D (Universiti Putra Malaysia)
Field: Molecular Biology

Professor Dr. Raha Abdul Rahim (secondment to the Ministry of Education)
Ph.D (Strathclyde University)
Field: Microbial Genetics & Molecular Biology

Professor Dr. Tan Soon Guan
Ph.D (University of Hawaii)
Field: Genetics
DEPARTMENT OF CELL AND MOLECULAR BIOLOGY

Associate Professor Dr. Norihan Mohd Saleh (*secondment to the Ministry of Science, Technology and Innovation*)
Ph.D (University of Nottingham)
Field: Plant Biotechnology

Associate Professor Dr. Suhaimi Napis
Ph.D (Durham University)
Field: Plant Molecular Biology

Associate Professor Dr. Ho Chai Ling
Ph.D (Chiba University)
Field: Plant Molecular Biology
DEPARTMENT OF CELL AND MOLECULAR BIOLOGY

Associate Professor Dr. Noorjahan Banu Mohamed Alitheen
Ph.D (Australian National University)
Field: Immunology and Animal Cell Biotechnology

Associate Professor Dr. Parameswari a/p Namasivayam
Ph.D (University of Cambridge)
Field: Plant Molecular and Developmental Biology

Associate Professor Dr. Mohd. Puad Abdullah
Ph.D (Durham University)
Field: Plant Biochemistry and Plant Molecular Biology
Dr. Nurulfiza Mat Isa
Ph.D (Universiti Putra Malaysia)
Field: Bioinformatics and Molecular Biology

Dr. Nik Mohd Afizan Nik Abd Rahman (Post Doctoral leave)
Ph.D (Universiti Putra Malaysia)
Field: Cell & Animal Culture Culture Biotechnology

Dr. Normi Mohd Yahaya
Ph.D. (Riken Institute & Universiti Sains Malaysia)
Field: Molecular and Structural Biochemistry
DEPARTMENT OF CELL AND MOLECULAR BIOLOGY

Dr. Noor Baity Saidi
Ph.D (University of Edinburgh)
Field: Plant Molecular Pathology

Dr. Mariatulqabtiah Abdul Razak
Ph.D (Imperial College London)
Field: Immunology

Dr. Amalia Mohd Hashim
Ph.D (Australian National University)
Field: Biological Chemistry
DEPARTMENT OF CELL AND MOLECULAR BIOLOGY

Dr. Dhilia Udie Lamasudin
Ph.D (University of Glasgow)
Field: Infection and Immunity

Dr. Siti Sarah Othman
Ph.D (University of Glasgow)
Field: Infection and Immunity

Dr. Mas Jaffri Masarudin
Ph.D (La Trobe University)
Field: Nanobiotechnology
DEPARTMENT OF CELL AND MOLECULAR BIOLOGY

Dr. Adam Leow Thean Chor
Ph.D (Universiti Putra Malaysia)
Field: Protein Engineering and Molecular Biology
HEAD OF DEPARTMENT
Associate Professor Dr. Muhajir Hamid
Ph.D (University of Ulster)
Field: Animal Cell Technology

Professor Datin Paduka Dr. Khatijah Mohd Yusoff
Ph.D (La Trobe University)
Field: Microbial Genetics and Molecular Biology

Professor Dr. Raja Noor Zaliha Raja Abd. Rahman
D.Eng. (Kyoto University)
Field: Microbiology and Molecular Biology
DEPARTMENT OF MICROBIOLOGY

Professor Dr. Tan Wen Siang
Ph.D (University of Edinburgh)
Field: Molecular Biology and Virology

Professor Dr. Shuhaimi Mustafa
Ph.D (Universiti Putra Malaysia)
Field: Food Microbiology
DEPARTMENT OF MICROBIOLOGY

Associate Professor Dr. Sieo Chin Chin
Ph.D (Universiti Putra Malaysia)
Field: Applied Microbiology

Associate Professor Dr. Norazizah Shafee
Ph.D (University of Malaya)
Field: Molecular Biology and Virology

Dr. Wan Zuhainis Saad
Ph.D (Universiti Putra Malaysia)
Field: Mycology
Dr. Asilah Ahmad Tajudin
Ph.D (Lund University)
Field: Nanobiotechnology

Dr. Nurhidayah Roslan
Ph.D (Universiti Putra Malaysia)
Field: Molecular Biology

Dr. Chia Suet Lin (Post Doctoral leave)
Ph.D (Universiti Putra Malaysia)
Field: Medical Biotechnology
Dr. Mohd Termizi Yusof
Ph.D (University of Exeter)
Field: Mycology

Dr. Fairolniza Mohd Shariff
Ph.D (Universiti Putra Malaysia)
Field: Structural Biology

Dr. Suriana Sabri
Ph.D (The University of Queensland)
Field: Metabolic Engineering
Address:
kyusoff@upm.edu.my
Faculty of Biotechnology and Biomolecular Sciences
Universiti Putra Malaysia
43400 UPM Serdang
Selangor
Malaysia
Website: www.biotech.upm.edu.my