

## SUBJECT HANDBOOK ENTRY 2008 – New Generation BSc

<b>Subject Code</b>	620-3xx
<b>Title of the subject</b>	Complex Analysis
<b>Credit points</b>	12.5
<b>Coordinator</b>	Karen Baker
<b>Semester of offer</b>	1, repeat 2
<b>Prerequisites</b>	Real Analysis with Applications and one of Vector Calculus, Probability, Probability for Statistics or Multivariable & Vector Calculus
<b>Mode of delivery</b>	Lectures and practice classes
<b>Contact hours</b>	36 one-hour lectures (three per week) and up to 12 practice classes (one per week)
<b>Estimated total time commitment</b>	120 hours
<b>Description</b>	This subject deals with the topology of the complex plane; convergence of complex sequences and series; holomorphic functions, the Cauchy-Riemann equations, harmonic functions, conformal mappings and applications; contour integrals and the Cauchy Integral Theorem; singularities, Laurent series, the Residue Theorem, evaluation of integrals using contour integration; and aspects of the gamma and Riemann zeta functions
<b>Assessment</b>	Up to 50 pages of written assignments 20% (due during semester), a 3-hour written examination 80% (in the examination period).
<b>Prescribed texts</b>	Not decided
<b>Notes</b>	
<b>Subject objectives</b>	
<b>Generic skills</b>	<p>In addition to learning specific skills that will assist students in their future careers in science, they will have the opportunity to develop generic skills that will assist them in any future career path. These include</p> <ul style="list-style-type: none"> <li>• problem-solving skills: the ability to engage with unfamiliar problems and identify relevant solution strategies;</li> <li>• analytical skills: the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of analysis;</li> <li>• collaborative skills: the ability to work in a team;</li> <li>• time management skills: the ability to meet regular deadlines while balancing competing</li> </ul>

	commitments.
--	--------------

**Additional information required for processing this submission (i.e. not specifically related to the Handbook subject entry)**

1	Why is the subject being created?	This is compulsory subject for three of the four specializations of the Mathematics and Statistics major and delivers a capstone experience for those students. It replaces the mutually exclusive existing subjects [08]620221 Real and Complex Analysis and [08]620252 Analysis, leading to enhanced efficiency in teaching, and is an integral part of the redesign of the Mathematics and Statistics major for the Melbourne Model.
2	If the subject is co-taught by another department, has that department agreed to the subject creation?	Not relevant
3	If the subject is co-taught by another department, how should the EFTSU (teaching load) be distributed among departments (%)?  Indicative only. Nominated percentages are subject to review and confirmation.	Not relevant
4	Does the subject involve animals or animal tissue?  Animal Welfare Committee approval is required: <a href="http://www.research.unimelb.edu.au/animalethics/">www.research.unimelb.edu.au/animalethics/</a>	No
5	Any other information relevant to this proposal. Please specify.	
6	Name of authorized staff member completing this form  Departments are not required to submit signed hardcopies. It will be assumed that staff completing this pro forma are appropriately authorized by the Head of Department to submit the proposal.	Karen Baker
7	Date	9 July 2007