Stanford University

Immunology Department

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Courses offered by the Immunology Program are listed under the subject code IMMUNOL on the Stanford Bulletin's ExploreCourses web site.

Stanford Immunology is home to faculty, students, postdocs, and staff who work together to produce internationally recognized research in many areas of immunology. The long tradition of collaboration among the immunology laboratories at Stanford fosters productive interdisciplinary research, with an emphasis on the application of current approaches to problems in cellular, molecular and clinical immunology. Faculty research interests include both basic science research and bench-to-bedside research. Graduate students and postdoctoral scholars receive outstanding training through their participation in research, teaching, seminars, journal clubs, and the annual Stanford Immunology Scientific Conference.

Faculty

Director, Stanford Immunology and Chair, Executive Committee for the Immunology Program and Director, Ph.D. Program in Immunology: Olivia Martinez (Professor, Surgery, Abdominal Transplantation)

Director of Graduate Studies: Olivia Martinez (Professor, Surgery, Abdominal Transplantation)

Participating Departments and Faculty (Molecular, Cellular, Translational Immunology Track)

Biochemistry: Peter Kim (Professor), Lingyin Li (Assistant Professor)

Bioengineering: Jennifer Cochran (Professor and Chair, and by courtesy, Chemical Engineering), Stephen Quake (Professor, and Applied Physics and Physics)

Biology: Christopher O. Barnes (Assistant Professor and, by courtesy, of Structural Biology), Patricia P. Jones (Professor, Emerita)

Chemistry: Carolyn Bertozzi (Professor, Director, ChEM-H, and by courtesy, of Radiology and of Chemical and Systems Biology)

Genetics: William Greenleaf (Associate Professor, and by courtesy, Applied Physics), Leonore A. Herzenberg (Professor, Research), Karla Kirkegaard (Professor, and of Microbiology & Immunology), Stephen Montgomery (Associate Professor), Michael Snyder (Professor)

Medicine/Biomedical Informatics Research: Purvesh Khatri (Associate Professor, Research, and of Biomedical Data Science), Andrew Gentles (Assistant Professor, Research, and by courtesy, of Biomedical Data Science)

Medicine/Blood and Bone Marrow Transplantation Program: Everett Meyer (Assistant Professor), David Miklos (Associate Professor), Robert Negrin (Professor), Judith Shizuru (Professor, and of Pediatrics, Stem Cell Transplantation)

Medicine/Cardiovascular Medicine: Joseph Wu (Professor, Director, Stanford Cardiovascular Institute, and Radiology)

Medicine/Endocrinology, Gerontology, & Metabolism: Joy Wu (Assistant Professor)

Medicine/Gastroenterology and Hepatology: Aida Habtezion (Associate Professor)

Medicine/Hematology: Ravi Majeti (Professor)

Medicine/Immunology and Rheumatology: C. Garrison Fathman (Professor, Emeritus), Jorg Goronzy (Professor, Emeritus), William Robinson (Professor), Samuel Strober (Professor), Paul J. Utz (Professor), Cornelia Weyand (Professor, Emerita)

Medicine/Infectious Diseases: Catherine Blish (Associate Professor), Paul Bollyky (Assistant Professor, and of Microbiology & Immunology), Prasanna Jagannathan (Assistant Professor, and of Microbiology & Immunology), Taia T. Wang (Assistant Professor, and of Microbiology & Immunology)

Medicine/Oncology: Ash Alizadeh (Associate Professor), Gilbert Chu (Professor, and of Biochemistry), Dean Felsher (Professor, and of Pathology), Michael Khodadoust (Assistant Professor), Ronald Levy (Professor), Shoshana Levy (Professor, Research)

Medicine/Nephrology: Jonathan Maltzman (Associate Professor)

Medicine/Pulmonary and Critical Care Medicine: Mark Nicolls (Professor)

Microbiology and Immunology: Jennifer K. Bando (Assistant Professor), Yueh-Hsiu Chien (Professor), Mark M. Davis (Professor, and Director, Institute for Immunity, Transplantation and Infection), Juliana Idoyaga (Assistant Professor), Holden Maecker (Professor, Research), Hugh McDevitt (Professor, Emeritus), Denise Monack (Professor), Garry P. Nolan (Professor), David Schneider (Professor)

Molecular and Cellular Physiology: K. Christopher Garcia (Professor, and of Structural Biology), Richard S. Lewis (Professor)

Neurology and Neurological Sciences: Katrin Andreasson (Professor), May Han (Associate Professor), Lawrence Steinman (Professor, and of Pediatrics), Tony Wyss-Coray (Professor)

Neurosurgery: Michael Lim (Professor and, by courtesy, of Radiation Oncology (Radiation Therapy) , of Medicine (Oncology), of Otolaryngology - Head & Neck Surgery (OHNS) and of Neurology), Theo Palmer (Professor)

Otolaryngology/Head and Neck Surgery (ENT): Jayakar Nayak (Associate Professor, and by courtesy, Neurosurgery), John B. Sunwoo (Professor, and by courtesy, Dermatology)

Pathology: Robert Michael Angelo (Assistant Professor), Sean Bendall (Assistant Professor, Research), Scott Boyd (Associate Professor), Eugene C. Butcher (Professor), Michael Cleary (Professor), Gerald R. Crabtree (Professor, and of Developmental Biology), Edgar G. Engleman (Professor, and of Medicine/Immunology and Rheumatology), Andrew Fire (Professor, and Genetics), Stephen Galli (Professor, and of Microbiology & Immunology), Michael Howitt (Assistant Professor), Siddhartha Jaiswal (Assistant Professor), Sara Michie (Professor), Bali Pulendran (Professor, and of Microbiology & Immunology), Ansuman Satpathy (Assistant Professor), Raymond A. Sobel (Professor), Irving Weissman (Professor, and Director, Stem Cell and Regenerative Medicine Institute, and of Developmental Biology, Biology)

Pediatrics: Rosa Bacchetta (Associate Professor, Research, Stem Cell Transplantation), Alice Bertaina (Associate Professor, Stem Cell Transplantation), Agnieszka Czechowicz (Assistant Professor, Stem Cell Transplantation), David B. Lewis (Professor, Immunology and Allergy), Crystal Mackall (Professor,

Hematology/Oncology, and of Medicine), Maria Grazia Roncarolo (Professor, Stem Cell Transplantation, and of Medicine/Blood and Marrow Transplantation), Elizabeth Mellins (Professor, Human Gene Therapy), Kari Nadeau (Professor, Allergy and Clinical Immunology, and of Otolaryngology, Head & Neck Surgery)

Psychiatry and Behavioral Sciences: Emmanuel Mignot (Professor, Sleep Medicine)

Radiology: Parag Mallick (Assistant Professor, Research, and of Diagnostic Radiology)

Structural Biology: Peter Parham (Professor, and of Microbiology and Immunology), Theodore Jardetzky (Professor)

Surgery/Multi-Organ Transplantation: Charles F. Chan (Assistant Professor, Plastic Surgery and Reconstructive Surgery), Sheri Krams (Professor, Research), Olivia Martinez (Professor)

Participating Departments and Faculty (Computational and Systems Immunology)

Anesthesiology, Perioperative and Pain Medicine: Nima Aghaeepour (Assistant Professor)

Bioengineering: Stephen Quake (Professor, and Applied Physics and Physics)

Genetics: Michael Snyder (Professor), Karla Kirkegaard (Professor, and of Microbiology & Immunology)

Biomedical Data Science: Aaron Newman (Assistant Professor, and of Medicine/Biomedicine Biomedical Informatics)

Medicine/Biomedical Informatics Research: Andrew Gentles (Assistant Professor, Research, and by courtesy, of Biomedical Data Science), Purvesh Khatri (Assistant Professor, Research, and of Biomedical Data Science)

Medicine/Immunology and Rheumatology: Paul J. Utz (Professor)

Medicine/Oncology: Ash Alizadeh (Associate Professor)

Microbiology and Immunology: John Boothroyd (Professor), Mark M. Davis (Professor, and Director, Institute for Immunity, Transplantation and Infection), Holden Maecker (Professor, Research), Garry Nolan (Professor)

Pathology: Sean Bendall (Associate Professor), Scott Boyd (Associate Professor), Andrew Fire (Professor, and of Genetics)

Radiology: Parag Mallick (Assistant Professor, Research, and of Diagnostic Radiology)

Affiliate Members:

Biochemistry: Ron Davis (Professor, and of Genetics)

Health and Research Policy - Biostatistics: Robert Tibshirani (Professor, and of Statistics)

Programs

Overview

Program Overview

Students in the PhD program in Immunology may apply for an MS degree in Immunology only under special circumstances, assuming completion of appropriate requirements. Students must complete:

- At least 45 units of academic work must be in courses at or above the 100 level, 36 units of which must be at or above the 200 level

Overview

Program Overview

Doctor of Philosophy in Immunology

See Graduate Degrees for the university's basic requirements for the PhD degree.

Admissions

- Three quarters of graduate research (IMMUNOL 399 Graduate Research) consisting of rotations in the labs of three faculty members
- Participation in the Immunology journal club (IMMUNOL 305 Immunology Journal Club) and attendance at the Immunology seminar series (IMMUNOL 311 Seminar in Immunology) and the annual Stanford Immunology Scientific Conference
- First Year Rotations Presentations and General Advising Sessions, June. Students present on one of three lab rotations
- Students must submit a master's thesis paper on one of their rotations. This requirement may be waived under special circumstances

Simple Requisites

Path: Molecular, Cellular and Translational Immunology
Type
Completion Requirement

Path: Computational and Systems Immunology

Complete ALL of the following Courses:

- BIOS200 - Foundations in Experimental Biology
- IMMUNOL201 - Advanced Immunology I
- IMMUNOL202 - Advanced Immunology II
- IMMUNOL206 - Introduction to Applied Computational Tools in Immunology
- IMMUNOL207 - Essential Methods in Computational and Systems Immunology
- IMMUNOL310 - Seminars in Computational and Systems Immunology (Inactive)
- BIOMEDIN212 - Introduction to Biomedical Data Science Research Methodology
- BIOMEDIN214 - Representations and Algorithms for Computational

Students seeking admission to the Immunology PhD program typically have an undergraduate major in biological sciences. Majors from other areas are acceptable if the applicant has sufficient coursework in biology, chemistry, general physics, and mathematics (through calculus). The Immunology Graduate Program committee evaluates applications based on: grades; evidence of research experience; letters of recommendation, including letters from research sponsor(s); and commitment to a career in biomedical research.

The GRE Subject test is optional. Applicants who choose to submit a GRE score should plan on taking the GRE at least one month before the application deadline to ensure that official scores are available when applications are evaluated.

Candidates who are selected to visit Stanford and interview are notified in January. The selected applicants are invited to a Biosciences interview session.

Interested Stanford medical students are welcome to apply to the program and should also submit a formal application by the December deadline.

Prospective graduate students must apply via Stanford's online graduate application.

Financial Aid

Students admitted to the program are offered financial support for tuition, a living stipend, and health insurance coverage, and for first-year graduate students, a small allowance (tech funds). Applicants are urged to apply for independent fellowships from such entities as the National Science Foundation or the National Defense Science and Engineering Graduate Fellowships. NSF Fellowship applications are due in October of the year before enrollment in the graduate program, and only one more NSF application is permitted in the first or second year. Immunology graduate students may continue to apply for outside fellowships after matriculation. Admitted students are typically offered financial support through Stanford Graduate Fellowships, NIH traineeships, or research assistantships.

General Requirements

Molecular Biology
- IMMUNOL399 - Graduate Research
- MED255 - The Responsible Conduct of Research

Path: Molecular, Cellular and Translational Immunology

Fulfill ALL of the following requirements:

Path: Molecular, Cellular and Translational Immunology

Complete ALL of the following Courses:
- BIOS200 - Foundations in Experimental Biology
- IMMUNOL201 - Advanced Immunology I
- IMMUNOL202 - Advanced Immunology II
- IMMUNOL203 - Advanced Immunology III
- IMMUNOL305 - Immunology Journal Club
- IMMUNOL311 - Seminar in Immunology
- IMMUNOL399 - Graduate Research
- BIO141 - Biostatistics
- MED255 - The Responsible Conduct of Research

Path: Molecular, Cellular and Translational Immunology

Complete at least 1 of the following courses:
- MI210 - Advanced Pathogenesis of Bacteria, Viruses, and Eukaryotic Parasites
- BIO214 - Advanced Cell Biology
- IMMUNOL206 - Introduction to Applied Computational Tools in Immunology

Additional Comments:

General Requirements

Immunology Startup and the First-Year Advising Process

Since students enter with differing backgrounds, each student is assisted by the first-year advisor in selecting courses and lab rotations in the first year and in choosing a lab for the dissertation research. In addition, the Immunology Startup, a five-day introduction to immunology in early September, exposes incoming Immunology PhD students to various techniques and concepts. Students learn basic laboratory techniques in immunology and participate in in-depth discussions with faculty.

All students must be enrolled in exactly ten units during autumn, winter, spring, and summer quarters until reaching Terminal Graduate Residence (TGR) status in the spring or summer quarter of their fourth year. Students must pass all courses they are enrolled in; required and elective courses must be taken for a letter grade. Students must earn a grade of B- or better in all courses applicable to the degree that are taken for a letter grade. Satisfactory completion of each year's general and track-specific requirements listed below is required. During the first year, degree progress is monitored closely by the first-year advisor in quarterly meetings and by the Stanford Graduate Program Committee in a final advising session in June.

First-year students must complete three rotations in at least two immunology labs. Two mini-rotations of six weeks each may be arranged in the spring quarter. After joining a lab, students must meet with their thesis advisor within 30 days to complete the Individual Development Plan (IDP). Students continue to complete the IDP annually.

Students apply for any fellowships for which they are eligible (NSF, NDSEG, AHA, NIH NRSA are just a few).

A specific program of study for each student is developed individually with the first-year advisor.

Free Form Requirements

Immunology Ph.D. Curriculum:

All students in the two tracks, Molecular, Cellular, and Translational Immunology (MCTI) and Computational and Systems Immunology (CSI) are required to enroll

Program Policies

Advising Expectations

The Immunology Program is committed to providing academic advising in support of graduate student scholarly and professional development. This includes first-year advising by the program director and ongoing advising with the research mentor in subsequent years. When most effective, this advising relationship entails collaborative and sustained engagement by the advisor and the advisee. The Individual Development Plan (IDP) must be completed by the advisor and advisee annually and entails an extensive interactive written and personal assessment of trainee goals, accomplishments, coursework, and areas for development. As a best practice, advising expectations should be periodically discussed and reviewed to ensure mutual understanding. Both the advisor and the advisee are expected to maintain professionalism and integrity.

Faculty advisors guide students in critical areas such as selecting courses, designing and conducting research, developing teaching pedagogy, navigating policies and degree requirements, and exploring academic opportunities and professional pathways.

In addition, the advising process includes **guidelines and expectations** for graduate student professional conduct, which prepares the student to be responsible members of professional communities.

Graduate students are active contributors to the advising relationship, proactively seeking academic and professional guidance and taking responsibility for informing themselves of policies and degree requirements for their graduate program.

See Graduate Advising for a statement of university policy on graduate advising.

Learning Outcomes

Program Learning Outcomes

Stanford Immunology is home to faculty, students,

in the following core courses:

		Course List
		UNITS
BIOS200 FOUNDATIONS IN EXP BIO	Foundations in Experimental Biology	5
BIO141 BIOSTATISTICS	Biostatistics	5
IMMUNOL201 ADVANCED IMMUNOLOGY I	Advanced Immunology I	3
IMMUNOL202 ADVANCED IMMUNOLOGY II	Advanced Immunology II	3
IMMUNOL258 ETHICS, SCIENCE & SOCIETY	Ethics, Science, and Society	1
IMMUNOL290 TEACHING OF IMMUNOLOGY	Teaching in Immunology	1-15
IMMUNOL305 IMMUNOLOGY JOURNAL CLUB	Immunology Journal Club	1
IMMUNOL311 SEMINAR IN IMMUNOLOGY	Seminar in Immunology	1
IMMUNOL399 GRADUATE RESEARCH	Graduate Research	1-15
MED255 RESPONSIBLE CONDUCT OF RESRCH	The Responsible Conduct of Research	1

Candidates for Ph.D. degrees at Stanford must satisfactorily complete a program of study that includes 135 units of graduate course work and research. At least 3 units must be taken with each of four different Stanford faculty members. Students in the MCTI track are expected to complete all their core course requirements by the end of their second year; students in the CSI track should complete their core course work by the end of the third year.

In the third through fifth year, students are required to take IMMUNOL258 ETHICS, SCIENCE & SOCIETY Ethics, Science, and Society, a refresher ethics course that is required by NIH and is offered every other year.

postdocs, and staff who work together to produce internationally recognized research in many areas of immunology. The long tradition of collaboration among the immunology laboratories at Stanford fosters productive interdisciplinary research, emphasizing the application of current approaches to problems in cellular, molecular, and clinical immunology. Faculty research interests include both basic science research and bench-to-bedside research. Graduate students and postdoctoral scholars receive outstanding training through their participation in research, teaching, seminars, journal clubs, and the annual Stanford Immunology Scientific Conference.

Immediately after the final examination period in Spring Quarter of the first year, first-year immunology graduate students are required to give a presentation on one of their three rotations to the Immunology graduate program committee (Qualifying Examination Process, Part I). After the rotation presentation, the first-year student will meet with the Stanford Graduate Program Committee in a one-on-one advising session to review degree progress and choice of a Ph.D. thesis lab.

In Autumn Quarter of the second year, students focus on preparing for Part II of the Qualifying Examination Process, the general oral examination and the Ph.D. thesis dissertation proposal. The student is required to pass the oral examination and write a thesis dissertation proposal which is presented to and evaluated by a qualifying examination committee composed of three faculty members, two of whom must be from the Immunology program faculty and the third faculty member may be from a department outside the program. The Ph.D. adviser is not present for Part II, but is required to submit an evaluation and grade for the Ph.D. thesis dissertation proposal. Upon successful completion of Part II, the student files a petition for Ph.D. candidacy and form their reading dissertation committee.

The dissertation reading committee (generally known as the Ph.D. thesis committee) must be comprised of at least four faculty members who guide the student in the Ph.D. research, and read and approve the final dissertation. Typically three of the four dissertation reading committee members are from the Immunology program faculty.

In the first through third years, the student must meet with the Ph.D. thesis committee at least once a year. In the fourth and fifth years, the student is expected to meet twice a year with the Ph.D. thesis committee. In addition, if requested by the student, a secondary adviser is assigned who can provide additional advice on issues such as career path choices and other non-academic issues.

Individual Development Plan: Graduate students are required to meet with their faculty mentors once a

required to meet with their faculty mentors once a year to discuss an individual development plan (IDP). The IDP is intended to help the students take ownership of their training and professional development. The goals of the IDP are to: 1) pause, reflect and intentionally think on short-, mid- and long-term goals; 2) identify resources that help to achieve these goals; and 3) have open and direct dialogue with the Ph.D. thesis adviser and establish clear expectations and steps.

Track Specific Requirements

In addition to the general requirements listed above, students must also complete requirements within their track. Written petitions for exemptions to core curriculum and lab rotation requirements are considered only in the first year by the advising committee and the chair of the Graduate Program committee. Approval is contingent upon special circumstances and is not routinely granted.

Molecular, Cellular, and Translational Immunology

In addition to the core courses listed above, MCTI first-year students are required to take the following courses in their first year for a letter grade:

		Course List
		UNITS
IMMUNOL203 ADVANCED IMMUNOLOGY III	Advanced Immunology III	3
Take one of the following courses:		
BIO214 ADVANCED CELL BIOLOGY	Advanced Cell Biology	4
IMMUNOL206 INTRO APPLIED COMP TOOLSIMMUNOL206 INTRO APPLIED COMP TOOLS	Introduction to Applied Computational Tools in Immunology	2
MI210 ADVANCED PATHOGENESIS	Advanced Pathogenesis of Bacteria, Viruses, and Eukaryotic Parasites	4

Electives:

One elective (see suggested elective list below)

		Course List
		UNITS
CBIO240 MLECLR, CELLR, GENE BAS CANCER	Molecular and Genetic Basis of Cancer	4
CSB210 CELL SIGNALING	Cell Signaling	4
DBIO210 DEVELOPMENTAL BIOLOGY	Developmental Biology	4
IMMUNOL223 BIOLOGY AND DISEASE	Biology and Disease of Hematopoiesis	3
IMMUNOL275 TUMOR IMMUNOLOGY	Tumor Immunology	3
SBIO241 BIOLOGICAL MACROMOLECULES	Biological Macromolecules	5

Computational and Systems Immunology

In addition to the core courses listed above, the CSI curriculum trains students to be computational and experimental scientists, who are expected to identify important problems in immunology and to devise integrated computational/ experimental plans for addressing them.

CSI Core (Required):

Students in the CSI track are required to take the following core courses in their first and second years, unless demonstrated by proficiency or coursework. For example, a student, with proficiency in concepts taught in CS 106A, may petition to be exempt from this course and go on to take CS 106B. Petitions to exempt from the courses CS 106A, CS 109, and CS 161 must be approved by the Chair of the CSI track.

		Course List
		UNITS
BIOMEDIN214 ALGORITHMS COMP MOLECULAR BIO	Representations and Algorithms for Computational Molecular Biology	3-4
CS106A	Programming	

PROGRAMMING METHODOLOGY	Programming Methodology	3-5
CS106B PROGRAMMING ABSTRACTIONS	Programming Abstractions	3-5
1263731 - Missing course	Introduction to Probability for Computer Scientists	3-5
CS161 DESIGN & ANALYSIS ALGORITHMS	Design and Analysis of Algorithms	3-5
IMMUNOL206 INTRO APPLIED COMP TOOLS	Introduction to Applied Computational Tools in Immunology	2
IMMUNOL207 ESSENTIAL METHODS COMPUTATION	Essential Methods in Computational and Systems Immunology	3

CSI Electives:

Two electives (see suggested elective list below):

Course List		
		UNITS
BIOMEDIN212 INTR BIOMED DATA SCI RSCH METH	Introduction to Biomedical Informatics Research Methodology	3-5
BIOMEDIN217 TRANSLATIONAL BIOINFORMATICS	Translational Bioinformatics	4
BIOMEDIN260 BIOMEDCAL IMAGE ANALSIS/INTERP	Computational Methods for Biomedical Image Analysis and Interpretation	3-4
CME206 NUMERICAL METHODS FOR ENGR	Introduction to Numerical Methods for Engineering	3
CME263 INTRO LINEAR DYNAMICAL SYSTEMS	Introduction to Linear Dynamical Systems	3
CME309 RANDOMIZED ALGORITHMS	Randomized Algorithms and Probabilistic Analysis	3
CME364A CONVEX OPTIMIZATION I	Convex Optimization I	3
	Applied Fourier	

CME372 APPLIED FOURIER ANALYSIS	Applied Fourier Analysis and Elements of Modern Signal Processing	3
EE276 INFORMATION THEORY	Information Theory	3
EE278 PROBABILITY STAT INFERENCE	Introduction to Statistical Signal Processing	3
STATS116 THEORY OF PROBABILITY	Theory of Probability	4
STATS202 DATA MINING & ANALYSIS	Data Mining and Analysis	3
STATS216 INTRO TO STATISTICAL LEARNING	Introduction to Statistical Learning	3
STATS217 INTRO STOCHASTIC PROCESSES I	Introduction to Stochastic Processes I	3
Other		

Journal Clubs

Both MCTI and CSI students are required to attend the IMMUNOL 305 Immunology Journal Club for their first through third years. Attendance is optional for fourth year and above graduate students.

Immunology Seminar Series

Graduate seminars are an important means of attaining a broad and comprehensive exposure to all areas in immunology as well as gaining a professional perspective and competence in the field. First-year students are required to attend all immunology seminars (IMMUNOL 311 Seminar in Immunology). Students in their second year and above are required to attend 50% of the seminar series each academic year until the last quarter in which their Ph.D. oral defense takes place.

Immunology Scientific Retreat

The annual Scientific Retreat is usually held in Autumn Quarter, and is attended by students, staff, postdocs and faculty of the Stanford immunology community. All immunology graduate students are required to attend. In the third through fifth years, students will

attend. In the third through fifth years, students will present a poster and give a talk on their graduate research.

Teaching Assistantships

Teaching experience and training are part of the graduate curriculum. Each student assists in teaching two courses in the immunology core or electives. MSTP students are only required to do one TAship. A TA match process is held in summer quarter in order to match the graduate student's research and teaching preferences to the appropriate courses. Before beginning their assigned teaching assistantships, students are required to attend a TA orientation workshop held by VPTL before the teaching quarter begins. Teaching Assistants are also required to register for IMMUNOL290 TEACHING OF IMMUNOLOGY Teaching in Immunology under the instructor they are TAing for and in the quarter they are TAing.

First Author Paper Submission

By the fourth or fifth year, graduate students are expected to submit a first author paper for publication. This milestone should be completed before defending a Ph.D. thesis.

Doctoral Dissertation

Before embarking on the dissertation defense process, the graduate student must submit a Petition to Defend to the Director of the Immunology Graduate Program. Important milestones and degree requirements must be met before proceeding to the oral examination. A substantial draft of the dissertation must be turned in to the student's oral examination committee at least one month before the oral exam is scheduled to take place. At the time of the Ph.D. orals defense, an orals chair is chosen to lead the orals committee, which is a distinct committee, but the basic membership is identical to that of the dissertation reading committee. The correct number of faculty committee members for the orals committee is five. For students with two Ph.D. thesis co-advisors, the exact number of faculty committee members is still five. The final written dissertation must be approved by the student's

reading committee and submitted to the Registrar's Office. Upon completion of this final requirement, a student is eligible for conferral of the Ph.D. degree.

Program Policies

Advising Expectations

The Immunology Program is committed to providing academic advising in support of graduate students' scholarly and professional development. This includes first-year advising by the program director and ongoing advising with the research mentor in subsequent years. When most effective, this advising relationship entails collaborative and sustained engagement by the advisor and the advisee. The Individual Development Plan (IDP) must be completed by the advisor and advisee annually and entails an extensive interactive written and personal assessment of trainee goals, accomplishments, coursework, and areas for development. As a best practice, advising expectations should be periodically discussed and reviewed to ensure mutual understanding. Both the advisor and the advisee are expected to maintain professionalism and integrity.

Faculty advisers guide students in critical areas such as selecting courses, designing and conducting research, developing teaching pedagogy, navigating policies and degree requirements, and exploring academic opportunities and professional pathways.

In addition, the advising process includes **guidelines and expectations** for graduate students' professional conduct, which prepares the student to be responsible members of professional communities.

Graduate students are active contributors to the advising relationship, proactively seeking academic and professional guidance and taking responsibility for informing themselves of policies and degree requirements for their graduate program.

See the **Graduate Advising** for a statement of university advising policy.

Learning Outcomes

Learning Outcomes

Program Learning Outcomes

The Immunology doctoral program offers instruction and research opportunities leading to a PhD in Immunology. Two tracks are offered:

- Track 1: Molecular, Cellular, and Translational Immunology
- Track 2: Computational and Systems Immunology

The PhD program in Immunology aims to develop investigators with a strong foundation in immunology and related sciences to carry out innovative research. The program features a flexible choice of courses and seminars combined with extensive research training in the laboratories of participating Immunology faculty. Specifically, immunology graduate students:

- Acquire a fundamental, broad, and comprehensive body of knowledge and skills through an extensive curriculum
- Identify critical scientific questions, design, and conduct experiments using the most appropriate methods
- Read and critically analyze current literature in immunology and other relevant fields
- Present research findings and communicate ideas effectively to a variety of audiences
- Prepare manuscripts that will be published in leading journals
- Learn to teach effectively

Courses

Course Description

Presentations and discussions focus on how current research has progressed from the classic findings in Immunology. This third course in the Immunology core curriculum develops effective presentation skills that are appropriate for a given audience and situation. Students will gain experience in developing and presenting chalk talks, formal presentations, and the all-important elevator pitch on current research. Students will benefit from peer, TA and instructor

Course Description

Mechanisms of immune responses in health and disease. Innate and adaptive immunity; development of the immune system; molecular biology, structure, and function of antibodies and T-cell receptors; cellular basis and regulation of immune responses; infectious diseases and vaccines; allergy, inflammation, and autoimmunity. COVID-19 will be featured as a major example. Lectures and discussion in class and in sections. For upper class

feedback on all presentations.

Grading Basis

ROP - Letter or Credit/No Credit

Units

Min	Max
1	18

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Does this course satisfy the University Language Requirement?

No

Code	Course Component
INS	Individual Study

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Enrollment Optional?
0	No

Default Section Size	Final Exam
30	No

Include in Dynamic Date Calc	Generate Attendance
No	No

Auto Create	Exam Seat Spacing
Yes	1

undergraduate and graduate students who have not had an introductory immunology course. Prerequisites for undergraduates: Biology Core, Human Biology Core, or BIO 83 and 86, or consent of instructor. For graduate students: College-level molecular biology, biochemistry, and cell biology, or consent of instructor.

Cross Listed Courses

BIO230 CELLULAR MOLECULAR IMMUNOLGY, MI200 CELLULAR MOLECULAR IMMUNOLGY

Grading Basis

ROP - Letter or Credit/No Credit

Units

Min	Max
4	4

Contact Hours

Value
0

Academic Progress Hours

Value
4

Financial Aid Hours

Value
4

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit

Code	Course Component
LEC	Lecture

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	120

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

1	4				

Left Use	**Contact Use**
No	No
Time Use	**Template Override**
No	No
Exam Seat Spacing	
1	

Does this course satisfy the University Language Requirement?
No

Course Description
For graduate students, medical students and undergraduates. Topics include the innate and adaptive immune systems; genetics and function of immune cells and molecules; lymphocyte activation and regulation of immune responses. Recommended: undergraduate course in immunology.
Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
3	3

Contact Hours

Value
0

Academic Progress Hours

Value
3

Financial Aid Hours

Value

Code	**Course Component**
LEC	Lecture
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Instruction Mode**
0	In Person
Enrollment Optional?	**Default Section Size**
No	30
Final Exam	**Include in Dynamic Date Calc**

Course Description
Readings of immunological literature. Classic problems and emerging areas based on primary literature. Student and faculty presentations. Prerequisite: IMMUNOL 201/MI 211.
Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
3	3

Contact Hours

Value
0

Academic Progress Hours

Value
3

Financial Aid Hours

Value
3

Code	**Course Component**
LEC	Lecture
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Instruction Mode**
0	In Person
Enrollment Optional?	**Default Section Size**
No	30
Final Exam	**Include in Dynamic Date Calc**
Yes	No

3

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	3

Exam	Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

Left Use	Contact Use
No	No

Time Use	Template Override
No	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Course Description
Key experiments and papers in immunology. Course focuses on the history of Immunology and how current research fits into the historical context. Students work on developing effective presentation skills.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units	
Min	**Max**
3	3

Code	Course Component
LEC	Lecture

Instructor Contact Hours **Workload Hours**

Contact Hours
Value

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	3

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	Yes

Reason Use	Tardy Use
Yes	Yes

Left Use	Contact Use
Yes	Yes

Time Use	Template Override
Yes	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Course Description
Concepts and application of adaptive and innate immunology and the role of the immune system in human diseases. Case presentations of diseases including autoimmune diseases, infectious disease and vaccination, hematopoietic and solid organ transplantation, cancer immunotherapy, genetic and acquired immunodeficiencies, hypersensitivity reactions, and allergic diseases. Problem sets based on lectures and current clinical literature. Laboratory in acute and chronic inflammation.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units	

Code	Course Component

0

Academic Progress Hours

Value
3

Financial Aid Hours

Value
3

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	3

0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	30

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	Yes

Reason Use	Tardy Use
Yes	Yes

Left Use	Contact Use
Yes	Yes

Time Use	Template Override
Yes	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Min	Max
4	4

Contact Hours

Value
0

Academic Progress Hours

Value
4

Financial Aid Hours

Value
4

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	4

Code	Component
LEC	Lecture

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	100

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	Yes

Reason Use	Tardy Use
Yes	Yes

Left Use	Contact Use
Yes	Yes

Time Use	Template Override
Yes	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Course Description
Introduction to computational tools for analyses of immunological data sets, including but not limited to single-cell data such as that from flow cytometry or CyTOF, Luminex, and genomic analyses. Students become familiar with major web-based databases and analysis suites for immunological and genomic data; gain a working knowledge of the major software/algorithms for working with major data types, and be able to apply at least one computational tool in these areas to analyze a public data set. Lectures will be followed by a demonstration and interaction session on the topic. Students will complete a computational analysis project and present it to the class.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
2	2

Contact Hours

Value
0

Academic Progress Hours

Value
2

Financial Aid Hours

Value
2

Course Count	Course Repeatable for Degree Credit?
1	No

Code	Course Component
LEC	Lecture

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	50

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use

Course Description
Introduction to the major underpinnings of systems immunology: first principles of development of computational approaches to immunological questions and research; details of the algorithms and statistical principles underlying commonly used tools; aspects of study design and analysis of data sets. Prerequisites: CS106a and CS161 strongly recommended.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
3	3

Contact Hours

Value
0

Academic Progress Hours

Value
3

Financial Aid Hours

Value
3

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	3

Code	Course Component
LEC	Lecture

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	30

Final Exam	Include in Dynamic Date Calc
Yes	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	Yes

Reason Use	Tardy Use
Yes	Yes

Contact

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	2

Meeting	Yes
Reason Use	**Tardy Use**
Yes	Yes
Left Use	**Contact Use**
Yes	Yes
Time Use	**Template Override**
Yes	No
Exam Seat Spacing	
1	

Does this course satisfy the University Language Requirement?
No

Course Description
Open to medical students (regardless of whether they are in foundations or applications), graduate students, and undergraduates (by consent of instructor). The format is a seminar series with weekly lectures from Immunology Faculty and guest speakers focusing on current basic immunology research and how it is translated into immunotherapies and clinical trials. Topics include hematopoiesis, transplantation, tolerance, immune monitoring, vaccination, autoimmunity and antibodies, rheumatoid arthritis, chronic pulmonary disease, and asthma. Med students in the immunology concentration major are allowed to take Imm 209 repeatedly for credit.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	1

	Course Component
Code	Lecture
LEC	
Instructor Contact Hours	**Workload Hours**

Contact Hours

Left Use	**Use**
Yes	Yes
Time Use	**Template Override**
Yes	No
Exam Seat Spacing	
1	

Does this course satisfy the University Language Requirement?
No

Course Description
Required for medical students selecting the Immunology Concentration. Attendance at a minimum of ten seminars related to immunology outside of required medical school classes. A one-page essay on each seminar, what was presented and how it relates to a clinical immunologic problem, is required.

Grading Basis
MED - Medical School +/- Option

Units

Min	Max
2	2

Contact Hours

Value
0

Academic Progress Hours

Value
2

	Course Component
Code	Individual Study
INS	
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Enrollment Optional?**
0	No

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Does this course satisfy the University Language Requirement?
No

Hours	Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	30

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	Yes

Reason Use	Tardy Use
Yes	Yes

Left Use	Contact Use
Yes	Yes

Time Use	Template Override
Yes	No

Exam Seat Spacing
1

Course Description
Hematopoiesis is the formation, development, and differentiation of blood cells. Lecture and journal

2

Financial Aid Hours

Value
2

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Does this course satisfy the University Language Requirement?
No

Default Section Size	Final Exam
30	No

Include in Dynamic Date Calc	Generate Attendance
No	No

Auto Create	Exam Seat Spacing
Yes	1

Course Description
This discussion focused Ethics, Science, and Society interactive mini-course will engage Immunology

club. Topics will include definitive and adult hematopoiesis, myeloid and lymphoid development, hematopoietic diseases, stem cell niche, bone marrow transplant, and methods and models used to study hematopoiesis. For upper level undergraduates or graduate students. Pre-requisite for undergraduates: Biology or Human Biology core, or consent of instructor.

Cross Listed Courses
STEMREM223 BIOLOGY AND DISEASE

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
3	3

Contact Hours

Value
0

Academic Progress Hours

Value
3

Financial Aid Hours

Value
3

Course Count	Course Repeatable for Degree Credit?
1	No

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
1	3

Code	Course Component
DIS	Discussion

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Enrollment Optional?
0	Yes

Default Section Size	Final Exam
100	No

Include in Dynamic Date Calc	Generate Attendance
No	No

Auto Create	Exam Seat Spacing
Yes	1

Code	Course Component
LEC	Lecture

Instructor Contact Hours	Workload Hours

graduate students, postdoctoral fellows, and faculty in learning and conversations on topics in responsible research (including animal subjects, authorship, collaboration, conflicts of interest, data management, human subjects, mentor-mentee relationships, peer review, publication, research misconduct, and social responsibility) and diversity in science, informed by readings, case studies, individual reflections, and more. Some of the driving themes in this course include: what it means to do research well and how to and not to achieve this, why doing research well and with integrity is important, and who are researchers currently and who should they be. Prerequisite: MED 255

Cross Listed Courses
INDE281 ETHICS, SCIENCE & SOCIETY

Grading Basis
MSN - Medical Satisfactory/No Credit

Units

Min	Max
1	1

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit

Code	Course Component
DIS	Discussion

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Enrollment Optional?
0	Yes

Default Section Size	Final Exam
30	No

Include in Dynamic Date Calc	Generate Attendance
No	No

Auto Create	Exam Seat Spacing
No	1

0	0

OEE Workload Hours	**Enrollment Optional?**
0	No
Default Section Size	**Final Exam**
100	No
Include in Dynamic Date Calc	**Generate Attendance**
No	No
Auto Create	**Exam Seat Spacing**
Yes	1

Completions Allowed for Degree Credit	**Total Units Allowed for Degree Credit**
4	4

Does this course satisfy the University Language Requirement?
No

Code	**Course Component**
LEC	Lecture
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Instruction Mode**
0	In Person
Enrollment Optional?	**Default Section Size**
No	99
Final Exam	**Include in Dynamic Date Calc**
No	No
Generate Attendance	**Auto Create**
No	Yes
Attendance Type	**Present Use**
Meeting	Yes
Reason Use	**Tardy Use**
Yes	Yes
Left Use	**Contact Use**
Yes	Yes
Time Use	**Template Override**
Yes	No
Exam Seat Spacing	
1	

Course Description
Clinical observation experience for medical students in the Immunology Scholarly Concentration. At the end of the observation period, which may span over one to two quarters, the student submits a case observation paper to his/her faculty sponsor. Prerequisite: IMMUNOL 205.
Grading Basis
MED - Medical School +/- Option

Units

Min	Max
1	3

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Code	Course Component
INS	Individual Study

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Enrollment Optional?
0	No

Default Section Size	Final Exam
3	No

Include in Dynamic Date Calc	Generate Attendance
No	No

Auto Create	Exam Seat Spacing
Yes	1

Does this course satisfy the University Language Requirement?
No

Course Description
Practical experience in teaching by serving as a teaching assistant in an immunology course. Unit values are allotted individually to reflect the level of teaching responsibility assigned to the student. May be repeated for credit.
Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	18

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Code	Course Component
INS	Individual Study

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	Independent Studies

Enrollment Optional?	Default Section Size
No	999

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

Left Use	Contact Use
No	No

Template

Time Use	Override
No	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Course Description
Prerequisite: consent of instructor.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	18

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions	Total Units

Code	Course Component
INS	Individual Study

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	30

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Course Description
Required of first- to third-year graduate students. Graduate students present and discuss recent papers in the literature. May be repeated for credit.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	1

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Code	Course Component
LEC	Lecture

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	In Person

Enrollment Optional?	Default Section Size
No	30

Final Exam	Include in Dynamic Date Calc
Yes	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use

Allowed for Degree Credit	Allowed for Degree Credit
99	999

Reason Use	Tardy Use
No	No
Left Use	**Contact Use**
No	No
Time Use	**Template Override**
No	No
Exam Seat Spacing	
1	

Does this course satisfy the University Language Requirement?
No

Course Description
Enrollment limited to Ph.D., M.D./Ph.D., and medical students whose scholarly concentrations are in Immunology. Current research topics.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	1

Contact Hours

Value
0

Academic Progress Hours

Value
1

Financial Aid

Code	Course Component
SEM	Seminar
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Instruction Mode**
0	In Person
Enrollment Optional?	**Default Section Size**
No	14

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Meeting	Yes
Reason Use	**Tardy Use**
Yes	Yes
Left Use	**Contact Use**
Yes	Yes
Time Use	**Template Override**
Yes	No
Exam Seat Spacing	
1	

Does this course satisfy the University Language Requirement?
No

Course Description
This course will take an emerging topic of area of interest in computational immunology and give the class some time to discuss and take a hands-on approach with the material . The course will be a mix of talks and hands-on work/projects with a curriculum shaped by recent activities in the field.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	1

Contact Hours

Value
0

Academic Progress Hours

Value
1

Code	Course Component
SEM	Seminar
Instructor Contact Hours	**Workload Hours**
0	0
OEE Workload Hours	**Instruction Mode**
0	In Person
	Default

Hours
Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

Left Use	Contact Use
No	No

Time Use	Template Override
No	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Course Description
For Ph.D., M.D./Ph.D. students, and medical students whose scholarly concentrations are in Immunology.

Grading Basis
MOP - Medical Option (Med-Ltr-CR/NC)

Units

Min	Max
1	18

Contact Hours
Value
0

Code	Course Component
INS	Individual Study

Instructor Contact Hours	Workload Hours

Financial Aid Hours
Value
1

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
3	3

Enrollment Optional?	Section Size
No	18

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

Left Use	Contact Use
No	No

Time Use	Template Override
No	No

Exam Seat Spacing
1

Grading Basis
RTG - TGR

Units

Min	Max
0	0

Contact Hours
Value
0

Academic

Code	Course Component
T/D	Thesis/Disser

Instructor Contact Hours	Workload Hours
0	0

OEE

Workload Hours	Instruction Mode

Academic Progress Hours

Value
1

Financial Aid Hours

Value
1

Course Count
1

Course Repeatable for Degree Credit?
Yes

Total Completions Allowed for Degree Credit
99

Total Units Allowed for Degree Credit
999

0

0

OEE Workload Hours
0

Instruction Mode
Independent Studies

Enrollment Optional?
No

Default Section Size
999

Final Exam
No

Include in Dynamic Date Calc
No

Generate Attendance
No

Auto Create
Yes

Attendance Type
Meeting

Present Use
Yes

Reason Use
Yes

Tardy Use
Yes

Left Use
Yes

Contact Use
Yes

Time Use
Yes

Template Override
No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Grading Basis
RTG - TGR

Units

Course

Progress Hours

Value
8

Financial Aid Hours

Value
8

Course Count
1

Course Repeatable for Degree Credit?
Yes

Total Completions Allowed for Degree Credit
99

Total Units Allowed for Degree Credit
999

0

In Person

Enrollment Optional?
No

Default Section Size
30

Final Exam
No

Include in Dynamic Date Calc
No

Generate Attendance
No

Auto Create
Yes

Attendance Type
Meeting

Present Use
No

Reason Use
No

Tardy Use
No

Left Use
No

Contact Use
No

Time Use
No

Template Override
No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No

Min	Max
0	0

Contact Hours

Value
0

Academic Progress Hours

Value
8

Financial Aid Hours

Value
8

Course Count	Course Repeatable for Degree Credit?
1	Yes

Total Completions Allowed for Degree Credit	Total Units Allowed for Degree Credit
99	999

Code	Component
T/D	Thesis/Dissertation

Instructor Contact Hours	Workload Hours
0	0

OEE Workload Hours	Instruction Mode
0	Independent Studies

Enrollment Optional?	Default Section Size
No	999

Final Exam	Include in Dynamic Date Calc
No	No

Generate Attendance	Auto Create
No	Yes

Attendance Type	Present Use
Meeting	No

Reason Use	Tardy Use
No	No

Left Use	Contact Use
No	No

Time Use	Template Override
No	No

Exam Seat Spacing
1

Does this course satisfy the University Language Requirement?
No