

**SURAT TUGAS**

No. 026/LPPM USD/II/2020

Ketua Lembaga Penelitian dan Pengabdian Kepada Masyarakat Universitas Sanata Dharma Yogyakarta dengan ini memberikan tugas kepada:

Nama : Dr. Dewi Setyaningsih, Apt.
 Pekerjaan : Dosen
 NIP/NIDN : P.1717/ 0520017401
 Jabatan Fungsional : Lektor
 Program Studi : Farmasi
 Fakultas : Farmasi

Untuk melaksanakan kegiatan pengabdian kepada masyarakat memberikan kuliah umum "Proses Industri Kimia" di Fakultas Farmasi UNPAR pada:

Hari/Tanggal : Kamis – Jumat, 27 - 28 Februari 2020
 Waktu : 08.00 WIB - Selesai
 Tempat : Ruang 10.122 Gedung 10 UNPAR, Jl. Ciembuleuit No. 94 Bandung

Demikian Surat Tugas ini dibuat, agar yang berkepentingan melaksanakannya.

Yogyakarta, 25 Februari 2020
 Lembaga Penelitian dan Pengabdian Kepada Masyarakat USD


 Dr. rer. nat. Herry Pribawanto Suryawan
 Ketua

Tiba di	Berangkat dari
Hari/Tanggal	Hari/Tanggal
Instansi/Lembaga yang Dituju Penanggungjawab Kegiatan (.....) Jabatan.....	

Tembusan:

1. Wakil Rektor I
2. Dekan
3. Ketua Program Studi
4. Arsip





UNIVERSITAS SANATA DHARMA
LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT

SERTIFIKAT

No : 043/ LPPM USD /VII/ 2020

Lembaga Penelitian dan Pengabdian kepada Masyarakat Universitas Sanata Dharma memberikan penghargaan kepada :

Nama : *Dr. Dewi Setyaningsih, Apt.*
Jabatan : *Dosen*
Unit Organisasi : *Universitas Sanata Dharma*

Atas perannya sebagai Instruktur dalam kegiatan pengabdian kepada masyarakat Narasumber kuliah tamu Industri Farmasi pada tanggal 27 - 28 Februari 2020 di Universitas Katolik Parahiyangan

Yogyakarta, 8 Juli 2020

*Lembaga Penelitian dan Pengabdian Kepada Masyarakat
Universitas Sanata Dharma*

Dr. rer. nat. Herry Prihawanto Suryawan

KETUA





Jalan Ciumbuleuit 94 Bandung 40141. telp. : +62.22.2030918-20 ext. 100401, 100422

fax: (022)203 1110, Telp.(022) 203 2655;(022) 204 2004

Daftar Hadir Kullah - Semester Genap - 2019 / 2020

Program Studi : Teknik Kimia
Dosen Koordinator : Dr. Angela Justina
Kumalaputri,

Hari/Ruang : 08:00 - 11:00/ Kamis/ Ruang Kuliah 10121 Dosen Kelas : Prof. Dr. Ignatius Suharto, Ir., APU.

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Daftar Hadir Kuliah - Semester Genap - 2019 / 2020

: Prof. Dr. Ignatius Suharto, Ir.,
APU.

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Dosen Koordinator : Dr. Angela Justina Kumalaputri,

: Prof. Dr. Ignatius Suharto, Ir.,
APU.

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: Teknologi Industri
 : CHE182204 - 3
 : Proses Industri Kimia
 : E

Program Studi : Teknik Kimia
 Dosen Koordinator: Dr. Angela Justina Kumalaputri,

: 08:00 - 11:00/ Senin/ Ruang Kuliah 10120 Dosen Kelas : Prof. Dr. Ignatius Suharto, Ir., APU.

NPM	Nama Mahasiswa	20/01	27/01	4/2	13/2	22/2	
2015620095	ALEXANDRA ENDMAR HUKA						
2015620105	REYNARDI RISYAD RAYTAMA						
2017620015	CYNTHIA HARRIS						
2017620021	KARSTEN ABDIEL NATHANAEL JOSEPHUS	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620025	NATHANAEL EVAN PRASETYA	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620043	IRENE KUSUMA WARDHANI						
2017620055	MICHELLE TAMARA THAMRIN	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620059	FERRY ANTONIUS	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620061	FAUZAN RAMADHAN	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620071	JUVENTIA	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620073	JOSHUA	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620079	MARIA OKTAVIANI SOLOT PAYON	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620087	EVELYNE	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
2017620109	THEODORA IRISH CAHYADI						
2017620121	LUCKY YUDHianto EKA RAHMAT	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010001	CHRISTOFER ALEXANDER	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010003	JESSEN NATHANAEL	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010005	PEBBY KURNIAWAN	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010009	IJOE GERRY SEBASTIAN WIBOWO	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010011	ERIC HERMAWAN	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010013	JENNIFER SUGIANTO	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010015	PELICIA MIRANDA KUSUMAWARDHANY HARYANTO	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010017	GIOVANNO MACARIO PURNOMO	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010019	BAYU KRISNA HARTONO	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>	
2018010021	YEMICCA AMELLY	<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			
Dosen / Asisten		<i>Handwritten</i>	<i>Handwritten</i>	<i>Handwritten</i>			



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as : Teknologi Industri
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APU.

NPM	Nama Mahasiswa	20/01	27/01	6/2	13/2	28/2	
6141801027	LOURDES URSELA CARMEN	✱	✱	✱	✱	✱	
6141801031	GABRIELA SHANE HADI PRANOTO	✱	✱	✱	✱	✱	
6141801033	JENNIFER VANIA	✱	✱	✱	✱	✱	
6141801039	ANGELA DEFFIANE	✱	✱	✱	✱	✱	
6141801041	MARIA CLARISSA GAVRILA	✱	✱	✱	✱	✱	
6141801045	MELIANI TASLIM	✱	✱	✱	✱		
6141801047	ALVIN DARMAWAN SETYADI	✱	✱	✱	✱		
6141801049	GERALDO PRAJNA	✱	✱	✱	✱	✱	
6141801051	DICKY RENALDY	✱	✱	✱	✱		
6141801055	CHRISTIAN	✱	✱	✱	✱	✱	
6141801057	ALBERT HALIM JAYA	✱	✱	✱	✱		
6141801065	SAMUEL BILLY BUDYANTO	✱	✱	✱	✱		
6141801067	VANESSA AUDREYLIA	✱	✱	✱	✱	✱	
6141801071	SYLVIA CHANDRA	✱	✱	✱	✱	✱	
6141801073	RADHESA KILAT BUWANA	✱	✱	✱	✱		
6141801075	THEODORE SEBASTIAN BRATASENA	✱	✱	✱	✱	✱	
6141801077	HOSEA STEVEN MARYANTO	✱	✱	✱		✱	
6141801079	AXEL NATHANAEL RIAN TO						
6141801081	BONIFASIUS MATTHEW	✱					
6141801083	AMADEUS VINCENT WIDJAJA	✱					
6141801091	KLARA NATHANIA SEKARNINGRUM SETYANTI	✱	✱	✱	✱	✱	
6141801093	JONATHAN WIDJAJA			✱	✱	✱	
6141801095	ELISABETH PRISCILLA AYUNINGTYAS INDRAJANU	✱	✱	✱	✱	✱	
6141801097	DEA NETTA PRISCILIA CHAN	✱	✱	✱	✱	✱	
6141801099	VIERI CHRISTIAN	✱	✱	✱	✱	✱	
Dosen / Asisten		✱	✱	✱	✱		



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IS : Teknologi Industri
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: E

Rt/Ruang : 08:00 - 11:00/ Senin/ Ruang Kuliah 10120 Dosen Kelas : Prof. Dr. Ignatius Suharto, Ir.,
APU.

NPM	Nama Mahasiswa	20/01	27/01	03/2	13/1	20/2	
141801101	WILLIAM ANTHONY MARKUS	✓	✓	✓	✓	✓	
141801103	GRACIELLA LORENZ SUSANTO	✓	✓	✓	✓	✓	
141801105	ABRAHAM ZEFANYA	✓	✓	✓	✓	✓	
141801107	WIDA SLOVENIA JODY	✓	✓	✓	✓	✓	
141801109	RAYHAN FAISAL SIREGAR	✓	✓	✓	✓	✓	
141801111	MICHELLE	✓	✓	✓	✓	✓	
141801113	ANASTHASIA MILLENI ANGELINA	✓	✓	✓	✓	✓	
141801115	DENNIS MEIDIANE	✓	✓	✓	✓	✓	
141801117	YESICA CHINDRA	✓	✓	✓	✓	✓	
141801119	NICO NATHANIEL	✓	✓	✓	✓	✓	
141801123	ARIO ARDITO PUTRA	✓	✓	✓	✓	✓	
141801125	DAUD VIDI	✓	✓	✓	✓	✓	
141801127	ANDRANYSSA VIMORES MARIA RUMONDOR	✓	✓	✓	✓	✓	
141801131	DAVE	✓	✓	✓	✓	✓	
141801133	SABELLE SERENA	✓	✓	✓	✓	✓	
Dosen / Asisten		✓	✓	✓	✓	✓	

14180068 Margaretha Rayna Y.

20/01

FARMASI INDUSTRI
FAKULTAS TEKNOLOGI INDUSTRI JURUSAN TEKNIK KIMIA
UNIVERSITAS KATOLIK PARAHYANGAN

Dr. Dewi Setyaningsih, M.Sc., Apt
 Fakultas Farmasi Universitas Sanata Dharma
 dewi@usd.ac.id

Integrating academic excellence and humanistic values

Content

- Faculty of Pharmacy SD
- Pharmacist-Pharmacy
- History: thalidomide, contaminant in vaccines
- Processes Flow Diagram:
 - ▣ Manufacturing (tablet, semi liquid, liquid)
 - ▣ Water purification
- Regulation

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Universitas Sanata Dharma

Seminar, 18-19 Juni 2020 Sinta 2 Jurnal

<https://www.usd.ac.id/seminar/icpharm/>
<https://e-journal.usd.ac.id/index.php/JPSK>

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Fakultas Farmasi

AKREDITASI

23 Dec 2015 29 Jun 2016 23 March 2018
 A A B
 S1 Farmasi Profesi Apoteker S2 Farmasi
 140 stu, 3 semester 62 stu, 1 semester 36 stu, 4 semester
 14 Juni 1995 2011 2017

Fakultas Farmasi USD telah mendapatkan 2748 Apoteker + 80 (28 Apr 2018)
 Student body size: 1st 104 mahasiswa (32x337, 32x 9, Profesi S1M)

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Research line

- Social and Behavioral Pharmacy: Asthma, Pharmacy education
- Biology Pharmacy: Antibacterial agent, Immunomodulator, Ethnomedicine
- Drug discovery: computational chemistry, optimization of an analytical method
- Pharmaceutical Technology: bioavailability enhancement of lipophilic drugs, wound healing
- Pharmacology and Toxicology: smoking cessation, diabetic
- Indonesian Natural Product for Degenerative Diseases (Antioxidant and Diabetic as the Main Theme)

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Pharmacist

Chemical science Health science
 Chemical Safe, effective, and affordable use of drug Chemical and human body
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Practices

Hospital

Drug store

Community/patient care

pharma

academia/researcher

regulator

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Pharmaceutical Industry

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Pharmaceutical Industry area

discovers, develops, produces, and markets drugs

Pharma company

to cure them, vaccinate them, or alleviate the symptom

subject to a variety of laws and regulations that govern the patenting, testing, safety, efficacy and marketing of drugs

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Pharmaceutical industry

Drug production is a **specialized area**. Drugs are chemical based and **chemicals too are sensitive to changes** in weather conditions and radiation. Therefore drugs can kill very fast. Pharmaceutical industry design therefore demands specialized knowledge, for the consumer. Again the regulatory requirements for production **good understanding of how the industry is run and how best to ensure the production of efficacious and quality products** facilities within the pharmaceutical industry are being continually and incessantly tightened.

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CONCEPT

effective

Safe

Highly qualified

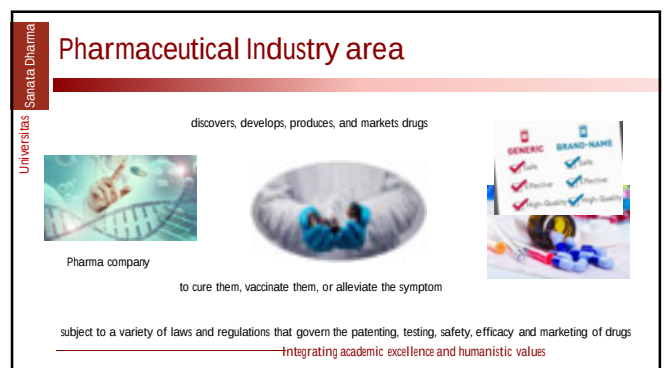
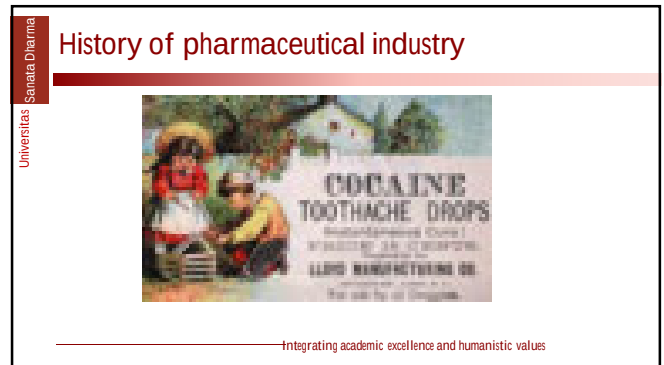
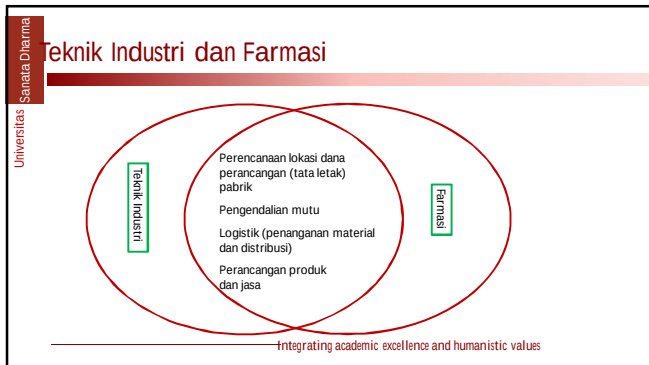
- ✓ Pembuktian melalui data komprehensif
- ✓ Regulasi yang ketat
- ✓ Pemenuhan etika pada pengujian

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Pharmaceutical Industry

The **pharmaceutical industry** discovers, develops, produces, and markets **drugs or pharmaceutical drugs** for use as **medications** to be administered (or self-administered) to patients, with the aim to **cure** them, **vaccinate** them, or **alleviate the symptoms**. Pharmaceutical companies may deal in **generic or brand medications** and **medical devices**. They are subject to a **variety of laws and regulations** that govern the **patenting, testing, safety, efficacy and marketing of drugs**

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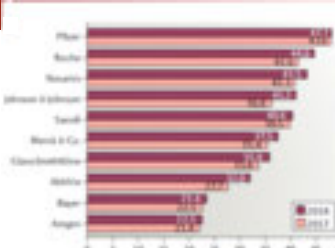


The players in Pharmaceutical Industries



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Top ten companies by sales



Pfizer:

1. Breast cancer: Ibrance (palbociclib)
2. Vaccine: pneumococcal vaccine Prevnar 13
3. Metabolic syndrome (kolesterol): Lipitor (atorvastatin)

Trend: biopharmaceutical products (produk biologi: rekombinan or peptide based drug)

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Workflow of drug discovery to development



Peter A Clark, Delivering Value To The Process Development Organization Through Workflow Integration

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Process in drug development



Identifikasi target biologis, studi pre-klinik

Studi uji klinis

formulasi

pengembangan dan scaling up

manufaktur

Regulatory approval 2-10 years

Phase 4: post marketing surveillance

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Designing pharmaceutical industries

Regulation:

- World Health Organisation (WHO) specifications, standards and requirements.
- GMP (Good Manufacturing Practise)
- CPOB (Cara Pembuatan Obat yang Baik)
- ISO
- Marketing / drug information
- Environmental regulation

Knowledge of modern trends in technologies

Health and ethical issues



Worldwide regulatory network

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Industri Farmasi

- ...\\Video\\Unpar\\Pharmaceutical production site of Gien.mp4
- ...\\Video\\Unpar\\Plant for the production of solid dosage forms Notol 2.mp4

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GMP (Good Manufacturing Practise)

system for **ensuring and controlling**

quality standar of pharmaceutical products

minimize risks that cannot be eliminated at the final product



Cara Pembuatan Obat yang Baik (CPOB) = Indonesia GMP

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CPOB

Referensi Industri Farmasi Indonesia

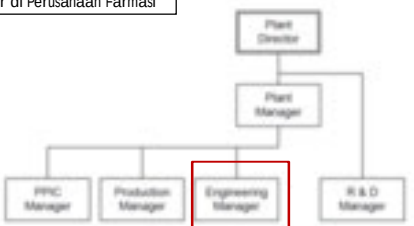
1. Sistem Mutu Industri Farmasi
2. Personalia
3. Bangunan – Fasilitas
4. Peralatan
5. Produksi
6. Cara Penyimpanan dan Pengiriman Obat yang Baik
7. Pengawasan Mutu
8. Inspeksi Diri, Audit Mutu dan Audit dan Persetujuan Pemasok
9. Keluhan dan Penarikan Produk
10. Dokumentasi
11. Kegiatan Alih Daya
12. Kualifikasi dan Validasi



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Personalia dan organisasi

Engineer di Perusahaan Farmasi



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Tanggung jawab

- Menyusun dan mengembangkan sistem dalam departemen yaitu menyusun dan mengembangkan perencanaan, pengorganisasian, penugasan, pengawasan dan dokumentasi pekerjaan.
- Menyusun dan mengembangkan sistem pemeliharaan pabrik (HVAC, Ducting)
- Bertanggung jawab terhadap ketersediaan energi, air dan pengolahan limbah pabrik, pemeliharaan peralatan
- Koordinasi dan pengawasan terhadap proyek

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Bangunan



Tata letak dan desain ruangan harus dibuat sedemikian rupa untuk **memperkecil risiko terjadi ketidakjelasan, kontaminasi silang dan kesalahan lain, serta memudahkan pembersihan, sanitasi dan perawatan** yang efektif untuk menghindari kontaminasi silang, penumpukan debu atau kotoran, dan dampak lain yang dapat menurunkan mutu obat

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Klasifikasi ruang produksi steril

Klasifikasi	Klasifikasi		Klasifikasi	
	Partikel per liter udara	Partikel per liter udara	Partikel per liter udara	Partikel per liter udara
A	≤ 0.3 µm	≤ 0.5 µm	≤ 0.3 µm	≤ 0.5 µm
B	≤ 0.3 µm	≤ 0.5 µm	≤ 0.3 µm	≤ 0.5 µm
C	≤ 0.3 µm	≤ 0.5 µm	≤ 0.3 µm	≤ 0.5 µm
D	≤ 0.3 µm	≤ 0.5 µm	≤ 0.3 µm	≤ 0.5 µm

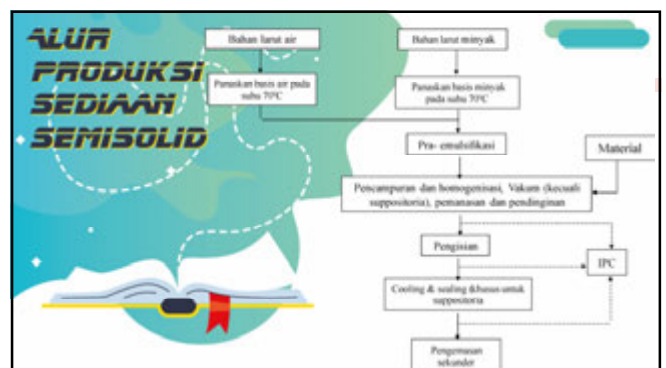
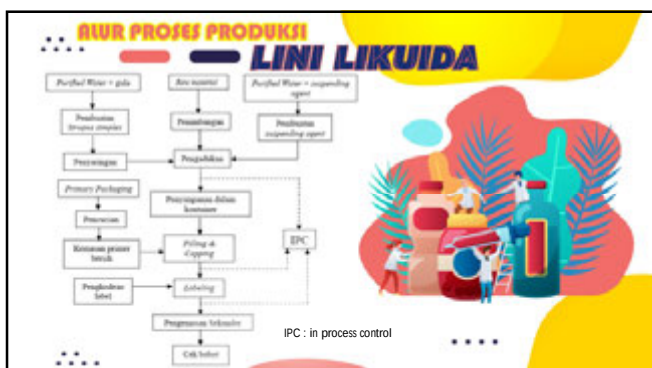
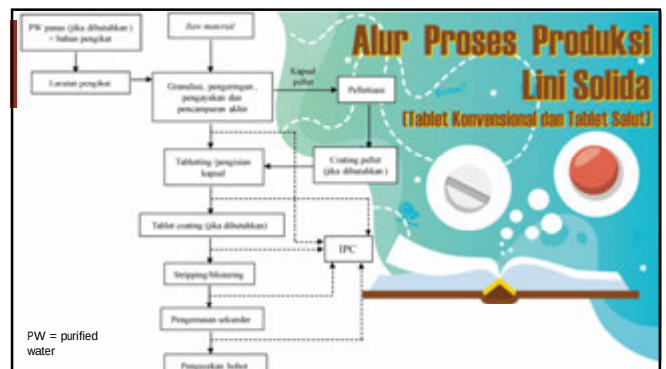


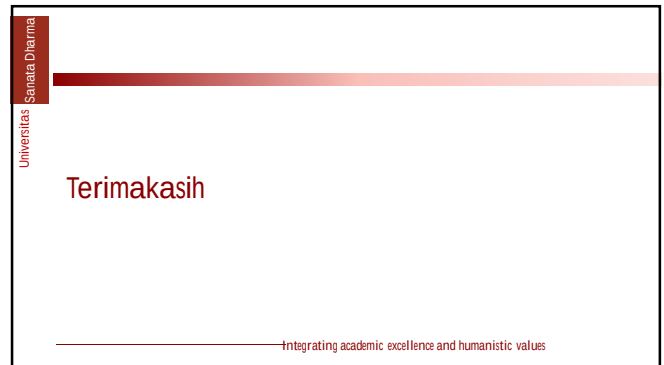
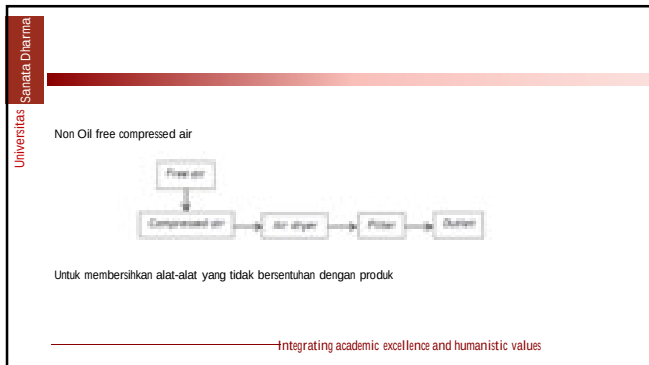
Operasional = kegiatan produksi berlangsung

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Universitas

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Universitas
Sanata Dharma



Sanata Dharma Universitas

Referensi

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- Lisa Urquhart, Nature Reviews | **Drug Discovery**, 2019, volume 18 | april 2019 | 245
- <https://pubsapp.acs.org/cen/coverstory/83/8325/8325emergence.html>
- bethtrissel.wordpress.com
- <https://www.fibre2fashion.com/industry-article/7450/improving-the-colour-fastness-of-the-selected-natural-dyes-on-cotton-part-ii>
- Hasumati Rahalkar, 2012, Historical Overview of Pharmaceutical Industry and Drug Regulatory Affairs, **Pharmaceutical Regulatory Affairs**, S11-002

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