

620-629 Integrable Models

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus. On-campus
Time Commitment:	Contact Hours: 36 hours comprising 3 one-hour lectures per week. Total Time Commitment: 3 contact hours and 7 hours private study per week.
Prerequisites:	None.
Corequisites:	None.
Recommended Background Knowledge:	It is recommended that students have completed subjects second and/or third year subjects in vector analysis, complex analysis, ordinary and partial differential equations (e.g. equivalent to 620-252 [2008] Analysis and 620-331 [2008] Applied Partial Differential Equations).
Non Allowed Subjects:	None.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
Coordinator:	Dr Omar Foda
Subject Overview:	This subject studies integrable dynamical systems using basic ideas from analysis, algebraic combinatorics, representation theory, quantum field theory and algebraic geometry. The KP hierarchy of nonlinear partial differential equations is primarily used as a representative example.
Objectives:	After completing the subject students will gain: - a knowledge of integrable models leading to more advanced topics in modern mathematical physics such as conformal field theories and (mathematical aspects of) string theories; - the ability to pursue further studies in this and related areas.
Assessment:	Up to 60 pages of written assignments (60%: three assignments worth 20% each, due early, mid and late in semester), a 2 hour written examination (40%, in the examination period).
Prescribed Texts:	TBA
Recommended Texts:	TBA
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	At the completion of this subject, students should gain: - Problem-solving skills including engaging with unfamiliar problems and identifying relevant strategies; - Analytical skills including the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of an analysis; - Through interactions with other students, the ability to work in a team.
Related Majors/Minors/ Specialisations:	R05 RM Master of Science - Mathematics and Statistics