



# CHEMICAL ENGINEERING GRADUATE PROGRAM

## UNIVERSITAS MUHAMMADIYAH PALEMBANG



UNIVERSITAS MUHAMMADIYAH PALEMBANG  
Jalan Jenderal Ahmad Yani 13 Ulu Palembang

**BAN-PT Accredited**  
SK BAN-PT NO. 5882/SK/BAN-PT/Akred/M/IX/2020



Administration Office  
Graduate Office Building 2<sup>rd</sup> floor



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*"We commit to serve the best of our study program, policies, and systems to support Superior and Islamic graduates in the field of Chemical Engineering"*

# Welcome Speech

**Dian Kharismadewi, S.T., M.T., Ph.D.**  
Head of Chemical Engineering  
Graduate Program



Dear Prospective Students,

Thank you for your interest in Universitas Muhammadiyah Palembang and Chemical Engineering Graduate Program. I welcome you and encourage you to discover more about the academic information where you have benefit from the remarkable Palembang with its extensive educational opportunities in this Green Campus.

Globalization of education and the 4.0 Industrial Revolution presence are inevitable and must be faced by higher education institutions. So that, we commit to serve the best of our study program, policies, and systems to support Superior and Islamic graduates in the field of Chemical Engineering. We hope that our graduates will be able to become leaders who excel and has good personality, creative-innovative, and adaptive with the global developments.

We hope you know us better with this prospectus document and will eventually become part of our graduate program.



**Administration Office**  
**Graduate Program Building, 2<sup>nd</sup> floor**

# History, Vision & Mission of Study Program

Chemical Engineering Graduate Program of Universitas Muhammadiyah Palembang was established with the decree No. 269/KPT/I/2016 on August 29, 2016 from Directorate General of Higher Education Ministry of Education and Culture, Republic of Indonesia. The field of studies in Master's course generally lead to Process Technology, whether it is the process of physics, chemistry or biology with energy and environmental insights. This study program officially opened the admission of new prospective students in August 2017. In 2020, this study program is accredited with predicate of Good Quality decree No. 5882/SK/BAN-PT/Akred/M/IX/2020 from National Accreditation Agency for Higher Education, Ministry of Education and Culture.

## Vision

Become a globally competitive Chemical Engineering Magister Study Program based on Islamic values in the fields of Energy and Sustainable Processes, Advanced Material Engineering, and Process and Environmental Safety.

## Mission

1. Organizing a quality Chemical Engineering Magister Study Program through Catur Dharma oriented towards science and technology development.
2. Organizing Chemical Engineering Magister Study Program governance and civil service based on the principles of good governance and Islamic values.
3. Establishing National and International Catur Dharma collaboration to develop globally competitive study programs.
4. Developing Islamic and professional human resources in his fields of profession.

# Master's Courses & Lecturers

Code	Subjects	Lecturer's Coordinator	Credits
<b>1<sup>st</sup> Semester</b>			
MWU 101	Al-Islam & Muhammadiyah	Dr. Ani Aryati, S.Ag., M.Pd.I.	2
MWP 101	Research Methodology and Philosophy	Dr. Ir. Eka Sri Yusmartini, M.T., IPM.	1
MWP 102	Advanced Thermodynamics	Dian Kharismadewi, S.T., M.T., Ph.D.	3
MWP 103	Advanced Transport Phenomena	Sri Martini, S.T., M.T., Ph.D.	2
-	Elective Course -1	-	3
-	Elective Course -2	-	3
<b>Credits Sub Total</b>			<b>14</b>
<b>2<sup>nd</sup> Semester</b>			
MWP 201	Advanced Chemical Reaction Engineering	Dr. Mardwita, S.T., M.T.	3
MWP 202	Research Proposal	Dr. Ir. Elfidiah, M.T.	3
-	Elective Course -1	-	3
-	Elective Course -2	-	3
<b>Credits Sub Total</b>			<b>12</b>

Code	Subjects	Lecturer's Coordinator	Credits
<b>3<sup>rd</sup> Semester</b>			
MWU 301	Thesis	Dr. Ir. Elfidiah, M.T.	6
-	Elective Course -1	-	3
-	Elective Course -2	-	3
<b>Credits Sub Total</b>			<b>12</b>
<b>Total Credits (Semester 1-3)</b>			<b>38</b>
<b>Elective Courses (Semester 1 &amp; 2)</b>			
MWP 104	Separation Process	Dr. Ir. Elfidiah, M.T.	3
MWP 105	Reactor Analysis and Evaluation	Dr. Ir. Muhammad Arief Karim, M.Sc.	3
MWP 106	Thermal Conversion	Sri Martini, S.T., M.T., Ph.D.	3
MWP 107	Catalysts and Catalysis	Dr. Mardwita, S.T., M.T.	3
MWP 108	Corrosion Process and Prevention	Dr. Ir. Marhaini, M.T.	3
MWP 203	Particle Technology	Dr. Ir. Eka Sri Yusmartini, M.T.	3
MWP 204	Process Integration and Energy Efficiency	Prof. Ir. Erna Yuliwati, M.T., Ph.D., IPU., ASEAN.Eng.	3
MWP 205	System Modelling and Optimization	Eko Ariyanto, S.T., M.Chem.Eng, Ph.D., IPM.	3
MWP 206	Electrochemical Reaction Engineering	Dian Kharismadewi, S.T., M.T., Ph.D.	3
MWP 207	Natural Gas and Oil Processing Technology	Prof. Dr. Ir. Kgs. Ahmad Roni, S.T., M.T., IPM., ASEAN.Eng.	3

Code	Subjects	Lecturer's Coordinator	Credits
<b>Elective Courses (Semester 3)</b>			
MWP 302	Pinch Technology	Prof. Ir. Erna Yuliwati, M.T., Ph.D., IPU., ASEAN.Eng.	3
MWP 303	Energy Efficiency Technology for Drying Process	Eko Ariyanto, S.T., M.Chem.Eng., Ph.D., IPM.	3
MWP 304	Renewable Hydrocarbon Engineering	Prof. Dr. Ir. Kgs. Ahmad Roni, S.T., M.T., IPM., ASEAN.Eng.	3
MWP 305	Advanced Bioprocess Technology	Dr. Ir. Marhaini, M.T.	3
MWP 306	Composite Technology	Dian Kharismadewi, S.T., M.T., Ph.D.	3

Graduation of the master's program must meet the lecture load of 38 credits (compulsory courses of 20 credits and elective courses of 18 credits), during the study of 3 semesters (18 months).

# Graduate's Learning Achievements According to Indonesian National Qualification Frameworks (INQF)

The diploma holder has the following competences:

<i>Attitude:</i>	<i>Knowledge:</i>
<ul style="list-style-type: none"> <li>a. <i>Devote to God Almighty and are able to demonstrate a religious attitude.</i></li> <li>b. <i>Have pride, nationalism and a sense of responsibility for the country and nation.</i></li> <li>c. <i>Have the commitment and sincerity to develop attitudes, values, and chemical engineering professional.</i></li> </ul>	<ul style="list-style-type: none"> <li>a. <i>Master and expert in the field of chemical process technology design and apply it to society.</i></li> <li>b. <i>Understand the various applications of research design in technology development.</i></li> <li>c. <i>Understand the performance evaluation theory and apply it in various fields.</i></li> </ul>
<i>General Skills:</i>	<i>Special Skills:</i>
<ul style="list-style-type: none"> <li>a. <i>Develop logical thinking, critical thinking, systematic thinking, and creative in the application of technology that reflects the value of humanities according to their fields of expertise in order to produce prototypes, work design, art products, or value-added technological innovations.</i></li> <li>b. <i>Make decisions in the context of solving the technological application problems that concern to and apply the humanities values based on experimental studies of information and data.</i></li> <li>c. <i>Save, secure, and rediscover prototype data, works design or art products in order to guarantee the validity and prevent plagiarism.</i></li> </ul>	<ul style="list-style-type: none"> <li>a. <i>Develop basic technical material with problem that exist in the industry and refer to 4.0 in the process of realization.</i></li> <li>b. <i>Develop research into chemical and scientific chemistry with the selection of appropriate research methods and benefit the industry and society in scientific development based on applicable research ethics.</i></li> <li>c. <i>Evaluate the performance of engineering staff in the process of application of tools and chemicals technology.</i></li> </ul>

## Graduate Profiles



Until now, the Chemical Engineering graduate program has produced qualified and successful graduates in various fields of profession, such as:

- ✓ Lecturer
- ✓ Researcher
- ✓ Consultant/Expert
- ✓ Industry Practitioner
- ✓ Manager
- ✓ Bureaucrat

Armed with the knowledge and experience provided during learning, graduates are expected to be able to become leaders who excel and have good personalities, are creative-innovative, and are adaptive to global developments.



# Room Facilities



# Laboratory Equipments



**Atomic Adsorption Spectrophotometer**



**UV-Vis Spectrophotometer**



**Gas Chromatography**



**Pressure Steam Sterilizer**



**High-Performance Liquid Chromatography**



**Vacuum Evaporator**



**Calorimeter**



**Thermal Cycler**



**Mini Centrifuge**

Oven, Drying Oven, Furnace, Water-Oil Heating Bath, High-speed centrifuge, Fume Hood, Heater, Stirrer, Rotary Stirrer, Balance, Microscope, Incubator, Refrigerator/Freezer, Distillation set, Extraction set, polarimeter, & many others common laboratory equipments are available.

# Research Fields/Interest



**Prof. Dr. Ir. Kiagus Ahmad Roni, S.T., M.T., IPM., ASEAN.Eng.**

Research interests: renewable energy (biofuel)



**Prof. Ir. Erna Yuliwati, M.T., Ph.D., IPU., ASEAN.Eng.**

Research interests: membrane technology, wastewater treatment, simulation and optimization process



**Eko Ariyanto, S.T., M.Chem.Eng., Ph.D.**

Research interests: struvite synthesis, crystallization, leaching



**Dr. Ir. Eka Sri Yusmartini, M.T., IPM.**

Research interests: remediation, solid waste treatment, nanoparticle/ nanocomposite synthesis, adsorption process



**Dr. Ir. Elfidiah, M.T.**

Research interests: corrosion inhibitor and prevention



**Dr. Mardwita, S.T., M.T.**

Research interests: advanced materials, catalysts-catalysis, energy



**Dian Kharismadewi, S.T., M.T., Ph.D.**

Research interests: nanoparticle, carbon-metal oxide composite material, adsorption process, photocatalysis



**Sri Martini, S.T., M.T., Ph.D.**

Research interests: wastewater treatment, membrane technology, biosorption

# Research and Community Empowerment **Activities**

**Treating Wastewater from Jumputan and Eco Print Home Industries using Ultrafiltration Membranes**



**Local Culture:  
JUMPUTAN**



**Training on the Application of Natural Dyes to Jumputan (Eco Print) to Support Green Environment**

# Pyrolysis of Plastic Waste to Synthetic Fuels



## MESIN PIROLISIS MENGOLAH SAMPAH PLASTIK MENJADI

**Pyrolysis?**  
Thermolisis adalah proses kimia dengan pemanasan tanpa oksigen, dimana material mengalami pemecahan menjadi fase gas.

**Apakah ini inovasi?**  
Mesin yang kami kembangkan merupakan inovasi low-cost yang mana mudah dioperasikan oleh publik secara luas.

**Keuntungan**  
Mengubah sampah plastik menjadi BBM ini menggunakan teknologi kering dengan hasil akhirnya adalah BBM berupa 3 bentuk, gas propana serta residu karbon hitam. Sampal kita sudah mempunyai 12 prototipe mesin pirolisis.

**Prototipe Get Plastic Machine**

GPM 01	GPM 02	GPM 03	GPM 04
GPM 05	GPM 06	GPM 07	GPM 08
GPM 09	GPM 10	GPM 11	GPM 12

**7 Jenis Plastik**

- PEY/PETE (Polietilena Terapan)
- HDPE (High Density Polyethylene)
- PVC (Polyvinyl Chloride)
- LDPE (Low Density Polyethylene)
- Polypropylene

**Hasil dan Pemanfaatan**

- Mobil
- Motor
- Keran
- Air Pemanasan
- Gas
- Kompor
- Gas Propana



## Admission Requirements

### Required documents (in English):

- ✓ Fill out the forms by using the online application system and upload a passport-sized photo in the online application.
- ✓ A bachelor certificate and transcript from an accredited higher education institution.
- ✓ A Family Relationship or Birth certificate issued by the Government of the applicant's country.
- ✓ Passport with a validity period of more than one year.
- ✓ Certificate language proficiency test (TOEFL) with minimum score of 450.
- ✓ Recommendation letters must include the departments contact number & name of professors from the previous university.
- ✓ Registration fee 500,000 IDR.
- ✓ A passport-sized photo (color).

## Admission Schedule

### Odd Semester (September – February)

Online application: March - June

Submission of documents: March - June

Payment of application fee: March - June

Result announcement: July

Payment of tuition fees: July - August

Semester begin: September

### Even Semester (March – August)

Online application: September - December

Submission of documents: September - December

Payment of application fee: September - December

Result announcement: January

Payment of tuition fees: January - February

Semester begin: March

## Course Fees

No.	Items	Fees
1	Bridging program / month x 6 month	18,000,000 IDR
2	Tuition semester 1	10,500,000 IDR
3	Tuition semester 2	8,500,000 IDR
4	Tuition semester 3	8,500,000 IDR
5	Research + Article publication	12,000,000 IDR
6	Judicium	400,000 IDR
7	Library + Alumni donation	1,000,000 IDR
	<b>Total Course Fees</b>	<b>58,900,000 IDR</b>
8	Tuition per semester 5~8 (extention)	8,500,000 IDR

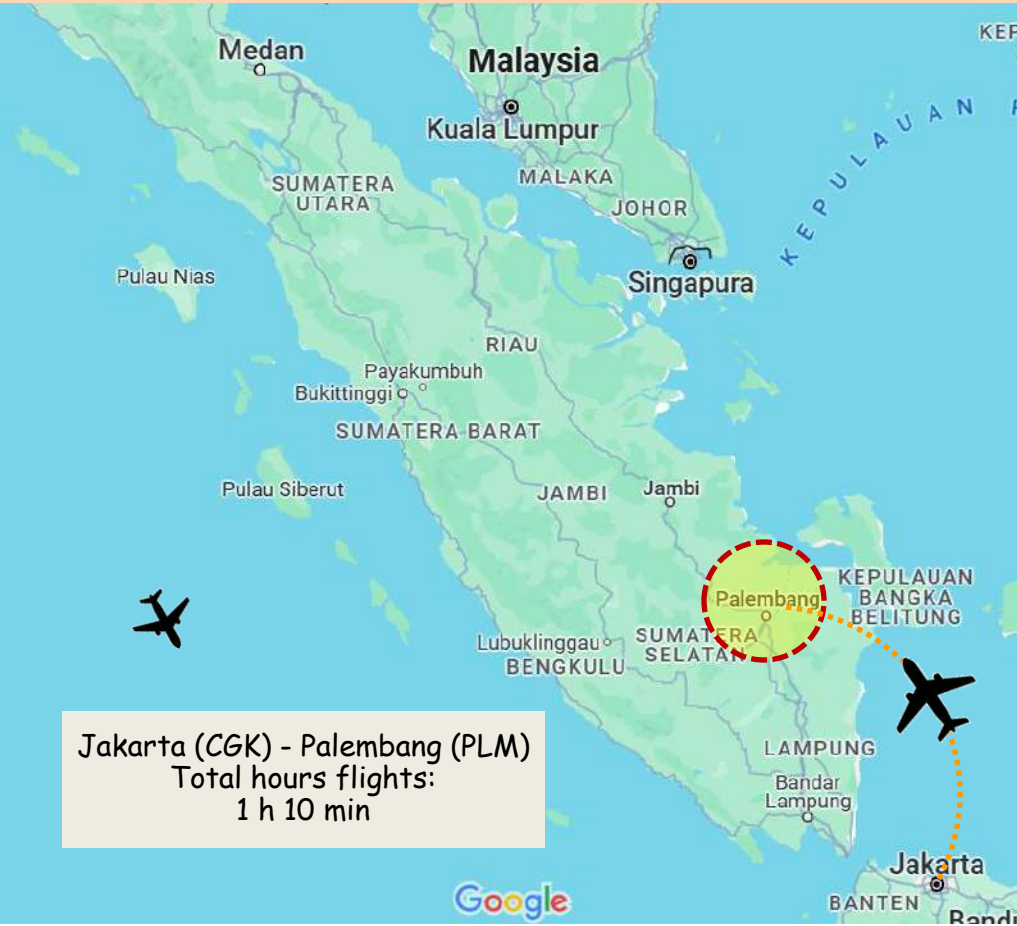
The tuition fees are stipulated in Rector decree No. 116/B-2/KPTS/UMP/V/2017.

## Living Costs (Estimation)

No.	Items	Fees
1	Accommodation (Hostel), 24 months x 1,300,000 IDR	31,200,000 IDR
2	Meals, 365 days x 2 years x 60,000 IDR	43,800,000 IDR
3	Transportation, 24 months x 500,000 IDR	12,000,000 IDR
4	Health Insurance, 24 months x 300,000 IDR	7,200,000 IDR
	<b>Total Course Fees</b>	<b>94,200,000 IDR</b>

**Total Course fee + Living costs = 153,100,000 IDR (Estimated for 2 years).**

# Palembang City and Universitas Muhammadiyah Palembang



Jakarta (CGK) - Palembang (PLM)  
Total hours flights:  
1 h 10 min





## Traditional wedding customs and ceremony



## Palembang Icon and Cultures

Ampera Bridge



Fabrics: Songket & Jemputan; Foods: Pempek, Kemplang tunu, & Pindang Ikan



# Tourism Attractions/Destinations



Ampera Bridge



Sultan Mahmud Badaruddin Holy Mosque



Historical Monument "Monpera"



Kuto Besak Fortress



Iwak Belido Statue



Kemaro Island



Bayt Al-Qur'an Museum



Balaputradeva Museum



Cheng Ho Mosque



Punti Kayu Forest Tourism



Siguntang Royal Tomb Park



Gelora Sriwijaya Stadium

**Welcome** to Palembang City, Indonesia and  
Universitas Muhammadiyah Palembang  
**Our Prospective Students!**



## Contact Information



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