UNIVERSITI TEKNOLOGI MARA

EST543: Instrumental Analysis of Eco-Materials

Course Name (English)	Instrumental Analysis of Eco-Materials APPROVED
Course Code	EST543
MQF Credit	2
Course Description	The characteristics and behaviour of sustainable materials needs to be understood for development of ecologically responsible products. Knowledge on these raw materials and the finished products will enable the industry to select appropriate manufacturing process that can minimize the risk and impact on the environment. This course introduces and practises on various relevant scientific and industrial analytical methods include chromatographic techniques, spectroscopic techniques, microscopy, thermal analysis and particle sizing. This course includes the methods and instrumentation, types of data and common ways of interpreting data for Eco-products and materials.
Transferable Skills	Knowledge, practical skills, thinking-scientific skill, communication
Teaching Methodologies	Lectures, Lab Work, Field Trip, Discussion
CLO	CLO1 Describe the characteristics and behaviour of Eco-Products and materials using the fundamental instrumentation. CLO2 Perform experiments and interpret results of the major scientific and industrial instrumental analysis of characteristics and behaviour of Eco-Products and materials
Pre-Requisite Courses	No course recommendations
Reading List	**Reference Book Resources** • **1. Thomas J. Bruno,James W. Robinson,George M. Frame II,Eileen M. Skelly Frame 2023, *Undergraduate Instrumental Analysis*, CRC Press [ISBN: 9781032036915]** • **2. James W. Robinson,Eileen M. Skelly Frame,George M. Frame II 2021, *Instrumental Analytical Chemistry* [ISBN: 9781138196476]** • **3. Douglas A. Skoog,F. James Holler,Stanley R. Crouc 2017, *Principles of Instrumental Analysis*, Cengage Learning [ISBN: 9781337468039]** • **4. Micheal Ewart Brown, *Introduction to thermal analysis techniques and applications*** **Article/Paper List**: This Course does not have any article/paper resources **Other References**: This Course does not have any other resources