UNIVERSITY OF THE FRASER VALLEY

OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

COURSE IMPLEMENTATION DATE:	January 2014
COURSE REVISED IMPLEMENTATION DATE:	May 2014
COURSE TO BE REVIEWED:	May 2020
(six years after UEC approval)	*(month, year)*

OFFICIAL UNDERGRADUATE 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 – see course syllabus available from instructor

BIO 425	Faculty of Science/Biology	4
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS

Introductory Medical Microbiology
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

The course focuses on the relationship between human health and microbes. The functioning of the immune system, the normal human flora, and diseases caused by microbial pathogens will be studied.

Note: Students with credit for BIO 325 cannot take BIO 425 for further credit.

PREREQUISITES: BIO 201 and 203. Note: As of May 2015, prerequisites will change to the following: BIO 309.

COREQUISITES:

PRE or COREQUISITES:

SYNONYMOUS COURSE(S):

(a) Replaces: **BIO 325**

(b) Cross-listed with:

(c) Cannot take: **BIO 325** for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: **90**

STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:	**45**	Hrs
Field experience:		Hrs
Student directed learning:		Hrs
Other (specify):		Hrs

TRAINING DAY-BASED INSTRUCTION:

Length of course:

Hours per day:

OTHER:

Maximum enrolment: **24**

Expected frequency of course offerings: Once every two years

(every semester, annually, every other year, etc.)

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

Course designer(s): **Terry Starr, Stephen Thomas**

Department Head: **Allan Arndt** Date approved: **June 4, 2013**

Campus-Wide Consultation (CWC) Date of meeting: **June 14, 2013**

Curriculum Committee chair: **David Fenske** Date approved: **September 20, 2013**

Dean/Associate VP: **Lucy Lee** Date approved: **September 20, 2013**

Undergraduate Education Committee (UEC) approval Date of meeting: **October 25, 2013**

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:

1. describe the relationship between human health and microbes.
2. explain the normal functioning of the immune system at both the molecular and cellular levels.
3. list the various mechanisms that microbes employ to circumvent or evade host defenses.
4. explain the pathogenesis of various viral and bacterial diseases found in many human populations.
5. discuss the connection between the environment and human health.
6. list the common mechanisms that pathogens use to cause death and disease in susceptible individuals.
7. apply to their daily lives the concepts linking human health and microbial interactions.

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

a) Demonstrate information competency on the various concepts covered in the course; functioning of the human immune system, strategies that microbes employ to circumvent host defenses, detecting and circumventing microbial infections, microbial mechanisms of infections.

b) Integrate the relationship between the environment, microbial growth, and human health.

c) Apply knowledge from cell biology and genetics to clarify the central relationship between microbial growth and human immunological responses.

d) Critically analyze current literature reports pertaining to diseases influenced by microbial infections.

e) Interpret biological data from scientific figures and experiments.

f) Connect the concept of immunization with outbreaks of human diseases in various world populations.

g) Lecture, small group discussions, project and oral presentations, lab exercises.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

☒ Examination(s) ☐ Portfolio assessment ☐ Interview(s)

☐ Other (specify):

☐ PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS:

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

Bauman RW, 2011, Microbiology with Diseases by Body System, Pearson

SUPPLIES / MATERIALS:

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

Midterm:	30%
Lab reports:	10%
Lab exam:	10%
Final exam:	50%

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

Lecture topics:
Microorganisms and human health
Immune system: nonspecific defenses
Immune system: humoral defense
Immune system: cell mediated defense

Course Content continued:

Generation of antibody diversity
Maturation and activation of B and T cells Immunologic disorders
Epidemiology and public health
Antimicrobial pharmacology
Human diseases caused by bacteria
Human diseases caused by viruses
Human diseases caused by fungi
Normal flora of the human body
General characteristics of viruses
Eukaryotic viruses

Labs:
1. Immunology
2. Normal flora
3. Antibiotic sensitivity
4. Food microbiology
5. Genome changes
6. Bacteriophages