

GSPH Course Descriptions

December 11, 2017

FTDR 3999 FULL-TIME DISSERTATION RESEARCH Credit(s): 00.0

DOCTORAL CANDIDATES WHO HAVE COMPLETED ALL CREDIT REQUIREMENTS FOR THE DEGREE, INCLUDING ANY MINIMUM DISSERTATION REQUIREMENTS, AND ARE WORKING FULL-TIME ON THEIR DISSERTATIONS MAY REGISTER FOR THIS COURSE. WHILE THE COURSE CARRIES NO CREDITS AND NO GRADE, STUDENTS WHO ENROLL IN "FULL-TIME DISSERTATION STUDY" ARE CONSIDERED BY THE UNIVERSITY TO HAVE FULL-TIME REGISTRATION STATUS.

IDM 2001 MOLECR BIOLGY MICROBL PATHGNS Credit(s): 03.0

STUDENTS WILL DEVELOP A COMPREHENSION OF (1) BACTERIAL ANATOMY, METABOLISM, REGULATION OF GENE EXPRESSION, GENETICS, AND THE ACTION OF ANTI-MICROBIAL AGENTS AT THE MOLECULAR LEVEL; AND (2) THE RELEVANCE OF THIS KNOWLEDGE TO UNDERSTANDING MICROBIAL PATHOGENESIS AND THE HOST RESPONSE. IN ADDITION, PROCARYOTIC AND EUKARYOTIC MODEL SYSTEM OF GENE REGULATION WILL BE COMPARED TO EMPHASIZE THE CONCEPTUAL ASPECTS AND APPLICATION OF MOLECULAR BIOLOGY TO INFECTIOUS DISEASE.

(6/9/14 correction in title "Microbial" not Microbiology.)

IDM 2002 MOLECULAR VIROLOGY Credit(s): 03.0

Prerequisite(s): IDM 2001 or INTBP 2000

THE INTENT OF THIS COURSE IS TO PROVIDE A COMPREHENSIVE COVERAGE OF THE ANIMAL VIRUS FAMILIES AND A FEW SELECTED EXAMPLES OF BACTERIAL VIRUSES. THE EMPHASIS OF THE COURSE WILL BE TO PROVIDE AN IN DEPTH COVERAGE OF THE VIRAL LIFE CYCLE, INCLUDING THE FUNDAMENTAL MECHANISMS OF VIRAL REPLICATION AND GENE REGULATION. REPRESENTATIVE MEMBERS OF EACH VIRUS FAMILY WILL BE SELECTED FOR THE LECTURE MATERIAL. THERE WILL BE SUPPLEMENTAL READING ASSIGNMENTS ON ADDITIONAL VIRUSES.

[Effective spring 2017, term 2174, credit increase from 2 to 3 credits. Also, removed co-req IDM 2420.]

IDM 2003 HOST RESPONSE TO MICROBIAL INFEC Credit(s): 02.0

Prerequisite(s): IDM 2001

STUDENTS WILL DEVELOP A COMPREHENSION OF THE CONCEPTS AND KNOWLEDGE OF RESISTANCE AND IMMUNE RESPONSES OF HUMANS TO MICROBIAL INFECTION. THE ROLE OF PHAGOCYtic CELLS; COMPLEMENT; LYMPHOCYTES; THE DEVELOPMENT OF HUMORAL AND CELL MEDIATED IMMUNITY AT THE MOLECULAR, CELLULAR, AND ORGAN LEVEL; AND THE CONSEQUENCES IN CONTROLLING AND ENHANCING DISEASE ARE COVERED.

IDM 2004 VIRAL PATHOGENESIS Credit(s): 02.0

THE GOAL OF THIS COURSE IS TO INTEGRATE THE LECTURES GIVEN ON A PARTICULAR VIRUS IN THE COMPREHENSIVE VIROLOGY COURSE WITH TWO ADDITIONAL LECTURES WHICH EXPAND THE BASIC BIOLOGY OF THE VIRUS LIFE CYCLE TO THE LEVEL OF VIRUS-HOST INTERACTIONS. THE FIRST LECTURE WILL ADDRESS THE PATHOGENIC PROPERTIES OF THE VIRUS FROM THE PERSPECTIVE OF DISEASE MANIFESTATIONS, IMMUNOLOGY, AND THE NATURAL HISTORY OF INFECTION. THIS WILL BE FOLLOWED BY A SECOND LECTURE WHICH WILL ADDRESS THE MOLECULAR BASIS OF VIRAL PATHOGENESIS AND CURRENT ADVANCES IN ANTIVIRAL RESEARCH.

(For 2nd year and above students only.)

IDM 2007 PH COMMUNICABLE DISEASE PRACM Credit(s): 01.0 to 03.0

THE PRACTICUM, THROUGH STRUCTURED AND EDUCATIONALLY SUPERVISED ASSIGNMENTS AT AN APPROVED SITE WITH AN EXPERIENCED PROFESSIONAL, IS AIMED AT PROVIDING A MEANS TO IDENTIFY AND TO APPLY A VARIETY OF THEORIES AND SKILLS DISCUSSED AND DEMONSTRATED IN THE CLASSROOM TO THE REAL LIFE EXPERIENCES TO WHICH THE STUDENT IS ASSIGNED IN THE FIELD UNDER PROFESSIONAL SUPERVISION. THE ASSIGNMENTS AND CHOICE OF SITE ARE DETERMINED BY THE DIRECTOR OF THE PROGRAM AND THE PROGRAM REQUIREMENTS AND CAREER GOALS OF THE STUDENTS.

IDM 2010 PATHOGEN BIOLOGY**Credit(s): 02.0****Prerequisite(s): PUBHLT 2015 or IDM student**

THE GOAL OF THIS COURSE IS TO TEACH THE BASIC BIOLOGY AND PATHOGENESIS OF MANY OF THE MOST IMPORTANT INFECTIOUS DISEASES THAT ARE PUBLIC HEALTH CHALLENGES IN THE 21ST CENTURY. IT IS INTENDED FOR STUDENTS WITH A BACKGROUND IN BIOLOGICAL SCIENCES, AND WILL REVIEW THOSE FEATURES THAT MAKE THESE PATHOGENS SO SUCCESSFUL AS AGENTS OF DISEASE. TOPICS COVERED WILL INCLUDE: THE INTERACTION BETWEEN THE PATHOGEN AND THE HOST GENOME, THE STRATEGIES USED BY EACH PATHOGEN TO EVADE THE HOST RESPONSE, AND THE WAYS IN WHICH THE PATHOGEN DEFENDS ITSELF AGAINST TREATMENTS AND VACCINES. THE COURSE WILL BE TAUGHT USING A COMBINATION OF DIDACTIC LECTURES AND PAPER DISCUSSIONS BASED ON THE CURRENT PRIMARY RESEARCH LITERATURE. (Note: For IDM students; and students without a background in biological sciences, but who have taken the core course PUBHLT 2015, are also welcome to take the course.)

IDM 2014 FNCT GENOMCS OF MICRBL PATHGNS**Credit(s): 03.0****Prerequisite(s): IDM 2001**

FUNCTIONAL GENOMICS INVOLVES THE SYSTEMATIC STUDY OF GENES AND THEIR FUNCTION. THIS COURSE WILL INTRODUCE MANY OF THESE INNOVATIVE TECHNOLOGIES FOR THE SYSTEMATIC ANALYSIS OF GENE FUNCTION INCLUDING GENE DISCOVERY, TRANSCRIPTOME ANALYSIS, RANDOM AND TARGETED GENE DISRUPTION STRATEGIES, PROTEOMICS, METABOLOMICS, AND INTEGRATIVE SYSTEMS APPROACHES WITH A PARTICULAR EMPHASIS ON THEIR APPLICATION TO INFECTIOUS DISEASE PATHOGENS AND THEIR INTERACTION WITH THEIR HOST CELLS. WE WILL ALSO EXAMINE THE GENOMES OF WELL-STUDIED PATHOGENS AND EXPLORE HOW THESE TECHNOLOGIES HAVE BEEN USED TO STUDY THEIR BIOLOGY AND PATHOGENESIS AND THE APPLICATION OF THESE TECHNIQUES FOR DRUG AND VACCINE TARGETING AND DEVELOPMENT.

IDM 2021 SPECIAL STUDIES IN MICROBIOLOGY**Credit(s): 01.0 to 15.0**

PROPERLY QUALIFIED STUDENTS MAY UNDERTAKE SPECIAL STUDY, EXPERIENCE IN A CLINICAL LABORATORY, OR RESEARCH WITH THE APPROVAL AND UNDER THE GUIDANCE OF A MEMBER OF THE FACULTY. PART OR ALL OF SUCH STUDY MAY BE USED AS THE BASIS FOR THE ESSAY OR DISSERTATION REQUIREMENT FOR THE MASTER'S AND DOCTORAL DEGREES.

IDM 2022 SPECIAL TOPICS**Credit(s): 01.0 to 03.0**

PROPERLY QUALIFIED STUDENTS MAY UNDERTAKE SPECIAL STUDY UNDER GUIDANCE OF A FACULTY MEMBER TO ACQUIRE KNOWLEDGE AND SKILL TO USE INDEPENDENTLY A SPECIFIC LABORATORY RESEARCH TOOL, E.G., GENE CLONING, DNA SEQUENCING, CELL SORTING, OLIGONUCLEOTIDE SYNTHESIZER, POLYMERASE CHAIN REACTION, STATISTICAL ANALYSIS WITH PC.

IDM 2023 MICROBIOLOGY LABORATORY**Credit(s): 02.0**

A SERIES OF LABORATORY EXERCISES INTRODUCES THE STUDENT TO MICROBIOLOGICAL PROCEDURES, ESPECIALLY AS THEY APPLY TO VIROLOGY AND BACTERIOLOGY.

IDM 2025 MICROBIOLOGY SEMINAR**Credit(s): 01.0**

IN THIS COURSE STUDENTS ARE GOING TO PRESENT SCIENTIFIC JOURNAL ARTICLES DEALING WITH VIROLOGY, IMMUNOLOGY, MOLECULAR BIOLOGY, EPIDEMIOLOGY AND DRUG THERAPY OF VIRAL DISEASES. IN ADDITION, STUDENTS WILL PRESENT SIMILAR ASPECTS OF BACTERIAL DISEASES. IN SOME SESSIONS STUDENTS MAY BE SHOWN VIDEO PRESENTATION OF DIAGNOSIS AND CLINICAL MANAGEMENT OF A PARTICULAR VIRAL OR BACTERIAL DISEASE.

IDM 2032 HUMAN DIVERSITY & PUBLIC HEALTH**Credit(s): 02.0**

THIS COURSE WILL PROVIDE A THEORETICAL FRAMEWORK FOR DESIGNING POLICY, RESEARCH, AND PROGRAMS FOR DIVERSE POPULATIONS. OPPORTUNITIES FOR EXPANDING UNDERSTANDING AND EXAMINING ATTITUDES ABOUT HUMAN DIVERSITY WILL BE PRESENTED. COMMUNITY ORGANIZING AND MARKETING METHODS RELATED TO PROGRAM DESIGN AND RECRUITING AND SUSTAINING VOLUNTEER OR PATIENT PARTICIPATION IN PROGRAMS WILL BE A MAJOR FOCUS OF THE COURSE.

IDM 2034 CONTROL AND PREVENTN OF HIV/AIDS**Credit(s): 02.0**

THIS GRADUATE LEVEL COURSE ON HIV DISEASE PREVENTION AND CONTROL IS AIMED AT PROVIDING AN IN-DEPTH STUDY OF THE HIV DISEASE. THE COURSE GOAL IS TO PROVIDE ADVANCED KNOWLEDGE BASE OF INFORMATION ON THE COMPLEX CLINICAL, PREVENTIVE, TREATMENT, AND POLICY ISSUES ON HIV/AIDS.

IDM 2038 PREVN TRMNT CTRL GLBL INFEC DS**Credit(s): 03.0**

THIS COURSE IS AIMED TO PREPARE THE STUDENT TO DEMONSTRATE KNOWLEDGE OF THE PREVENTION, TREATMENT, AND CONTROL OF INFECTIOUS DISEASES THROUGHOUT THE WORLD. STUDENTS WILL DEVELOP KNOWLEDGE IN THE PATHOGENESIS, TREATMENT, INDIVIDUAL, AND ENVIRONMENT INTERVENTION IN PREVENTION AND SPREAD OF INFECTIOUS DISEASES.

IDM 2161 METHODS INFECTIOUS DISEAS EPID**Credit(s): 01.0****Prerequisite(s): EPIDEM 2110**

COVERS IMPORTANT TOPICS IN INFECTIOUS DISEASES EPIDEMIOLOGY, INCLUDING PUBLIC HEALTH SURVEILLANCE, EMERGING INFECTIOUS DISEASES, THE ROLE OF INFECTIOUS DISEASES IN THE ETIOLOGY OF CHRONIC DISEASES, AND EPIDEMIOLOGIC STUDY DESIGNS AND LABORATORY METHODS USED IN INFECTIOUS DISEASES RESEARCH.

IDM 2420 EXPERIMENTAL VIROLOGY**Credit(s): 02.0**

THIS COURSE IS DESIGNED FOR GRADUATE STUDENTS TRAINING IN MOLECULAR VIROLOGY RESEARCH AND IS DESIGNED TO PROVIDE A MORE IN-DEPTH STUDY OF MOLECULAR VIROLOGY THROUGH A CRITICAL ANALYSIS BY THE STUDENT OF SEMINAL RESEARCH PUBLICATIONS IN VARIOUS VIRUS SYSTEMS. PAPER DISCUSSION FORMAT.

IDM 3010 RESEARCH AND DISSERTATION PHD**Credit(s): 01.0 to 15.0**

DISSERTATION CREDITS FOR QUALIFIED DOCTORAL STUDENTS IN THE DEPARTMENT OF INFECTIOUS DISEASES AND MICROBIOLOGY.

IDM 3440 VACCINES AND IMMUNITY**Credit(s): 02.0**

Vaccines are widely regarded as one of the major contributors to increased life expectancy. The purpose of this course is to (1) explore the history of vaccines; (2) underscore the successful role of current vaccines in the management of infectious diseases; (3) present strategies for a new generation of safe and effective molecular vaccines; and (4) discuss the ethical and economic realities of vaccine use and development.

[New course for spring 2017, Term 2174]
