UNIVERSITI TEKNOLOGI MARA

WTE258: LIGNOCELLULOSIC FIBER COMPOSITE

Course Name (English)	LIGNOCELLULOSIC FIBER COMPOSITE APPROVED
Course Code	WTE258
MQF Credit	3
Course Description	This is an introductory course in lignocellulosic fiber/polymer composite aimed at giving the student a broad knowledge on the type of raw materials, manufacturing processes, properties and uses of lignocellulosic fiber related products
Transferable Skills	Lecture
Teaching Methodologies	Lectures, Presentation
CLO	CLO1 Describe the principles for the production of lignocellulosic fiber/polymer composites product CLO2 Justify the manufacturing processes of lignocellulosic fibr/polymer composites. CLO3 Explain the overall concept of lignocellulosic fiber/polymer composites
Pre-Requisite Courses	No course recommendations

Topics
1. Introduction to Pulp and Paper Manufacture 1.1) 1.1 Introduction to pulp and paper 1.2) 1.2 Raw material 1.3) 1.2.1 Types of raw material 1.4) 1.2.2 Raw material selection
2. Pulping and papermaking 2.1) 2.1 Overview Of Pulping Processes 2.2) 2.1.1 Pulping processes 2.3) 2.1.2 Pulp properties and applications 2.4) 2.2 Bleaching Processes 2.5) 2.3 Introduction to Paper Technology 2.6) 2.3.1 Stock preparation 2.7) 2.3.2 Paper machine operation 2.8) 2.3.3 Paper Testing 2.9) 2.4 Paper Products 2.10) 2.5 Secondary fiber and utilization
3. Fiberboard Technology 3.1) 3.1 Type and properties of raw material 3.2) 3.2 Manufacture of fiberboard 3.3) 3.2.1 Wet process 3.4) 3.2.2 Dry process 3.5) 3.3 Properties and uses
4. Wood Plastic Composite 4.1) 4.1 Types and sources of raw material 4.2) 4.1.1 Types and properties of plastics 4.3) 4.1.2 Coupling agents 4.4) 4.2 Manufacturing Processes 4.5) 4.2.1 Melt Blending 4.6) 4.2.2 Extruded 4.7) 4.3 Properties and Uses

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Presentation	pulp and paper product	30%	CLO2
Test	test 1	15%	CLO1
Test	test 2	15%	CLO1

Reading List

Recommended Text

- **John Christopher Roberts 1991, *Paper chemistry*, Kluwer Academic Pub [ISBN: 9780216929098]**
- **Gary A. Smook 2002, *Handbook for Pulp & Paper Technologists*, Tappi Press [ISBN: 9780969462859]**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources