UNIVERSITY COLLEGE of the FRASER VALLEY

UPAC FORM #2 (Page 1)

COURSE IMPLEMENTATION DATE: September 2007
COURSE REVISED IMPLEMENTATION DATE:
COURSE TO BE REVIEWED: August 2011
(Four years after UPAC final approval date) (MONTH YEAR)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:

MATH 481	SHHS/MATH & STATS	1
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS

SEMINAR IN MATHEMATICS
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This seminar course will examine in greater depth a particular topic of current research interest in mathematics. Topic varies depending on student and faculty interests.

PREREQUISITES: **Permission of instructor and at least 6 credits in MATH 211 or higher. Certain topics of study may require additional prerequisites.**

COREQUISITES:

SYNONYMOUS COURSE(S)
(a) Replaces: _____ *(Course #)*
(b) Cannot take: _____ *(Course #)* for further credit.

SERVICE COURSE TO: _____ *(Department/Program)* _____ *(Department/Program)*

TOTAL HOURS PER TERM: **16**
STRUCTURE OF HOURS:

Lectures:		Hrs
Seminar:	**16**	Hrs
Laboratory:		Hrs
Field Experience:		Hrs
Student Directed Learning:		Hrs
Other (Specify):		Hrs

TRAINING DAY-BASED INSTRUCTION
LENGTH OF COURSE:
HOURS PER DAY:

MAXIMUM ENROLLMENT: **24**
EXPECTED FREQUENCY OF COURSE OFFERINGS: **By student request and department approval**

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☐ Yes	☐ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☐ Yes	☒ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☐ Yes	☒ No

AUTHORIZATION SIGNATURES:

Course Designer(s): Robin Endelman
Chairperson: Gillian Mimmack
Department Head: Gillian Mimmack
Dean: Wanda Gordon
UPAC Approval in Principle Date:
UPAC Final Approval Date: Aug. 31, 2007

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

Note: Learning objectives will vary with the course and instructor.

General Objectives:
On completion of this course, the successful student will:

1. Gain sufficient background to be able to read a research paper in the topic.
2. Be knowledgeable about sources of research papers and journals relevant to the topic.

The following topic-specific goals give sample objectives for a seminar on Lie algebras:
On completion of the course, the successful student will:

1. Know major examples of Lie algebras.
2. Understand root space decomposition of semisimple Lie algebras.
3. Be able to construct representations of Lie algebras.
4. Be able to read a paper on Lie algebras.

METHODS:

Seminars

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check:) ☐ Yes ☒ No

METHODS OF OBTAINING PLAR:

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Textbooks or other reference materials are chosen by the instructor.

An example of a text for a seminar on Lie Algebras:
Introduction to Lie Algebras, K. Erdmann and M.J. Wildon, Springer Undergraduate Mathematics Series, Springer-Verlag, 2006.

SUPPLIES / MATERIALS:

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Talk or term paper: 80%
Participation: 20% (participating in seminar discussions, writing up lecture notes including proofs of theorems and details of examples from class)

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

For a seminar in Lie Algebras:

1. Basic definitions: ideals, homomorphisms, low dimensional examples, the classical Lie algebras.
2. Adjoint map, adjoint representation.
3. Solvable, nilpotent, and simple Lie algebras: Engel's Theorem, Lie's Theorem, Cartan's Criteria.
4. Root spaces, root space decomposition of semisimple Lie algebras, Dynkin diagrams.
5. Classification of finite dimensional simple Lie algebras.
6. Further directions: Universal enveloping algebras, Kac-Moody Lie algebras.