

MATH1022 INTRODUCTORY GROUP THEORY
(Semester 2, 2006-2007)

Lecturer: Robert Marsh, Room 9.18g.

Email: marsh@maths.leeds.ac.uk, **Telephone:** 0113 343 5164.

Course website <http://www.maths.leeds.ac.uk/~marsh/MATH1022-0607/main.html>

Module Timetable

Time	Room
Monday 10am-11am	Roger Stevens Lecture Theatre 25
Monday 11am-12pm	E.C. Stoner 7.70 (Joint Honours/Second Years/Electives only)
Wednesday 10am-11am	Roger Stevens Lecture Theatre 25

Tutorials: Students based in the School of Mathematics have regular tutorials arranged separately with their pure mathematics tutor.

Joint honours students, second year students and elective students should attend the tutorial on Mondays at 5-6pm. Because of a clash, the time of this tutorial will need to be changed.

All lectures and the joint honours tutorial will run during all teaching weeks (26-33 and 38-40).

Assessment

The assessment of this module will consist of:

(i) a two hour examination in May/June 2007 (worth 85% of the total module mark), on which you should answer 4 questions out of 5. Approved basic scientific calculators only will be allowed.

(ii) Five assessed question sheets (worth 15% in total, split equally) done during the module. A sixth question sheet will also be distributed, to aid revision, but will not be marked; it is recommended that you attempt this (answers will be distributed). There will also be tutorial questions, similar to the assessed ones, for discussion in tutorials.

	Contribution	Date given out	Work to be handed in
Question Sheet 1	3%	Wednesday 24th January	Friday 2nd February
Question Sheet 2	3%	Wednesday 7th February	Friday 16th February
Question Sheet 3	3%	Wednesday 21st February	Friday 2nd March
Question Sheet 4	3%	Wednesday 7th March	Friday 16th March
Question Sheet 5	3%	Wednesday 18th April	Friday 27th April
Question Sheet 6	0%	Wednesday 2nd May	

Informal Module Summary

Group theory may be regarded as an abstract study of symmetry. Thus for a typical geometrical figure, its degree of symmetry may be captured by the corresponding group, certainly how many symmetries there are, but also, precisely how they interact (the "structure" of the group). Groups play a central role in mathematics and its applications. This course treats the basic theory as far as Lagrange's theorem (the order of a subgroup divides the order of the group) and quotient groups.

Prerequisites: MATH1015 and Semester 1 of MATH1035 or equivalent.

Books

R. B. J. T. Allenby. Rings, Fields and Groups (Second Edition). Edward Arnold, 1991.

M. A. Armstrong, Groups and Symmetry. Springer-Verlag, 1988.

G. Birkhoff and S. MacLane, A Survey of Modern Algebra. Macmillan, 1996

Peter J. Cameron, Introduction to Algebra, Oxford University Press, 1998.

C. R. Jordan and D. A. Jordan, Groups. Edward Arnold, 1994.

J. F. Humphreys, A course on group theory. Oxford University Press, 1996.

Walter Ledermann and Alan J. Weir, Introduction to Group Theory (Second Edition). Addison Wesley Longman, 1996.