

MATH1022 INTRODUCTORY GROUP THEORY
(Semester 2, 2007-2008)

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Course website <http://www.maths.leeds.ac.uk/~marsh/MATH1022-0708/main.html>

Module Timetable:

	Time	Room
Lecture	Monday 9am-10am	Environment Lecture Theatre F
Tutorial	Monday 11am-12pm	E.C. Stoner SR (8.62) (Joint Honours/Second Years/Electives only)
Lecture	Wednesday 10am-11am	Roger Stevens Lecture Theatre 25

Tutorials: First year 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 Monday tutorial. This tutorial will be held on 28 January, 11 February, 25 February, 10 March and 21 April.

Assessment: The assessment of this module will consist of

(i) a two hour examination in May/June 2008 (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 23rd January	Friday 1st February
Question Sheet 2	3%	Wednesday 6th February	Friday 15th February
Question Sheet 3	3%	Wednesday 20th February	Friday 29th February
Question Sheet 4	3%	Wednesday 5th March	Friday 14th March
Question Sheet 5	3%	Wednesday 16th April	Friday 25th April
Question Sheet 6	0%	Wednesday 30th April	

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 (MATH1050 and MATH1060), 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 (Good level and coverage).

J. F. Humphreys, A course on group theory. Oxford University Press, 1996 (Good coverage but more challenging).

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