



Mathematics 445 /447

Analysis II / Honours Analysis II

(see Section 3.5C of Faculty of Science www.ucalgary.ca/pubs/calendar/current/sc-3-5.html
and Course Descriptions: <http://www.ucalgary.ca/pubs/calendar/current/course-main.html>)

Syllabus

<u>Topics</u>	<u>Number of hours</u>
Basic topology of Euclidean space	3
Functions of several variables; limits and continuity	3
Differentiability; partial derivatives and the Jacobian matrix	3
Inverse and Implicit function theorems	3
The Riemann integral in several variables; integrability and sets of measure zero	3
Fubini's theorem; remarks on the insufficiency of the Riemann integral	3
Change of variable in the Riemann integral	3
Multilinear algebra; symmetric and alternating forms	3
Vector fields and differential forms in Euclidean space	3
The exterior derivative and the Poincaré lemma	3
Integration on chains and the Stokes' theorem	3
Submanifolds of Euclidean space; differential forms on submanifolds of Euclidean space	3
Integration of forms on submanifolds of Euclidean space; Stokes' theorem	3
TOTAL HOURS	39

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