

Subject Description Form

Subject Code	ABCT4763
Subject Title	Polymer Laboratory
Credit Value	1
Level	4
Co-requisite	Polymer Chemistry and Nanotechnology
Objectives	The aim of is subject is provide students with practical experience and to reinforce the understanding of polymerization methods and experimental techniques for characterization and measurement of polymer properties.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. assess the controlling parameters of polymerization methods; b. apply experimental techniques and methods to characterize laboratory and commercial polymer samples; c. critically evaluate and interpret experimental results.
Subject Synopsis/ Indicative Syllabus	INDICATIVE TITLE OF EXPERIMENTS 1. The chain-growth polymerization of methyl methacrylate into a sheet 2. Test on cast poly(methyl methacrylate) sheet 3. Studies of polymers by differential scanning calorimetry (DSC) 4. Measurement of molecular mass of polystyrene by dilute solution viscometry 5. Determination of melt flow rates of polyethylene and polystyrene
Teaching/Learning Methodology	Students will work in teams. Laboratory manual containing general background and procedures of the experiments will be provided to students. They will submit comprehensive written reports after the experiments. Students will be assessed based on their written reports, performance during the practical session, and a test to assess their understanding of the underlying and operation principles of the

	experiments.						
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
			a	b	c		
	Continuous assessment	100	✓	✓	✓		
	Total	100 %					
	Student's performance will be assessed by two components: 1) Written test on different experimental skills and characterization techniques; 2) Group report to assess their ability to summarize and discuss results and work as a team.						
Student Study Effort Expected	Class contact:						
	▪ Laboratory and tutorial						21 Hrs.
	Other student study effort:						
	▪ Self study and write-up lab reports						24 Hrs.
	Total student study effort						45 Hrs.
Reading List and References	C.E. Carraher, Seymour/Carraher's Polymer Chemistry, 7th ed., Boca Raton 2008						
	W.R. Sorenson, F. Sweeny and T.W. Cambell, Preparative Methods of Polymer Chemistry, 3 rd ed., Wiley 2001						