Subject Description Form

Subject Code	ABCT4759
Subject Title	Organometallic Chemistry & Catalysis Laboratory
Credit Value	1
Level	4
Co-requisite	Organometallic Chemistry & Catalysis
Objectives	To give the students some basic training on experimental organometallic chemistry including synthesis of organometallic complexes (some of which are air- and moisture-sensitive), the characterization of these complexes using various physical methods, and study of their reactivity.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. work with air- and moisture-sensitive compounds b. carry out experimental work of organometallic chemistry independently c. plan multi-step experiments, and to deal with or seek solutions for unanticipated incidents d. demonstrate some of the principles of organometallic chemistry with experimental work e. write reasonably good scientific reports.
Subject Synopsis/ Indicative Syllabus	Experiments on preparation and characterization of ferrocene, acetylation of ferrocene, ligand substitution reactions of Mn carbonyl complex, synthesis and reactivity of η^5-cyclopentadienyl-ruthenium compounds, and synthesis of Ni complex and its application to coupling reaction.
Teaching/Learning Methodology	Students will be provided with the general procedures for the experiments, but they will have to design the set-up of the apparatus and to work out the details of the experiments. The students will be working in small groups (usually 2 or 3 students in a group); each student will be graded based not only on his/her laboratory reports, but also on his/her laboratory performance, which is monitored by the lecturer or the teaching assistants. The lecturer and teaching assistants are available for helping the students, but they will avoid giving excessive instructions to them. Laboratory safety is always an important component in the laboratory class.

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	d	e	
1. Lab performance	50	√	√	√	√		
2. Lab reports	50					√	
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Lab performance, including working attitude, lab techniques, understanding of the experiments, etc., of the student is evaluated by the combined effort of the professor in charge and the teaching assistants.

Student Study Effort Expected		
	Class contact:	
	▪ Laboratory work	21Hrs.
	Other student study effort:	
	▪ Writing laboratory reports	12Hrs.
	Total student study effort	33Hrs.

Reading List and References	
	The Organometallic Chemistry of theTransition Metals, 4th ed., 2005, by Crabtree, R. H.