

Deoxyribonucleic Acid (DNA)

# Faculty of Life Sciences

INTERNATIONAL  
UNIVERSITY  
LIAISON  
INDONESIA



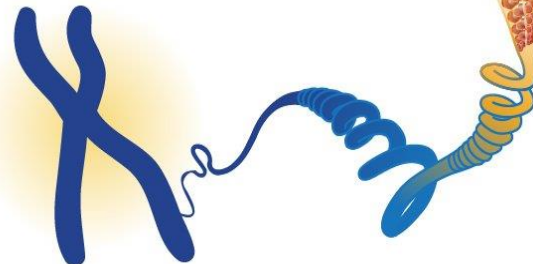
*The Spirit of Science*

Biomedical Engineering

Chemical Engineering

Food Technology

Chromosome





**Dr. Tutun Nugraha BAsc, MASc**

**Dean – Faculty of Life Sciences**

- **Bachelor Degree from Chemical Engineering, University of British Columbia (UBC), Vancouver Canada**
- **Master's and Doctoral degrees from Chemical Engineering, University of Toronto, CANADA**



Dr.-Ing. Iham Habibie, MBA  
Founder, Board of Trustees



# STUDY PROGRAMS

SK DIKTI

No.425/E/O/2014

## *Faculty of Engineering*

## *Faculty of Life Sciences*

## *Faculty of Business and Social Sciences*

**Automotive Engineering**

**Aviation Engineering / Avionics**

**Electrical Engineering**

**Industrial Engineering**

**Mechanical Engineering**

**Mechatronics Engineering**

**Computer Science**

**Biomedical Engineering**

**Chemical Engineering**

**Food Technology**

**Aviation Management**

**Hotel and Tourism  
Management**

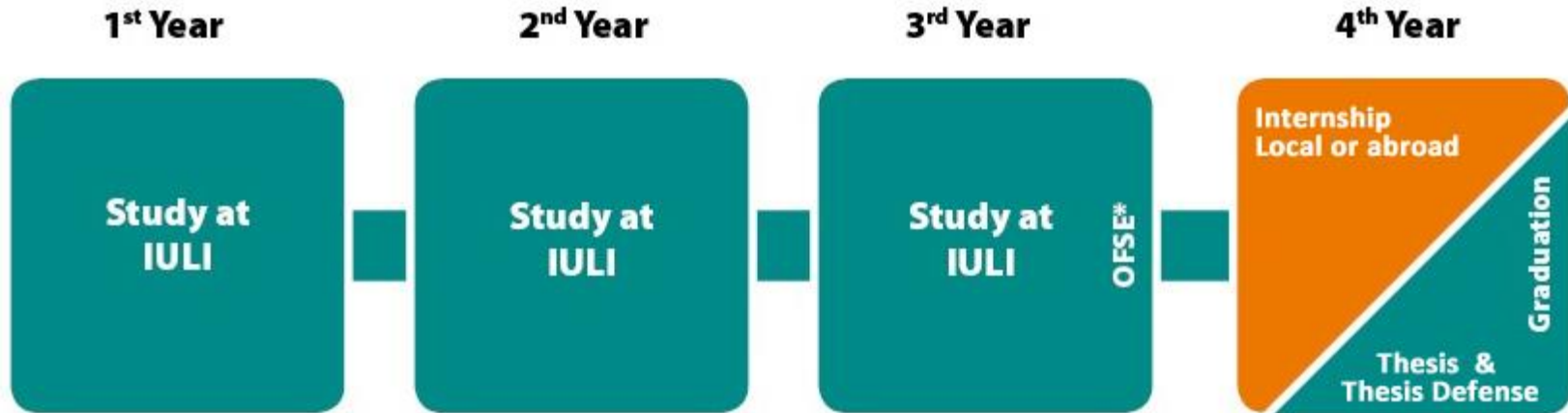
**Internasional  
Business Administration**

**International Relations**

**Management**

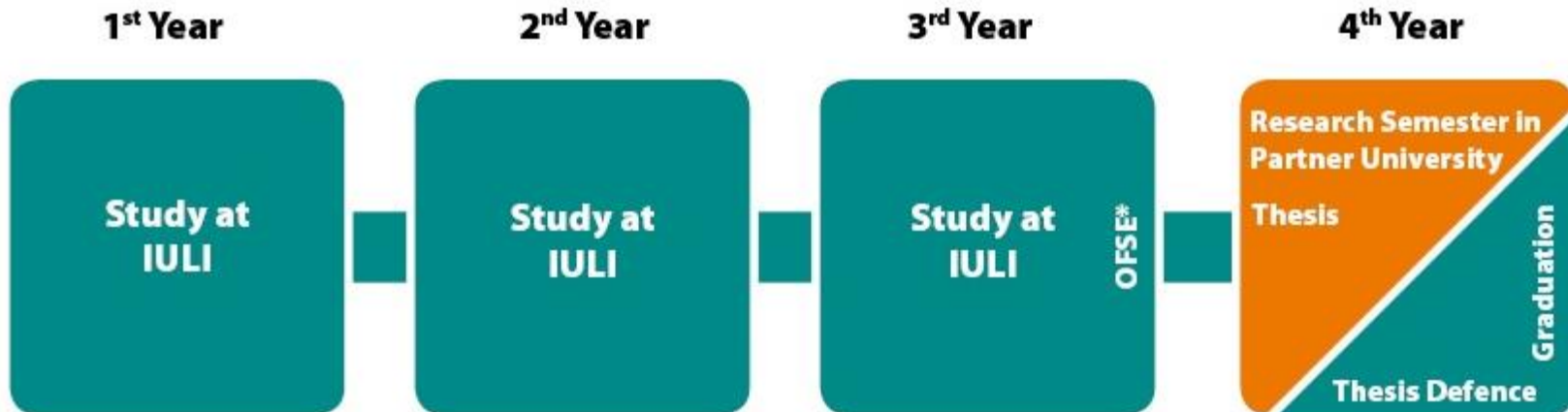
# Academic Pathways

## (i) National Program



\*OFSE: Oral Final Study Examination

## (ii) International Program



\*OFSE: Oral Final Study Examination



*Ilmenau, Thuringia,  
Germany*

● Life Science, IULI



### Semester 7:

- Research at *Technische Universität Ilmenau* (\*)
- Can be followed by internship in Germany (3-4 months)

**\* requirement for the Double Degree**

**Internship: Mostly in Germany, Strengthen Student International Experience, CV, Make sure Good German Language, Good Marks**

# WHAT IS IULI?

Representative of



European Universities Consortium – IULI



BIGT Bremerhaven –  
Germany



# Faculty of Life Science

Food Technology

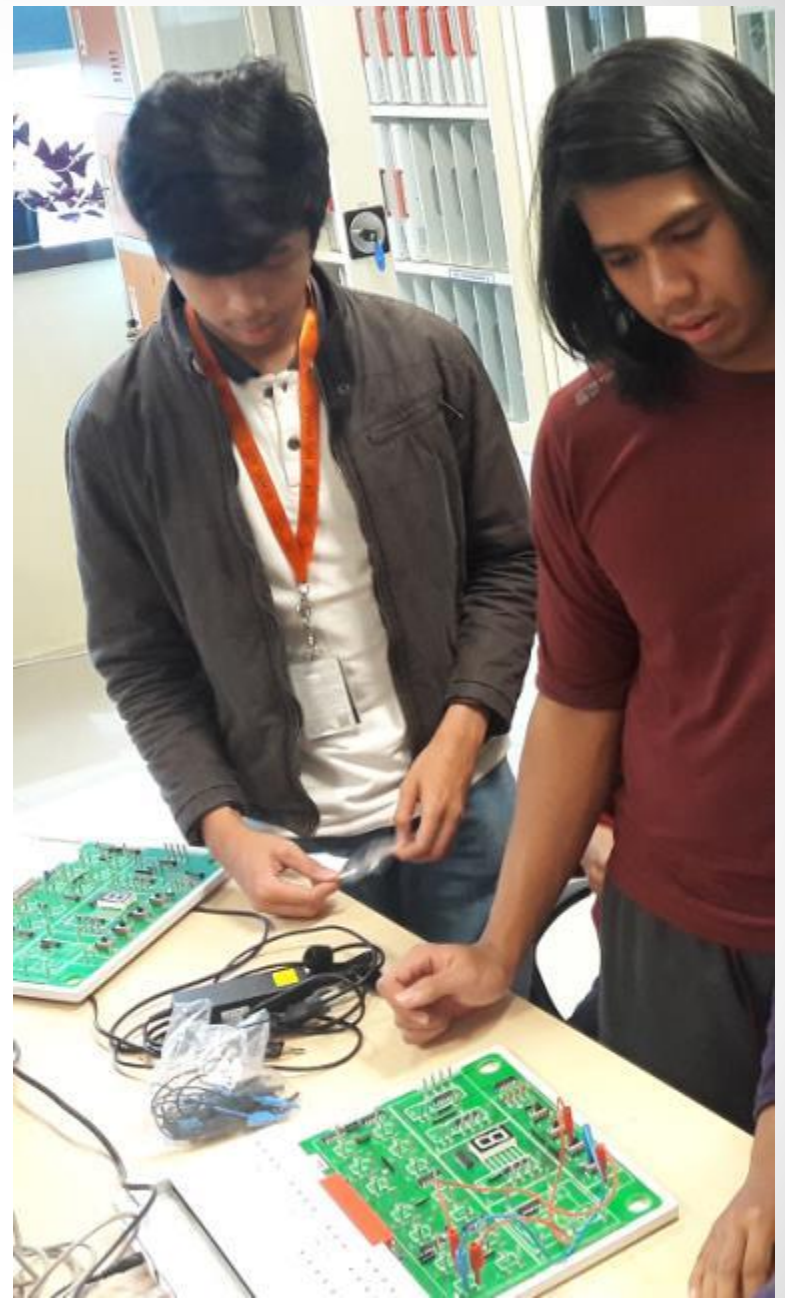
Chemical Engineering

Biomedical Engineering



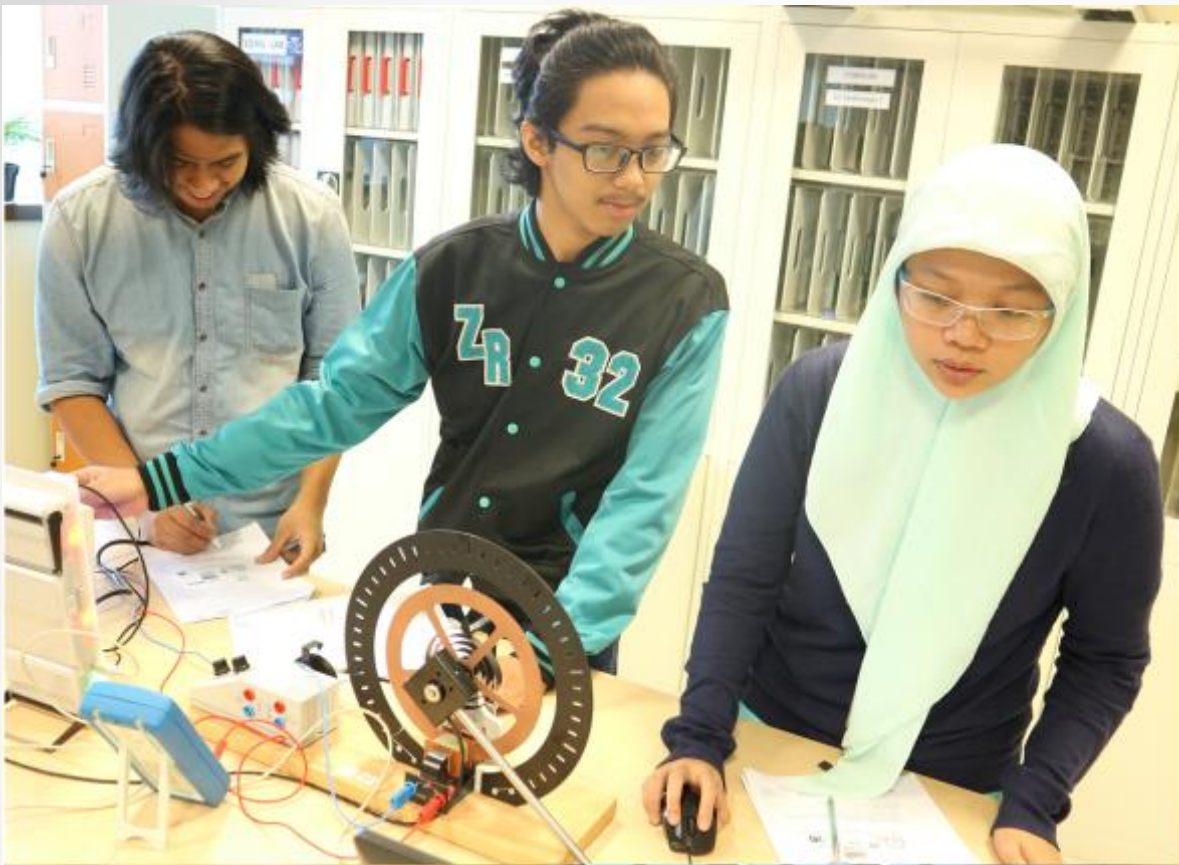






**Electronics Laboratory**

# Physics Laboratory



## Faculty of Life Sciences Students also have their own sports teams (indoor soccer & basketball)

- Regular practice & Compete in tournaments



## CAMPUS LIFE



# Debat Kandidat Presiden BEM (Badan Eksekutif Mahasiswa) IULI





**Ilmenau,  
GERMANY**

**Start your Adventure  
Begin your international Career**

**Mahasiswa yang mengambil program Double Degree di TU Ilmenau (Technische Universität Ilmenau) – Semester 7 Penelitian dan Magang/Internship di perusahaan German Semester 8**





**Double degree students with German lecturer  
After German Language Class at TU Ilmenau, Germany**



**A peaceful snowy winter walk in the forest with research group and Professor at Ilmenau**







- Departure (30 Sep 2019) and Arrival of Life Sciences Students in Germany
- Batch 2019-2020



Nov-Dec 2017

- Dr. Stephan Lau (Biomedical Engineering, TU Ilmenau)



## Flying Faculty and Guest Lectures from Europe

- Dr. Joachim Wink (Head of Microbial Strain Collection at the Helmholtz Center for Infection Research, Braunschweig, Germany)

Prof. Marko Virta (Dept. Of Microbiology, University of Helsinki, March 2018)



Oct-Nov 2018

Prof. Dr. rer. nat. Peter Scharff – Rector of TU Ilmenau, gave a short Lecture about research to the students of the Faculty of Life Sciences (*Flying Faculty, Nov 2016*)



## Prof. Dr.-Ing. habil. Jens Haueisen

Institute Director and Head of Biomedical Engineering Group, TU Ilmenau  
*(Curriculum Audit, Nov 2015)*



**Meita R. Nurmala (Biomedical Engineering), at the Final of *Abang None Jakara Selatan 2019* Pageant**



**Chemical Engineering Student, Fariz Alexander and his Basketball team win 2<sup>nd</sup> Place in Quezon City, Philippines 27 April to 4 May 2019**

## IULI Students organize Blood Drive



# Faculty of Life Science

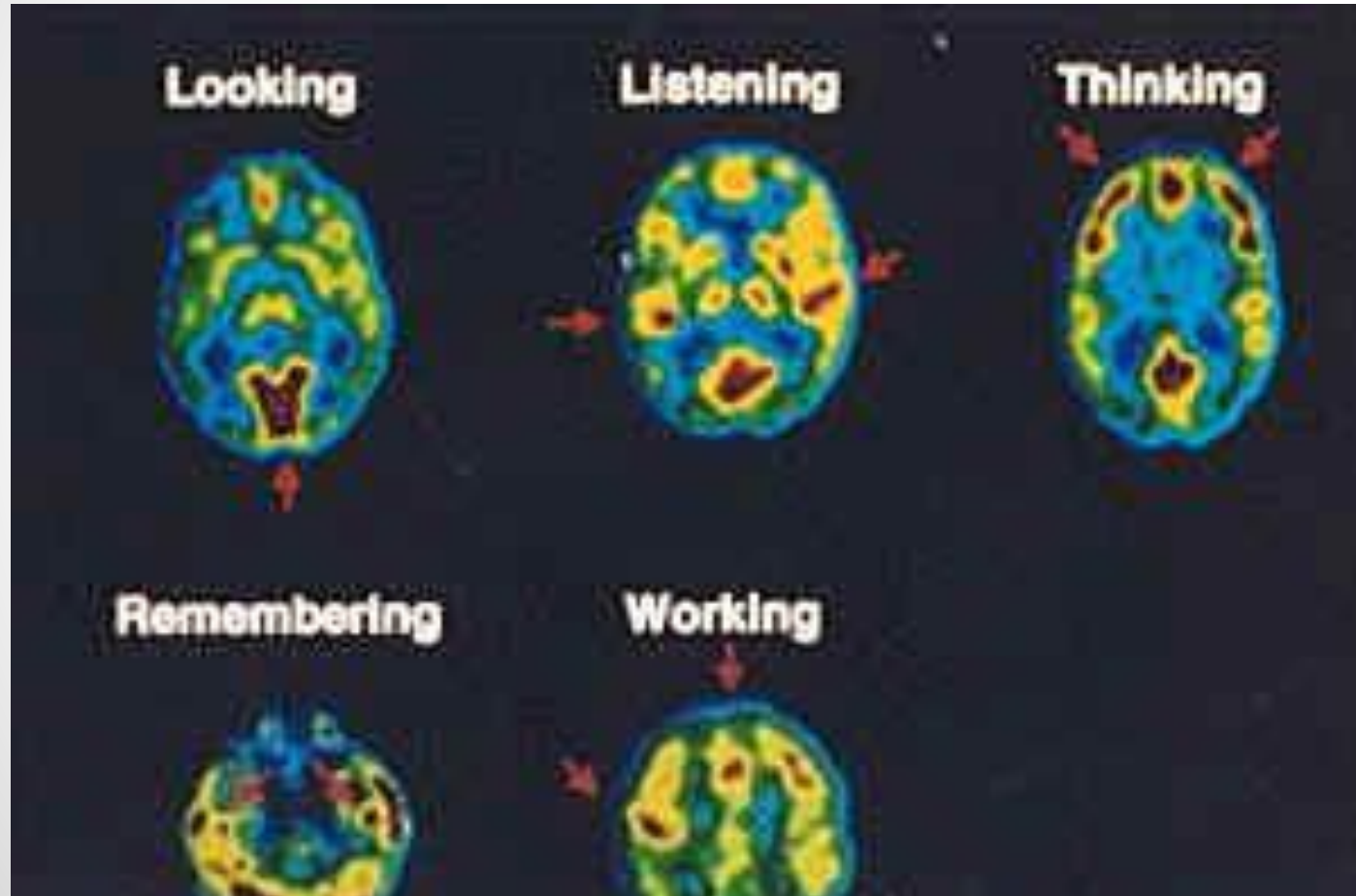
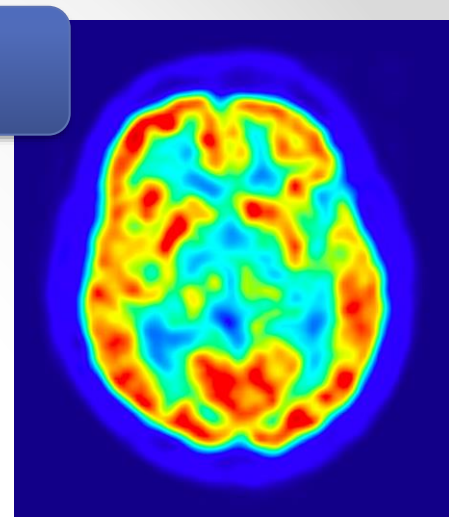
Biomedical Engineering

Chemical Engineering

Food Technology

## IMAGING and STUDY OF BRAIN ACTIVITIES

Such Mapping or imaging requires highly sophisticated electronic devices designed by **biomedical Engineers**



- Requires both the knowledge of human body and its functions

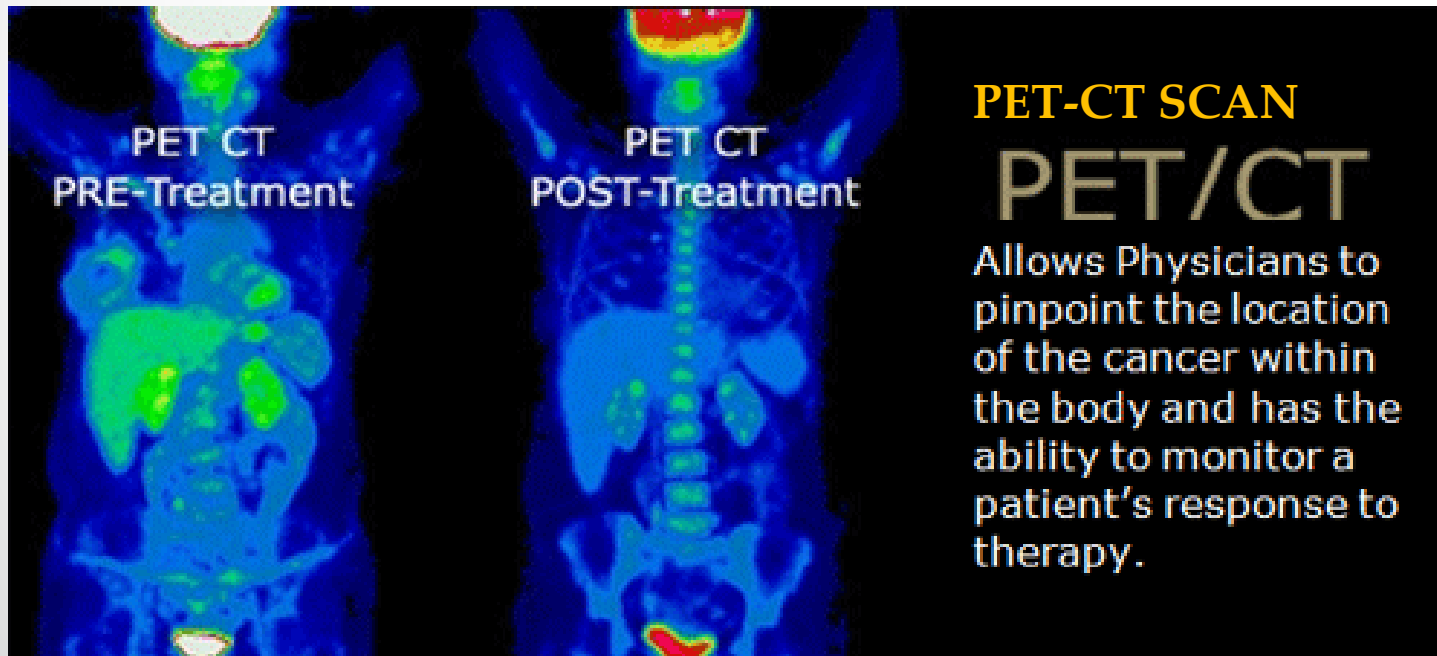
**as well as**

- various latest technology in Math, physics, Chemistry, Electronics and Biology to design



A **CT scan**, also called **X-ray computed tomography** (X-ray CT) or computerized axial tomography scan (CAT scan), makes use of computer-processed combinations of many X-ray images taken from different angles to produce cross-sectional (tomographic) images (virtual 'slices') of specific areas of a scanned object, allowing the user to see inside the object without cutting.

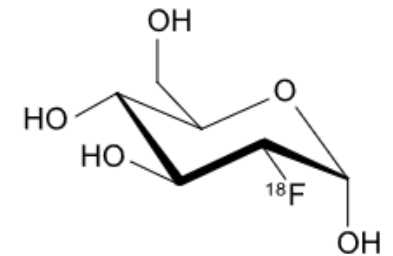
A **PET scan** uses a very small amount of **radioactive** drug to show how body tissues are working eg. **FDG (fluoro-deoxyglucose), radioactive Iodine-123**



### PET-CT SCAN

## PET/CT

Allows Physicians to pinpoint the location of the cancer within the body and has the ability to monitor a patient's response to therapy.



# PET CT SCAN



# Biomedical Engineering

X-Ray Devices



Non-Mercury (Hg)  
Blood Pressure Monitor



ROBOTICS



## SPORTS MEDICINE

Improve performance, Prevent Injuries ● 27

# Remote Doctors – Long Distance Hospital

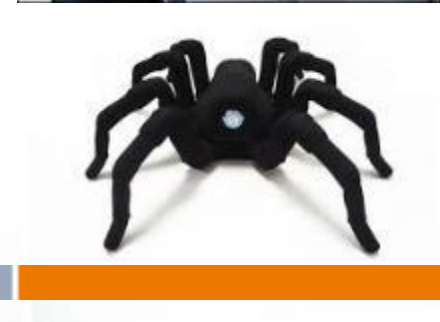
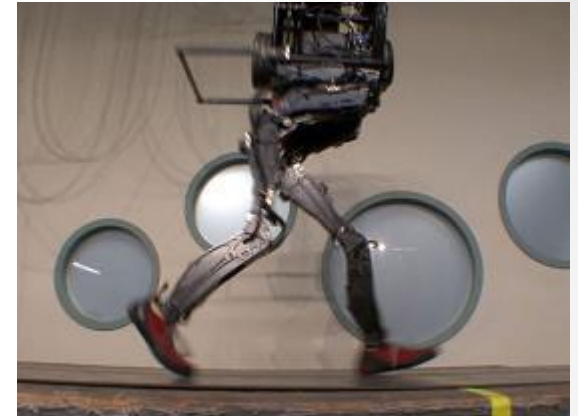


Diagnoses: Malaria, Dengue Fever (DBD) detection

## Future technology: Robotics – Artificial intelligence - Android



## Prosthetics

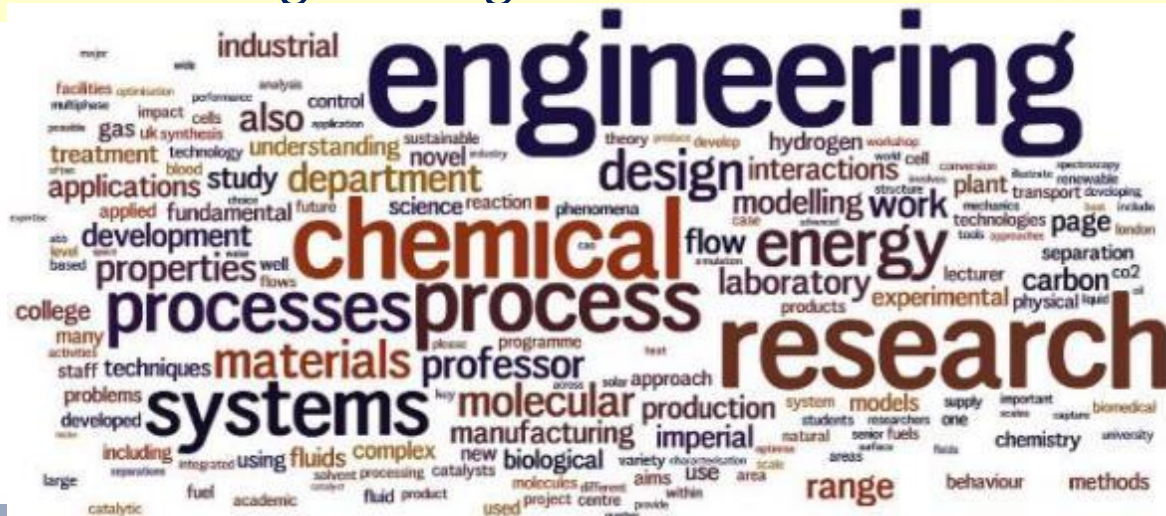


# WHAT IS CHEMICAL ENGINEERING?



Chemical engineering is a branch of engineering that applies Math, physical sciences (chemistry and physics) and life sciences (biology, microbiology and biochemistry), as well as economics, to produce, transform, transport, and properly use chemicals, materials and energy.

- Modern chemical engineers are concerned with processes that convert **raw materials** into **more useful or valuable forms**. They are also concerned with pioneering **new** valuable materials and related techniques – which are often essential to related fields such as nanotechnology, fuel cells and bioengineering.



# Chemical Engineering



- In their line of jobs chemical engineers are involved in the **conception, design, construction, and operation of research facilities or manufacturing plants**, where they could also be involved in the product or process design, scale-up, manufacturing, and labeling/packaging processes of chemical and biological products.
- These products may include **pharmaceuticals, food, cosmetics, energy related products including oil/gas and biofuels, biopolymers, petrochemicals**, as well as various products that support agricultural activities such as fertilizers, pesticides etc.





# Chemical Industries



Pharmaceuticals



Cosmetics



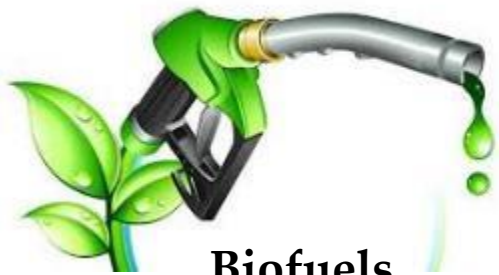
Polymers/Biopolymers



Fertilizers



Oil and Gas

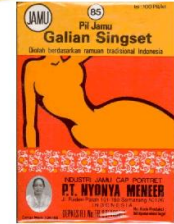


Biofuels

Jamu, Herbal



Algae for Biofuels, Food, Cosmetics, Pharmaceuticals



# Food Technology



# Process Engineer

## FOOD **PROCESSING** INDUSTRIES



Biscuits

Food Manufacturing Industries

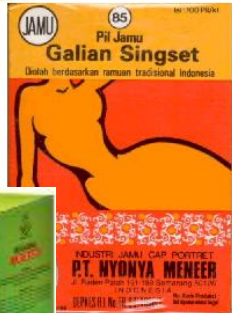


Bakery Line



Dairy Products: Milk, Cheese, Yoghurt

Beverage Industries



**mustika ratu**  
Cantik Paripurna Tradisi Indonesia  
[www.mustika-ratu.co.id](http://www.mustika-ratu.co.id)

We are producer of herbal products, natural cosmetics, health drinks, food supplement, aromatherapy products and service of spa treatment



## Tradisional Food Industry: Jamu/Herbal, Tahu, Tempe



**JAMU SARIYU  
MARTHA TILAAAR**  
meraih  
"ANUGERAH PRODUK ASLI INDONESIA"  
dari HARIAN BISNIS INDONESIA &  
Departemen Perdagangan Republik Indonesia.

"Terima kasih kepada konsumen dan seluruh pihak. Penghargaan ini memotivasi Martha Tilaar Group untuk menjadikan Produk dalam Negeri menjadi Tuan Rumah di Negeri sendiri."

**JAMU SARIYU TERBUKTI ALAMI**  
Seluruh rangkaian Jamu Sariyuu, terbuat dari bahan-bahan alami Indonesia dan diolah secara modern untuk membantu wanita cantik alami semuanya di semua siklus kehidupannya (Life Cycle Approach).  
Kapslet Wulandari, Kapslet Susut Perut, Kapslet Selangking Singset, Kapslet Perawat, Luncar Datang Baktar, Paket Habis Bersalin.

**ANUGERAH PRODUK ASLI INDONESIA**

**SARIYU**  
MARTHA TILAAAR  
0-800-1-627842  
021-4612821

Ripuk Hartono Sentosa, CEO Martha Tilaar Group saat menerima Anugerah Produk Asli Indonesia



# HACCP and GMP Halal Certification



**FOOD MICROBIOLOGIST  
(Process or Safety Engineers)**



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Dreamstime.com

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Detection of  
**Dangerous**  
Chemicals  
(Formalin, Borax)  
- Government  
(BPOM), LSM

UNIVERSITAS GADJAH MADA  
**FAKULTAS TEKNOLOGI PERTANIAN**

**SEMINAR NASIONAL TEKNOLOGI PANGAN DAN HASIL PERTANIAN 2018**  
"INOVASI TEKNOLOGI PANGAN DAN HASIL PERTANIAN UNTUK MENINGKATKAN DAYA SAING GLOBAL"

Yogyakarta, 30-31 Agustus 2018

Diselenggarakan oleh  
Perhimpunan Ahli Teknologi Pangan Cabang Yogyakarta  
Bekerja sama dengan  
Fakultas Teknologi Pertanian Universitas Gadjah Mada



**INTEGRASI KAKAO - KAMBING/PE**  
**TTP NGLANGGERAN 2017**



# LIFE SCIENCE FAIR 2018

## BACK TO NATURE

THROUGH SCIENCE AND TECHNOLOGY

- *Talkshow & Workshop*

- *Digital Poster Competition*

- *Battle of the Brains*

28.04.2018

IULI CAMPUS 2, 5TH FLOOR  
MYREPUBLIC PLAZA  
(GOP 6 BUILDING)  
THE BREEZE, BSD CITY

Presented by:



**BME**  
biomedical engineering

**CHESS**  
Chemical Engineering Students Society



International  
University  
Liaison  
Indonesia





Battle of the Brain (BoB, High School)



Student Projects



2<sup>nd</sup> IULI - LIFE SCIENCE FAIR 2018





**Once again  
Welcome to IULI Campus  
Wish you all the best & Success  
in your future career**

***Thank You***



## FASILITAS KAWASAN – THE BREEZE

“The First Lifestyle Center Mall in Indonesia”

*Luas Lahan* : 13,5 Ha  
*Danau buatan* : 2,5 ha  
*Komposisi tenant* : 60 % FnB  
40 % Lifestyle retail

INTERNATIONAL  
UNIVERSITY  
LIAISON  
INDONESIA



## Lecturers

INTERNATIONAL  
UNIVERSITY  
LIAISON  
INDONESIA



# Dr. Tutun Nugraha BAsc, MAsc Dean – Faculty of Life Science

Master's Degree & Doctoral  
Degree University of Toronto,  
CANADA

Bachelor's Degree University  
of British Columbia, CANADA



*Experienced & Knowledgeable teaching staff, in their own fields*





**Meita R. Nurmala (Biomedical Eng 2017)  
at the Final of *Abang None*  
*Jakarta Selatan* 2019 Pageant**

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# What is Life Science?

## Interdisciplinary



- Education
- Research
- Community Services

# What is Life Science?

**The life sciences comprise the fields of science that involve the scientific study of living organisms – such as microorganisms, plants, animals, and human beings – as well as related considerations like bioethics.**

**While *biology, Chemistry, Physics and Math* remain at the centerpiece of life sciences, technological advances in molecular biology and biotechnology have led to a burgeoning of specializations and interdisciplinary fields**

## *Possible Career Opportunities / Specialisms*

Medical Devices Design ( <i>Siemens</i> )	Manufacturing Engineer	Research & Development
Process Engineer	Quality Engineer	Lecturer Researcher
Medical Informatics	Healthcare Sales Representative	Healthcare Purchasing
Patent Officer	Health & Safety	Technical / Medical Writing

*Note: Further qualifications may be needed for certain positions. This list is a sample representation of positions available.*



# CAREER OPTIONS



Also:  
Academics,  
Researcher,  
Government,  
Environmental Analists

# CAREER OPTIONS

- **Food Process Engineer and food product R&D in the Industries**
- **Production process innovation**
- **Analysis and quality assurance**
- **consultancy and Marketing**
- **Private-sector food production at primary and secondary processing levels, restaurateur activities and the catering business (production, control, quality assurance management, R&D, and by-product and waste management).**
- **Public administration: agrifood, health, trade and consumption.**
- **Companies and laboratories analyzing and assessing raw material use in food production, food components, and by- and end-product foods**
- **Academics: Teaching and research**

**Sensory Analysis tests  
In food industries**



Lecturers

INTERNATIONAL  
UNIVERSITY  
LIAISON  
INDONESIA



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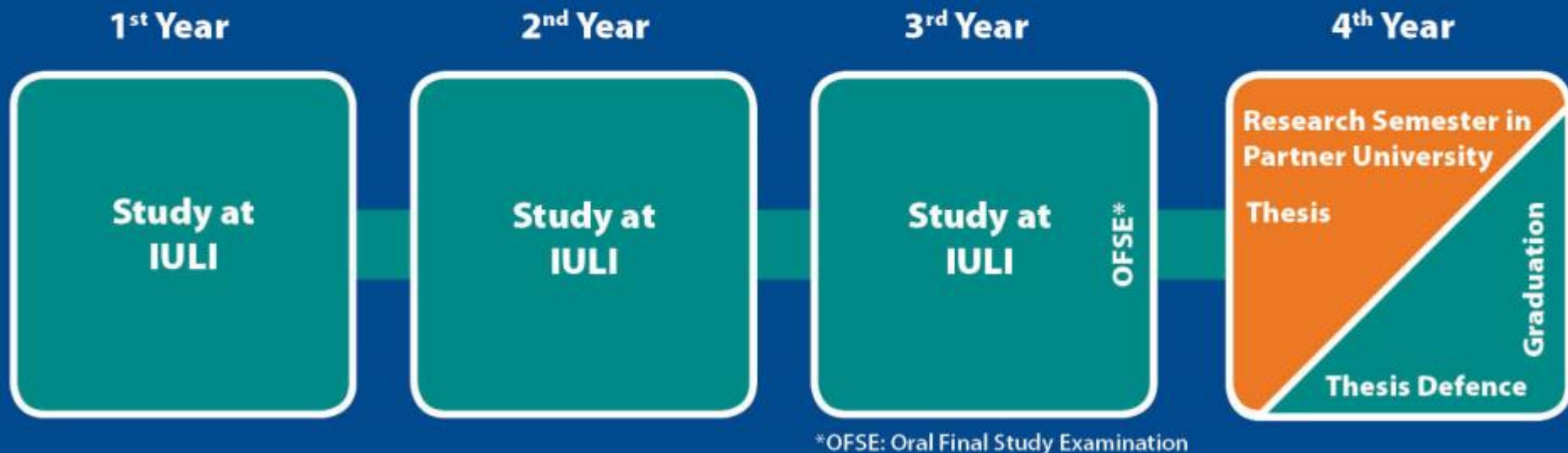


# ACADEMIC PATHWAY

INTERNATIONAL  
UNIVERSITY  
LIAISON  
INDONESIA



## Bachelor's Degree *International Program*



- Transnational education programs are adopted from IULI's partner universities.
- Duration of study: 7 academic semesters and 1 research semester abroad.
- In semester 8, optional internship of 4 months abroad.

- **Language of instruction is English**
- **German Language as extracurricular**
- **Double degree: Bachelor (BSc) + Sarjana (S1)**