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The University of Toledo

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SEP 26 '13
COLLEGE OF GRADUATE STUDIES

New Graduate Course Proposal

Contact Person: Travis Taylor, Ph.D. | Phone (XXX-XXXX): 419-383-6673

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College: Medicine | If Other:

Dept/Academic Unit: Medical Microbiology & Immunology

Alpha/Numeric Code (Subject area - number): IITP 6040/8040

Proposed title: Advanced Microbiology | Proposed Effective Term: 2014 | 20 (Spring)

Is the course cross-listed with another academic unit? No

Approval of other Academic unit (Signature and title):

Is the course offered at more than one level? ~~No~~ YES

If yes, an undergraduate course proposal form must also be submitted. If the undergraduate course is new, complete the New Undergraduate Course Proposal; if the undergraduate course is existing, submit an Undergraduate Course Modification Proposal.

Credit hours: Fixed: 1 or Variable: to

Delivery mode:	Primary	Secondary	Tertiary
Activity Type	Other		
Minimum Credit Hours	1		
Maximum Credit Hours	1		
Weekly Contact Hours	2		

Terms Offered: ☐ Fall ☒ Spring ☐ Summer | Years offered: Every Year

May the courses be repeated for credit? Yes | Maximum hours:

Are students permitted to register for more than one section during a term? No | Grading system: Normal Grading (A-F, PS/NC, PR, I)

Prerequisites (must be taken **before**): e.g., C or higher in BIOE 4500 or BIOE 5500 and C or higher in MATH 4200, etc.

None

Date Added: 9-27-13
Council Approved: 12-10-2013
To Provost: 12-20-2013

Permission: Permission from Instructor

Co-requisites (must be taken **together**):

None

Catalog Description (75 Words Maximum)

Student led discussion of recent literature supporting key concepts in the microbiology field, with an emphasis on bacteria and viruses. Discussions will focus on how current research impacts our understanding of specific pathogens.

Attach a syllabus and an electronic copy of a complete outline of the major topics covered. Click here for the template.

Course Approval

		Date
Department Curriculum Authority		9-16-13
Department Chairperson		9-16-13
College Curriculum Authority or Chair	Kandace Williams	9-18-13
College Dean		12-10-2013
Graduate Council		12-10-2013
Dean of Graduate Studies		
Office of the Provost	mm	9/20/13

For Administrative Use Only

Effective Date	
CIP Code	
Subsidy Taxonomy	
Program Code	
Instruction Level	

THE UNIVERSITY OF TOLEDO
1872

IIT GRADUATE TRACK
INFECTION, IMMUNITY & TRANSPLANTATION

Advanced Microbiology
IITP XXX (1 credit) 6040/8040

Course Director: Travis Taylor, Ph.D.
Instructors: Robert Blumenthal, Ph.D.
Jason Huntley, Ph.D.
Jyl Matson, Ph.D.
Isabel Novella Ph.D.
Travis Taylor, Ph.D.
R. Mark Wooten, Ph.D.

Class Meeting: HEB 229A
Mondays, 1:00-3:00 Once a week, start late January

Office Hours: By appointment. Contact specific instructor for availability.

Required Text: Bacterial Pathogenesis, 3rd edition. Wilson et al. (ASM Press) & see selected recommended reading for the virology section.

Grading: Presentations (50%)
Participation (50%)

Students will be evaluated on their knowledge of assigned reading and participation in group discussions. Assigned reading topics will be selected by instructor and discussed by students. Key figures and concepts will be analyzed and integrated with our current understanding.

Objectives:
1. Demonstrate knowledge of fundamental microbiological processes through discussion and presentation
2. Critically analyze and discuss primary literature
3. Evaluate scientific merit of various biological assays

Topics to be covered (Dates for 2014)

Day 1 (1/6): Orientation (All Faculty)
Syllabus, format, details of course

Day 2 (1/13): Introduction (Instructor: Isabel)
Normal flora (BP Chapter 5)
Probiotics

Day 3 (1/27): Bacterial Genetics (Instructor: Robert Blumenthal)
(BP Chapter 7)

Day 4 (2/3): Bacterial virulence I (Instructor: Jason Huntley)
Determination of virulence (BP Chapter 8)
Bacterial virulence factors (BP Chapter 9)

Day 5 (2/10): Bacterial virulence II (Instructor: Jason Huntley)
Toxins (BP Chapter 12)
Delivery of virulence factors (BP Chapter 13)

Day 6 (2/24): Bacterial virulence III (Instructor: Jyl Matson)
Regulation of virulence factors (BP Chapter 14)
Host determinants (BP Chapter 10)

Day 7 (3/10): Bacterial ecology & environmental interactions (Instructor: Jyl Matson)
Chemotaxis and motility (BP Chapter 11)
Symbiosis and social behavior (BP Chapter 11)

Day 8 (3/17): Antimicrobial approaches (Instructor: Robert Blumenthal)
Antimicrobial compounds (BP Chapter 15)
Antibiotic resistance (BP Chapter 16)

Day 9 (3/24): Bacteriology in the coming future (Instructor: R. Mark Wooten)
Emerging diseases (BP Chapter 20)
Bioterrorism (BP Chapter 20)

Day 10 (3/31): Bacterial evasion from host responses (Instructor: R. Mark Wooten)
Counteracting host responses (BP Chapter 11)

Day 11 (4/7): Viral countermeasurements to host responses (Instructor: Travis Taylor)
Interferon antagonists

Day 12 (4/14): Antiviral drugs (Instructor: Travis Taylor)
Antivirals

Drug discovery

Day 13 (4/21): Virological yin and yan (Instructor: Travis Taylor)
Gene therapy
Virus-bacteria interactions during infection

Day 14 (4/28): Environmental virology (Instructor: Isabel)
Virus ecology
Biodiversity

Day 15 (5/5): Virology in the coming future (Instructor: Isabel)
Emerging infections
Bioterrorism

Grades are due on May 6.

IITP 6040/8040 Advanced Microbiology

Students who come in at the Bachelor level register for 6000 level courses until they pass the Qualifying exam at end of 2nd year. Students who come in at MS level already register for 8000 level courses. This was originally because we only had the PhD level and developed the MS purposefully for those students who did not achieve sufficient work to warrant a PhD (didactic course work is a relatively small part of the overall requirements towards PhD). Therefore, PhD students who could not go on, at least achieved a MS with coursework they had already accomplished. This is common amongst research degrees. A second development has been that some of the MS students have done sufficiently well to move up to the PhD level and are not required to retake the same course to satisfy PhD requirements.