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BIORESOURCE, PAPER AND COATINGS TECHNOLOGY PROGRAMME CURRICULUM: CURRENT AND TOWARDS MAKING 4.0

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BACKGROUND

- Introduced in 1989 as Wood, Paper and Coatings Technology (WPC)
- In 2002, the name was changed/renamed to Bioresource, Paper and Coatings Technology (BPC)
- Covers non-wood materials especially oil palm biomass and kenaf

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ACADEMIC STAFFS

- 5 professors, 3 associate professors and 5 senoir lecturers
- As a lecturer, researcher and supervisor

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SUPPORTING STAFFS

- 7 laboratory assistances
- To support the programme activities

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CORE OF THE PROGRAM

Bioresource

Wood/non-wood anatomy, lignocellulosic fibre, wood-based panel technology, lignocellulosic composite, charcoal, activated carbon and furniture

Paper

Pulp production/pulping and papermaking with flavours of environmental issues, paper recycling, pulp bleaching, chemistry of paper and additives

Coatings

Fundamentals of resins and lignocellulosic composites, paint, latex, adhesion and advance coatings technology.

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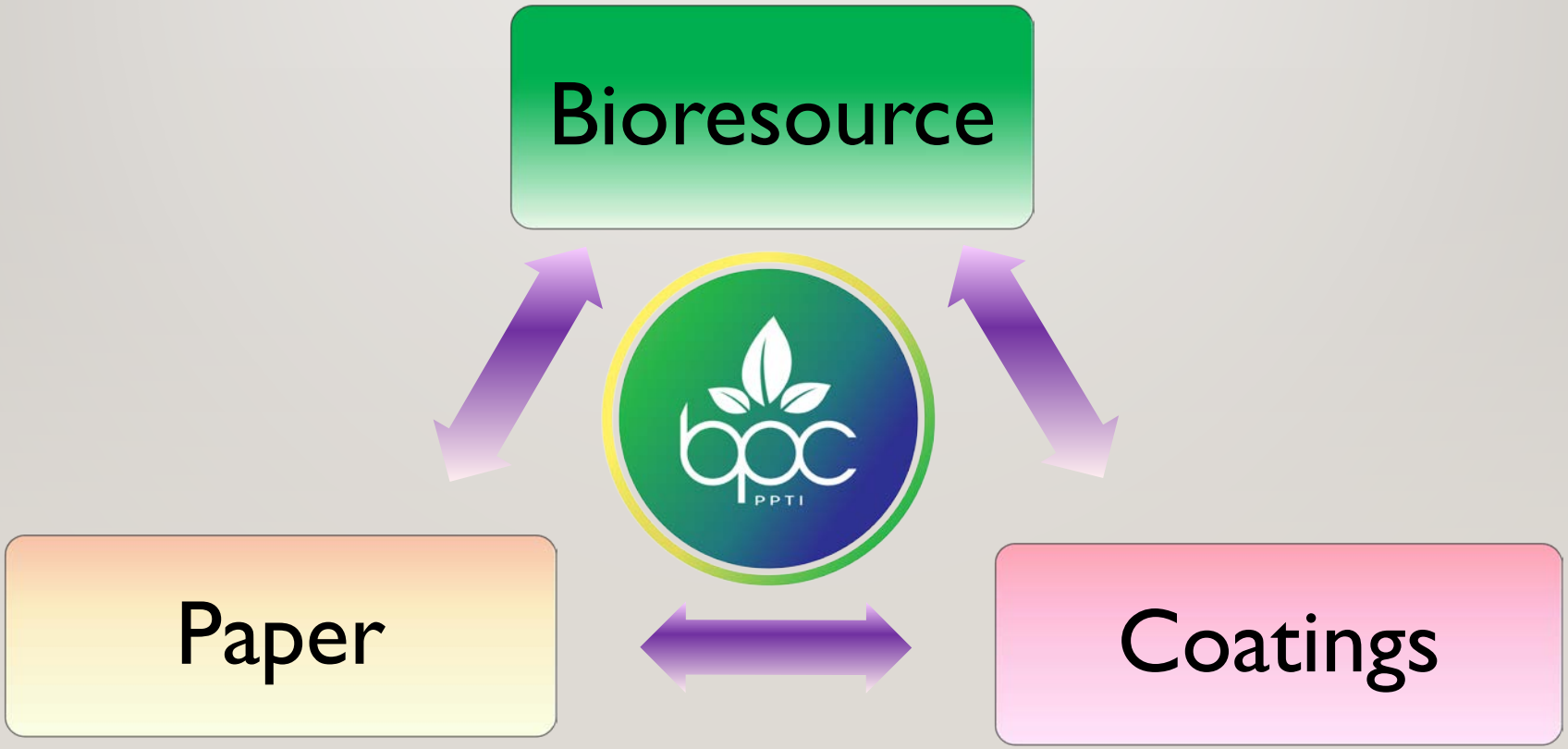
CORE OF THE PROGRAMME



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PROGRAMME PROFILE

- Year 1 - basic sciences and technology of bioresource, paper and coatings, in addition chemistry, mathemathics and unit operations.
- Year 2 and 3 - more integrated and advance courses. Including research project (2 semesters in year 3) under the supervision of academic staff
- Year 4 - industrial training for 12 weeks (Semester 1)

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DURATION OF THE PROGRAMME

- 3½ year programme (maximum 6 year)
- Lavel 100 200 300 400

- Semester 1&2 1&2 1&2 1

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PROGRAMME REQUIREMENT FOR GRADUATION

Type of Courses	Course Code Classification	Number of Units	
		Normal Program	Minor Program
School Requirements •Core Courses •Elective Courses •Minor Courses	 T E M	 72 30 0	 72 10 20
University Requirements	U	18	18
Minimum Total Unit Requirement		120	120

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DETAIL OF PROGRAMME

- Bachelor of Technology
  - Students choose several elective courses to widen their specialization area and their knowledge in industrial technology.
- Bachelor of Technology with minor
  - Students choose and complete one minor area offered by other schools.
  - Starting at the beginning of the second semester of year 1

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TYPE OF COURSES

- Core (T) – Compulsory courses identified by school that must be taken and passed
- Elective (E) – Courses identified by school are choosen to strengthen the program
- Minor (M) – Minor package offered by other schools
- University/Option (U) – Courses required to fulfill the University requirements

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INTERPRETATION OF UNIT/CREDIT

Type of Course	Definition of Unit
Theory	1 unit is equivalent to 1 contact hour per week for 13 - 14 weeks in one semester
Practical/Laboratory	1 unit is equivalent to 1.5 contact hours per week for 13 - 14 hours in one semester
Language Proficiency	1 unit is equivalent to 1.5 contact hours per week for 13 - 14 weeks in one semester
Industrial Training	1 unit is equivalent to 2 weeks of training.

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LIST OF CORE COURSES (LEVEL 100)

- Level 100 (BPC)
  - IWK100/2 – Bioresource as Industrial Raw Materials
  - IWK102/4 – Basic Bioresource Science and Technology
  - IWK101/4 – Basic Coatings Technology
  - IWK103/4 – Pulp Production and Paper Recycling
  - IWK105/4 – Bioresource Based Products
- Level 100 (School)
  - IUK191/4 – Mathematics I
  - IEK101/3 – Chemical Process Calculations

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EXAMPLE OF COURSE REGISTRATION FOR SEMESTER 1 (YEAR 1)

Semester 1				
Level	Code	Course Name	Unit	
			T	E
100	IWK 100	Bioresource as Industrial Raw Materials	2	-
	IWK 102	Basic Bioresource Science and Technology	4	-
	IUK 108	Statistics with Computer Applications	4	-
	IEK 101	Chemical Process Calculations	3	-
	IUK 107	Chemistry for Technologist	-	4
	KOT 122	Organic Chemistry I	-	4
			13	8

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LIST OF CORE COURSES (LEVEL 200)

- Level 200 (BPC)
  - IWK201/4 – Raw Materials and Coatings Chemistry
  - IWK203/4 – Stock Preparation and Papermaking
  - IWA281/2 – Coatings Technology Laboratory I
  - IWA282/2 – Bioresource Technology Laboratory I
  - IWK205/3 – Chemical Additives and Paper Properties
  - IWA283/2 – Paper Technology Laboratory I
- Level 200 (School)
  - IUK108/4 – Statistic with Computer Applications

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LIST OF CORE COURSES (LEVEL 300 & 400)

- Level 300 (BPC)
  - IWK301/3 – Coatings Process and Equipment
  - IWA382/2 – Bioresource Technology Laboratory II
  - IWA383/2 – Paper Technology Laboratory II
  - IWA313/8 – Research Project of Bioresource, Paper and Coatings Technology
  - IWK308/3 – Mechanics of Structural Materials
  - IWA381/2 – Coatings Technology Laboratory II
- Level 400 (BPC)
  - IWA404/6 – Bioresource, Paper and Coatings Technology Industrial Training

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LIST OF ELECTIVE COURSES (LEVEL 100 & 200)

- Level 100 (BPC)
  - IUK107/4 – Chemistry for Technologist
  - KOT122/4 – Organic Chemistry
  - IEK115/3 – Environment, Safety and Health Legislation
  - IUK291/4 – Mathematics II
- Level 200 (BPC)
  - IWK204/3 – Bioresource, Paper and Coatings Product Development
  - IUK208/3 – Experimental Design with Computer Applications
  - IBK212/2 – Renewable Biomass
  - IEK108/3 – Process Fluid Mechanics
  - KAT245/4 – Analytical Chemistry

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LIST OF ELECTIVE COURSES (LEVEL 300)

- Level 300 (BPC)
  - IUK303/3 – Industrial Waste Management
  - IWK304/3 – Furniture Manufacturing
  - IWK307/2 – Advanced Paper Technology- Instrumental Analysis for Pulp and Paper
  - IEK212/3 – Process Heat Transfer
  - IWK305/2 – Advanced Technology of Coatings
  - IWK306/2 – Fibre and Lignocellulosic Composite

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LIST OF UNIVERSITY/OPTION COURSES

• WUS 101/2 – Core Interprenuership	Semester 1 (year 1)
• SHE 101/2 – Ethnic Relations	Semester 2 (year 1)
• HTU 223/2 – Islamic and Asian Civilisations	Semester 1 (any year)
• LKM 400/2 – Bahasa Malaysia IV	Anytime
• LSP 300/2 – Academic English	Anytime
• HTV 201/2 – Thinking Techniques	Semester 1 (any year)
• WSU 101/2 – Sustainability: Issues, Challanges and Prospect	Semester 1 (any year)

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TOWARDS MAKING 4.0

- Based on current curriculum, the programme of Bioresource, Paper and Coatings Technology is not ready towards making 4.0
- By involving with this project, perhaps this is the first step to go for it

THANK YOU