University of Macau
Undergraduate Mathematical Programs

Coordinating Unit:	Department of Mathematics, Faculty of Science and Technology		
Supporting Unit(s):	Nil		
Course Code:	MATB320	Year of Study:	0.5
Course Title:	Abstract Algebra		
Compulsory/Elective:	Compulsory		
Course Prerequisites:	Nil		
Prerequisite Knowledge:	Nil		
Duration:	One semester	Credit Units:	3
Class/Laboratory Schedule:	Three hours of lecture and one hour of tutorial per week.		
Laboratory/Software Usage:	Nil		
Course Description:	This course is one of the most important courses in mathematics. In this course, the students will study some basic knowledge in abstract algebra such as: 1. Concept of group; 2. Group homomorphism and isomorphism; 3. Concept of ring; etc.		
Course Objectives:	The students will learn what is group. They will also study basic group theory, first isomorphism theorem, definition of ring, the concepts of subring.		
Learning Outcomes (LOs):	Upon completion of this course, students are expected to: 1.Be familiar with fundamental Group Theory. 2.Be able to solve problem by using Lagrange Theorem. 3.Be familiar with homomorphism and isomorphism. 4.Be familiar with first isomorphism Theorem. 5.Be familiar with fundamental Ring Theory.		
Texts & References: (* *recommended textbook*(*s*))	1. Lecture notes on Abstract Algebra , SC.Tam .		
Student Assessment:	• Assignments: 10% • Midterm examination :30% • Final examination: 60%		
Learning Outcome Assessment:	• Assignments, midterm and final examinations		

Pedagogical Methods:	☑ Lecture	☐ Service learning
	☐ Guest speakers	☐ Internship
	☐ Case study	☐ Field study
	☐ Role playing	☐ Company visits
	☐ Student presentation	☐ e-learning
	☐ Project	☐ Independent study
	☐ Simulation game	☐ Others: _____
	☑ Exercises and problems	

Major Assessment Methods: For each Major Assessment Method below, please indicate the specific pedagogical methods involved (by putting a ✓ in the relevant box(es) on the right-hand side).	Case Study	Role Playing	Student Presentation	Individual project/paper	Group project/paper	Simulation Game	Exercises & problems	Service learning	Internship	Field Study	Company visits	Written examination	Oral examination	Others (please specify)
Class Participation/ Discussion (0%)														
Assignments (10%)							✓							
Midterm Exam (30%)												✓		
Final Exam (60%)												✓		
Others *(please specify)*														
Course Web: (if any)														

Course Content: (topic outline)

Week no.	Topics	Assignment no.	LO no.
1,2	**Introduction to Abstract Algebra**		1
3,4,5	**Fundamental Group Theory.**	1	1
6,7	**Lagrange Theorem.**	2	2
8,9	**Homomorphism and isomorphism.**	3	3
10	**Midterm examination**		
11,12	**First isomorphism Theorem.**	4	4
13-14	**Fundamental Ring Theory.**	5	5
TBA	**Final Examination**		

TBA: To be arranged by the Registry

STUDENT DISABILITIES SUPPORT SERVICE

The University of Macau is committed to providing an equal opportunity in education to persons with disabilities. If you are a student with a physical, visual, hearing, speech, learning or psychological impairment(s) which substantially limit your learning and/or activities of daily living, you are encouraged to communicate with your instructors about your impairment(s) and the accommodations you need in your studies. You are also encouraged to contact the Student Disability Support Service of the Student Counselling and Development Section (SCD), which provides appropriate resources and accommodations to allow each student with a disability to have an equal opportunity in education, university life activities and services at the University of Macau. To learn more about the service, please contact SCD at scd.disability@umac.mo, or 8397 4901 or visit the following website: http://www.umac.mo/sao/scd/sds/aboutus/en/scd_mission.php