

2. INTRODUCTION

The University of Arizona offers a graduate program leading to the Ph.D. /M.S. degree in Medical Pharmacology.

Background

Pharmacology is a scientific discipline concerned with investigations of the physiological and biochemical actions of exogenous and endogenous compounds on living tissues. These studies range in scope from investigations at the molecular level to the clinical pharmacological response in humans. The ability of pharmacologists to elucidate basic mechanisms of drug action in living cells and biological systems has permitted the development of a rational approach to drug design and use. Medical Pharmacology stresses the identification of the etiology of human diseases and the development of novel therapies for their treatment.

In the last three decades there have been rapid advances in the field of pharmacology characterized by basic and clinical achievements which have made a profound impact on our society. Fundamental discoveries have led to the introduction of a large number of highly effective and relatively safer pharmacologic agents. A number of acute and chronic diseases previously disabling to a large number of people can now be modified or controlled by drug therapy. Pharmacologists also study the adverse effects of drugs to better understand their physiological and biochemical outcomes.

The realm of medical pharmacology over the years has widened from one of purely basic science to a central and critical position of a team which addresses basic and applied research and health care problems. The pharmacologist has traditionally been at the forefront of the discovery or investigation of chemicals which have some useful biological activities. However, many factors, including the increased impact of molecular biology, attitudes of society toward drugs, general advances in health care and increased complexity of drug therapy, have expanded this traditional role

to involvement in areas such as neuroscience, immunology, genetics, and cardiovascular pharmacology. Pharmacologists now occupy a prominent role in the larger translation of drug use to humans for therapeutic and/or diagnostic use. In the future they are likely to become involved in the activities of health promotion and disease prevention.

The expanded roles of pharmacology in the health-related sciences are evidenced by the increased need for highly trained professional personnel (Ph.D., M.S., MD-Ph.D., PharmD-Ph.D. degrees). This need is reflected in the number of positions available in research-teaching- service areas of health professional schools (human and veterinary medicine, pharmacy, dentistry, nursing), university graduate and undergraduate programs, pharmaceutical and chemical industries, hospitals, and state and federal government research institutes and regulatory agencies.

The Graduate Program in Medical Pharmacology at The University of Arizona is oriented towards modern pharmacology especially in those areas dealing with mechanisms of therapeutic agents for treating and diagnosing human disease. Emphasis is placed on the physiological, biochemical and molecular mechanisms of drug action. Current research of the participating faculty members in the Program includes investigations in the fields of neuroscience, neuropharmacology, molecular pharmacology, cardiovascular, immunopharmacology and molecular toxicology.

3. GRADUATE PROGRAM ORGANIZATION

Administration of the Program

The Executive Committee (EC) of the Graduate Program in Medical Pharmacology (GPMP) is charged with the administration of the Program (reporting to the Chair of the Department of Pharmacology, College of Medicine). The Graduate Program in Medical Pharmacology comprises all faculty members in the University who qualify for inclusion as Principal or Affiliated Faculty.

The Executive Committee consists of at least five members of the GPMP, appointed to renewable three-year terms by the Chair of the Department of Pharmacology. One member of the EC is appointed by the Chair of the Department of Pharmacology to serve for a renewable five-year term as Chair of the EC and Chair of the Graduate Program in Medical Pharmacology. A subcommittee of the EC consisting of three members serves as the Admissions Committee and is responsible for coordinating the recruitment and advising of graduate students.

The Executive Committee:

- Develops and implements policies and procedures for the operation of the Graduate Program and for associated teaching and research programs of the GPMP;
- Evaluates nominations and applications for membership in the GPMP as Principal Faculty or Affiliated Faculty of the Program and reviews faculty appointments annually; Recommends GPMP faculty to the Department Chair to serve on standing or ad hoc committees of the GPMP;
- Acts on recommendations of the Admissions Committee regarding applications from prospective students;
- Evaluates annual progress reports of all students in the GPMP;
- Plans for future developments in the area of Medical Pharmacology at the University;
- Prepares and submits an annual report of Program activities and accomplishments to the Chair of the Department of Pharmacology;
- Ensures that regular reviews of the Program, consistent with requirements of the Arizona Board of Regents, are carried out;
- Seeks funding in support of the Program;

- Nominates GPMP faculty for EC membership to ensure continuity over time; and
- Ensures that the GPMP website is revised annually.

The Executive Committee will also include one student member who will serve for a one year term beginning in September and ending July 31st of the next year. The student member will be a Medical Pharmacology graduate student nominated by his/her peers and will serve as an official liaison between students and faculty of the Program. The representative is responsible for organizing graduate student participation in Program endeavors, as well as serving on Program committees in an advisory capacity. Each student should seriously consider her/his choice for the graduate student representative in order to maintain an effective student voice in Program issues. In matters requiring a vote of the Executive Committee the student member will not have voting privileges.

The Chairman of the Executive Committee (Chairman of the Graduate Program in Medical Pharmacology):

- With the assistance of the graduate program coordinator, administers the Program and the activities of the EC and GPMP;
- Convenes and chairs the meetings of the EC and the GPMP faculty;
- Acts on behalf of the EC to implement Program policies and procedures (e.g. to sign requests to schedule examinations, to approve recommendations for appointments to examination committees, etc.); and
- Serves as representative of the GPMP to the University administration, granting agencies, prospective students, etc.

The **Graduate Program Coordinator** works closely with the students, faculty, Executive Committee, Graduate College and standing committees to ensure timely fulfillment of UA and Graduate Program policies and flow of information, as well as to coordinate and manage department recruitment as well as assist faculty and students as needs arise.

4. FACULTY OF THE GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY

The faculty of the Graduate Program in Medical Pharmacology is organized into two categories: Principal Faculty and Affiliated Faculty. Appointment to one of these categories is based upon review of the candidate by the Executive Committee with respect to the criteria given below; continuation of participation is contingent upon meeting the same criteria at the annual review by the Executive Committee.

The **Principal Faculty** are tenure eligible or tenured faculty in the Department of Pharmacology at The University of Arizona who are admitted to membership in the GPMP by fulfilling the following criteria:

- One who is recommended by a Principal faculty to serve as Major Advisor to a graduate student conducting dissertation research in pharmacology;
- One who is active in research in pharmacology (as assessed by current record of research support, publication of recent, and refereed papers based upon that research);
- One whose pharmacologic research constitutes a major component of her/his overall research program; and
- One who actively participates in any of the service or teaching activities of the GPMP.

The **Affiliated Faculty** are scientists who have a primary appointment in a University department or unit outside that of the Department of Pharmacology and fulfill the following criteria:

- One who is active in research (as assessed by current record of research support, publication of recent, and refereed papers based upon that research) OR
- One who is interested and knowledgeable in pharmacology but not necessarily actively involved in current research in the field; and
- One who contributes significantly to the goals of the Graduate Program by teaching Graduate Program courses, organizing seminars, serving on Graduate program committees, etc.

Participating Faculty are Principal and Affiliate Faculty presently associated with the Program and are listed below. Their research interests can be found at www.pharmacology.arizona.edu/. Students wishing to conduct research with Affiliated Faculty Members **MUST** request approval from the Executive Committee.

MEDICAL PHARMACOLOGY

FULL AND AFFILIATED FACULTY/FACULTY RESEARCH INTEREST

TENURE TRACK

John W. Bloom, Associate Professor, M.D., Jefferson University, 1971. Molecular mechanisms of glucocorticoid action in the lung; mechanisms of eosinophil apoptosis; effects of genetic polymorphisms on gene expression in asthma.

Qin M. Chen, Associate Professor, Ph.D., Clarkson (New York), 1991. Molecular mechanisms of oxidative injury and adaptation, stress signal transduction pathways, stress gene expression, senescence, apoptosis and cardiac hypertrophy.

Thomas P. Davis, Professor, Ph.D., University of Missouri-Columbia, 1978. Neuropharmacology; molecular regulation of growth factor processing and metabolism; biotech approaches to targeting the blood-brain barrier for new drug development; effects of hypoxia, aglycemia and nicotine on endothelial cell permeability, resistance and cytoarchitecture.

Robert T. Dorr, Professor, Ph.D., University of Arizona, 1984. Toxicology systems and mechanisms of action of cytotoxic anticancer agents; pharmacology of cancer chemopreventive agents.

Greg Dussor, Assistant Professor, Ph.D., University of Texas, 2002. Mechanisms of pain signaling from the skin & ion channels involved in pain signaling.

Edward D. French, Professor, Ph.D., UCLA, 1979. Neuropharmacology of drugs of abuse, addiction, and CNS responses to stressful stimuli using electrophysiological and behavioral endpoints.

Marilyn J. Halonen, Professor, Ph.D., University of Arizona, 1974. Immunopharmacology; cytokine regulation of IgE synthesis; cell biology of cytokine and receptor differences as a result of naturally occurring polymorphic genes related to asthma or allergy in the population; immune responses in infancy to respiratory viruses and allergens and immune alterations in asthma.

Josephine Y. Lai, Professor, Ph.D., Imperial College (London), 1985. Molecular mechanisms of neuropathic pain; opioid receptor pharmacology; gene targeting, drug discovery.

Terry Landowski, Research Assistant Professor, Ph.D., Montana State University, 1994. Molecular and cellular mechanisms of programmed cell death in hematological malignancies. Signal transduction pathways that regulate apoptosis in chemotherapeutic drug response and resistance.

Patrick W. Mantyh, Professor, PhD., JD, University of California, San Francisco, 1981, JD William Mitchell College of Law, 1994, Cancer, cancer pain and non-malignant bone pain, stem cells and skeletal health in disease and aging.

John D. Palmer, Professor Emeritus, Ph.D., M.D., University of Minnesota, 1961. Pharmacology; cardiovascular and clinical pharmacology; studies of cardiovascular and pulmonary changes associated with acute hypersensitivity responses and systemic anaphylaxis.

Frank Porreca, Professor, Ph.D., Temple University, 1982. Neurobiology of pain.

Theodore Price, Assistant Professor, Ph.D., University of Texas, 2003. Regulation of activity-dependent protein synthesis in nociceptors and nociceptive projection neurons; control of anion homeostasis in the pain pathway.

I Glenn Sipes, Professor, Ph.D., University of Pittsburgh, 1969. Mechanisms of tissue injury induced by drugs or other xenobiotics; mechanisms by which one chemical modulates the toxicity of another; carcinogenesis, human metabolism of environmental pollutants.

Robert S. Sloviter, Professor, Ph.D., Pennsylvania State University College of Medicine, 1978. Neuropharmacology, neurotoxicology, neuroanatomy, and neurophysiology of epilepsy and other neurological disorders; mechanisms of neuronal death; anticonvulsant drug mechanisms.

Todd W. Vanderah, Associate Professor, Ph.D., University of Arizona, 1995. Mechanisms and pharmacology of acute and chronic models of pain; endogenous opioid systems; sensory neural systems; opioid tolerance. antinociceptive synergy between cannabinoids and opioids.

AFFILIATED FACULTY

Peter B. Chase, M.D., Ph.D. Clinical Emergency Medicine.

Jack H. Dean, Professor, Ph.D., University of Arizona, 1972. The safety assessment and registration strategies of new pharmaceutical entities, acceleration of lead compound development, regulatory approval strategies, immunotoxicology, and models for understanding drug induced toxicity at a molecular level.

Ronald P. Hammer, Jr., Professor, Ph.D., UCLA, 1980. Neurobiology of schizophrenia and drug abuse, molecular adaptation in forebrain dopamine systems, brain and behavioral response to salient stressors, neurotrophic factors.

Israel Hanin, Professor and Chair Emeritus, Ph.D., Loyola University, Alzheimer's and Parkinson's diseases.

Victor Hruby, Regents Professor, Ph.D., Cornell, 1965. The chemistry of human behavior especially peptide hormones and neurotransmitters; drug design, discovery and development; pain, addiction, feeding behavior, sexual behavior, pigmentation disease, cancer, diabetes, immune response; GPCRs; biophysics/biochemistry of health and disease.

David G. Johnson, Professor, M.D., Harvard, 1967. Endocrine pharmacology; pharmacology and physiology of pancreatic function; peptide hormones; clinical pharmacology.

Douglas F. Larson, Professor, Ph.D., University of Arizona, 1984. Immunopharmacology; pharmacology and design of selective immunosuppressive therapies for solid organ transplantation and autoimmune diseases.

Ronald J. Lukas, Research Professor, Ph.D., SUNY Downstate Medical Center, 1976. Nicotinic acetylcholine receptor biology using clonal lines and transgene expression systems; neurotrophic factors; neurodegenerative diseases; neuronal differentiation.

T. Philip Malan, Jr., Professor, Ph.D. Harvard, 1981, M.D. Massachusetts, 1985. Neuropharmacology; pharmacology and molecular biology of neuropathic pain.

Robin Polt, Professor, Ph.D., Columbia University, 1986. Chemistry; synthesis and new synthetic methods, drug design and transport; neuropsychopharmacology and the blood-brain barrier.

William R. Roeske, Professor, M.D., Stanford, 1970. Cardiovascular pharmacology; regulation, characterization, and identification of autonomic receptors; neuropharmacology of drugs of abuse.

F. Mazda Shirazi, M.D., Ph.D.

W. Daniel Stamer, Associate Professor, Ph.D., University of Arizona, 1996. Molecular and cellular mechanisms that underlie the regulation of aqueous humor outflow in the human eye; including receptor activation, second messenger signaling, ion and water transport, and secretory function.

RESEARCH TRACK

Juan Miguel Jimenez Andrade, Research Assistant Professor, PhD., CINVESTAV-IPN, Mexico, 2005. Interactions between nerve fibers and bone cells and how these interactions change with aging. Molecular transducers that drive skeletal pain and how their expression/trafficking is altered with aging.

Tamara King, Research Assistant Professor, Ph.D., Texas A & M, 1997. Pharmacology; neurochemical signaling of noxious and innocuous sensory inputs to the spinal cord; mechanisms of chronic morphine induced abnormal pain.

Michael H Ossipov, Research Associate Professor, Ph.D., Philadelphia College of Pharmacy & Science, 1982. Pharmacology; neurophysiology, pharmacology and neuroanatomical pathways of acute and chronic pain states; isobolographic and statistical interpretation of drug-drug interactions.

Sangita C. Pawar, Research Assistant Professor, Ph.D., University of Arizona (Tucson), 2006. Cancer Metastasis in bone.

Eva Varga, Assistant Professor, Ph.D., Attila Jozsef University, Szeged, Hungary; 1979. Molecular pharmacology of drugs of abuse; cellular mechanisms of drug tolerance; design and characterization of non-addictive analgesics, cardioprotective agents, and immunomodulators.

George Watts, Assistant Professor, Ph.D. Investigation of esophageal adenocarcinoma, changes in gene expression that are associated with progression from Barrett's esophagus to cancer.

Colin Willis, Research Asst. Professor, Ph.D., London, 1994. Mechanisms of glial/endothelial cell/extracellular matrix interactions at the blood-brain barrier and effect on vascular permeability in acute and chronic disease states.

5. FACILITIES MANAGEMENT

5.1 Laboratory Space

The Department of Pharmacology, College of Medicine occupies space in The University of Arizona Health Sciences Center. The College of Medicine Basic Sciences Building, Life Sciences North, Medical Research Building (MRB) and the Arizona Cancer Center include laboratory suites, shared instrument rooms, cold rooms, conference rooms, and departmental and faculty offices. Program faculties also have laboratories at the Barrow's Neurological Institute in Phoenix, and University Medical Center.

The Graduate Program in Medical Pharmacology in the Department of Pharmacology is housed in the College of Medicine on the Health Sciences Center campus. In addition to individual research laboratories, shared laboratory space includes an autoradiography laboratory, a procedures laboratory, a general instrument laboratory and a tissue culture facility.

Due to the various departmental, college and center affiliations of the Program Faculty, there is also additional laboratory space and facilities in the Arizona Cancer Center, the Arizona Respiratory Center, and various departments in the College of Medicine (e.g. Anesthesiology, Medicine, Surgery and Ophthalmology).

5.2 Equipment Resources

Availability of modern scientific instruments is crucially important to research and graduate education programs. We are fortunate to possess state-of-the-art instrumentation to conduct research at all levels of biological organization. Each investigator's laboratory is equipped with specialized instrumentation required for research in their particular field.

5.3 Library Resources

The University of Arizona takes pride in the outstanding quality of its libraries. The General Library and the Science Library, both on the main campus, hold extensive collections of general and scientific periodicals and books. The Health Sciences Library is located in the Arizona Health Sciences Center. In addition to its holdings of pertinent periodicals and books, the library provides an excellent array of valuable services including computerized bibliographic databases and modern electronic information retrieval services with related on-line and off-line nationwide linkups. A vast selection of supplemental audio-visual teaching aids is available in the media section.

5.4 Experimental Animals

The availability of high quality experimental animals is of great importance to modern research in pharmacology. Graduate students **MUST** become familiar with safe and humane animal care and handling techniques. The University Animal Care Facility procures and cares for all animals used in teaching and research by the Program. The staff of University Animal Care is available to students for consultation on problems related to the use of animals in scientific research.

***All students are required to complete an online training course by the University Animal Care staff before the end of their first semester of residence in order to comply with federal, state and local regulations governing animal care. Please visit <http://www.iacuc.arizona.edu/training/> for information on obtaining IACUC training and certification.**

5.5 Laboratory Safety and Environmental Health

Students are required to attend courses on these topics by end of their first semester of residence, preferably as soon after their arrival as possible. It is the responsibility of all personnel involved in scientific study to be aware of the safety precautions and the proper disposal of hazardous waste specific to the research effort. The student has a moral obligation to not only familiarize him/herself with, but also follow, the specifics of laboratory safety associated with their desired area of research. The offices of Risk Management and Radiation Control offer seminars covering such subjects as fire prevention, hazardous waste disposal, compressed gas safety, basic radiation protection, and industrial hygiene, etc. Laboratory directors and technicians are the best source for day to day laboratory safety techniques and advice on safety seminars required for laboratory personnel. Please visit the Risk Management website at <http://risk.arizona.edu/training/index.shtml> to sign up for the training programs described above.

6. PROGRAM REQUIREMENTS

6.1 Supervision

The Graduate Coordinator and Chair of the GPMP advises each student in the preparation of her/his first-year program of study. The Chair may require that remedial course work be completed. Depending upon the student's interests, the Director may also assign the student to an interim faculty advisor selected from the Principal Faculty. After the student has a Dissertation Advisor (the Major Advisor), advising and research supervision are provided by the student's Dissertation Advisor and individuals on the Dissertation Committee. They will make every effort to tailor the student's course work to her/his individual needs.

6.2 Financial Support

Financial assistance in the form of a research assistantship is available to all first year Ph.D. students admitted into the Program. Assignment of students to training grants is a responsibility of individual training grant advisory committees. Future support will include research assistantships funded by the research advisor. Students are also encouraged to apply for individual pre-doctoral fellowships from sources outside the University. Appointments such as research assistants provide a waiver of tuition, health insurance and in-state registration fees. Financial assistance for M.S. students is dependent on the availability of funds.

6.3 Core Courses and Coursework Requirements

All students are required to take the core courses listed below:

Fall Semester – Year 1

Required	Physiology for Pharmacology Majors	PHCL	3	Bob Sloviter
Required	Molecular & Cellular Biology OR Biochemistry	MCB 568 BIOC 460	4 3	Little
Required	Biostatistics	EPID 576 A	3	TBA
Required	*Intro to Med Pharm Research (Rotation) OR Research Conference (Lab meetings)	PHCL 586 A B PHCL 696 A	1 1	Med Pharm Faculty Med Pharm Faculty
Required	Scientific Writing Strategies & Ethics	PHCL 595 B	2	Dan Stamer
Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
TOTAL			13	

Spring Semester - Year 1

Required	Principles of Pharmacology	PHCL 520/620	3	Todd Vanderah
Required	Pharmacological Basis of Therapeutics	PHCL 501 A	3	Tom Davis
Required	Immunopharmacology	PHCL 582	3	Doug Larson
Required	Neuropharmacology	PHCL 553/653	3	Greg Dussor
Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
TOTAL			13	

Fall Semester – Year 2

Required	Pharmacological Basis of Therapeutics	PHCL 501 B	3	Marilyn Halonen
Required	Independent Study	PHCL 699	2	Med Pharm Faculty
Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Molecular Targets of Pharm Agents	PHCL 551 A	3	Ted Price
Elective	(To fulfill minor)		3	TBA
Elective	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
TOTAL			13	

Spring Semester – Year 2

Required	Independent Study	PHCL 699	2	Med Pharm Faculty
Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Elective	(To fulfill minor)		3	TBA
Elective	(To fulfill minor)		3	TBA
Elective	(To fulfill minor)		3	TBA
TOTAL			11	

*If applicable

Fall Semester – Year 3

Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Required	Research	PHCL 900	1-12	Med Pharm Faculty
Required	Dissertation	PHCL 920	1-18	Med Pharm Faculty

Spring Semester – Year 3

Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Required	Research	PHCL 900	1-12	Med Pharm Faculty
Required	Dissertation	PHCL 920	1-18	Med Pharm Faculty

Fall Semester – Year 4

Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Required	Dissertation	PHCL 920	1-18	Med Pharm Faculty

Spring Semester – Year 4

Required	Critical Literature Review (Seminar)	PHCL 596 C	1	Qin Chen/Dan Stamer
Required	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Required	Dissertation	PHCL 920	1-18	Med Pharm Faculty

Elective Courses Available

Elective	Molecular Mechanisms of Carcinogenesis	CBIO 551	3	TBA
Elective	Cancer Therapeutics	CBA 555	3	TBA
Elective	Principles of Cellular & Molecular Neurobiology	NRSC 588	4	K. Zinsmaier
Elective	Basic Human Pathology	PATH 515	4	TBA
Elective	Pharmacology 1	PCOL 571 A	4	John Regan
Elective	Proteomics/Genomics	PCOL 601	3	TBA
Elective	Principles in Drug Discovery, Design & Development	PHCL 670	3	TBA
Elective	Research Conference (Lab meetings)	PHCL 696 A	1	Med Pharm Faculty
Elective	Drugs of Abuse	PHCL 445	3	Edward Bilsky
Elective	Human Physiology	PSIO 603 B	3	Ron Lynch

Research Required Units, Years 3 & 4

Required	Research	PHCL 900	1-12	Med Pharm Faculty
Required	Master's Thesis	PHCL 910	1-9	Med Pharm Faculty
Required	Dissertation	PHCL 920	1-18	Med Pharm Faculty
Elective	Supplementary Registration	PHCL 930	1-9	Med Pharm Faculty

6.4 Waiver of Core Courses

In order to waive a core course a “**Graduate College Petition**” form must be completed. Obtain a form from the Graduate Program Office, AHSC 5103A.

The student must meet with the instructor or coordinator of the course he/she would like to waive. It is advised that the student bring evidence of the content of the course previously taken (e.g. course outline, textbook). The student must show proof of an acceptable grade (A or B) in a comparable course. The course instructor/coordinator must sign the Petition form. The signature of the Chairperson of the Program constitutes final approval of the Petition.

6.5 Transfer of Coursework

The equivalent of at least six semesters of full-time graduate study is required for the Ph.D. A minimum of 36 units of course work in the area of the major subject, 9 units in the minor subject, and 18 units of dissertation must be completed. Graduate credit earned at other approved institutions, if accepted by the major department and the Graduate College and grade was A or B, may be counted toward the requirements of this degree, but will not be calculated in The University of Arizona G.P.A. There is no maximum as long as 30 units of residency are completed here. All required units of credit must be at the 500-level or above at The University of Arizona (or, in the case of transfer units, their equivalent at other institutions). Six units of 400-level credit taken at The University of Arizona may be used in the minor but will not receive graduate credit or be calculated in the graduate grade-point average. At least 23 units must be in courses in which regular grades (A, B, C) have been earned. Credit for correspondence courses or extension work obtained at other institutions will not be accepted for graduate credit. Students who wish transfer credit **MUST** submit an “**Evaluation of Transfer Credit**” form before the end of their first year of study.

6.6 Grades in Core Courses

Students **MUST** receive a grade of “B” or better in all core courses. A student who receives a grade of “C” or less in a core course must repeat that course. A student may petition to have this repeat requirement waived; a waiver can be granted only with the written approval of the course instructor and the Executive Committee. A grade of “C” or less in a core course constitutes grounds for dismissal from the Graduate Program.

6.7 Minor in Medical Pharmacology

The GPMP encourages students from other disciplines to minor in Medical Pharmacology. Nine credits in Medical Pharmacology are required for the minor. Ordinarily, these will include PHCL 620 with the remainder of the units from other GPMP courses of the 500 level or above. Students planning to minor in Medical Pharmacology must have at least one member of the GPMP faculty on their Dissertation Committee, and must submit the appropriate forms to the Thesis Director for approval and signature. Successful completion of 9 units of approved course work in Medical Pharmacology constitutes passage of the written comprehensive examination in the minor area.

6.8 Research Laboratory Rotations

In preparation for the selection of rotation laboratories and a dissertation research advisor, the student should become familiar with the research interests of the Program's Faculty. This is accomplished in two steps: (a) Soon after arrival, first-year students should examine and become familiar with the recent research papers by the Program's Faculty that will be maintained on the Program's website; and (b) Each student should meet individually, with several members of the Faculty of the Program during the first weeks in residence in order to discuss the research activities of, and opportunities with, those faculty. One suggestion is to arrange to spend 1 or 2 days in a laboratory. Each student receiving financial support from the Program **MUST** take (3) three eight-week research rotations in the first year in the program. The required course "Introduction to Pharmacology" PHCL 586A and B provides a formal mechanism for these rotations, the purpose of which is to encourage the student to have a "hands-on" experience in three areas of interest to her/him, to learn selected research methods in the field, and to become acquainted with the laboratory work and research group of three prospective dissertation

advisors. Faculty members will expect a serious and conscientious effort on the part of rotation students, but successful rotations will not necessarily lead to the completion of a specific project and/or publication.

Lab rotations will last 8 weeks, spending 10-20 hours/week in the lab. The expectations of both the student and the faculty member are that each rotation must be discussed in advance. To receive credit for PHCL 586A and B the student **MUST** submit a rotation report (form provided by the Graduate Program Coordinator) to the rotation advisor at the completion of each rotation. The rotation report **MUST** be signed by both the student and the faculty member. Upon completion of the first year rotation, the student **MUST** also submit a “First Annual Rotation Report Evaluation” form (see the Graduate Coordinator for the form) which will describe the work performed and the techniques learned. The report will be signed by the rotation advisor. A grade will not be issued until the report is turned in. Students may receive credit for PHCL 586 A and B during both the fall and spring semesters of their first year. The rotation focus or duration in a given laboratory can be altered at any time through mutual consent of the student and faculty member. All changes must be communicated in writing to the Graduate Program Coordinator and the Chair of the Program.

6.9 Research Advisor and Advisory Committee

Prior to the selection of a Research Advisor, the student must become familiar with the research interests of the faculty. Pertinent information on each faculty can be found on the Program’s website. Students should then meet individually with the faculty whose research is of particular interest or potential interest. Additional familiarity is gained through the laboratory rotations.

After these preliminary interviews and research laboratory experiences, the student decides with whom he/she would like to do his/her dissertation research. After consultation with, and agreement of the faculty member, the student must communicate this decision to the Chair of the Program before the end of the Spring Semester. No firm commitments between students and faculty should be made until this date. The Major Advisor must be a Principal or Affiliated Faculty member in the Program. Affiliated Faculty who serve as the Major Advisor must be actively involved in research. In the event that the research project is carried out in the laboratory of an individual who is not a member of the Program Faculty, a co-director from the Program Faculty must be appointed. Also, in the event the research project is carried out in the laboratory of an Affiliated Faculty member, permission from the Executive Committee is required.

At the time of Research Advisor selection, or shortly thereafter, an Advisory Committee is formed. The Advisory Committee consists of three (3) members from the Program Faculty and two (2) from the minor field and is chaired by the Research Advisor. The Research Advisor discusses membership of the Advisory Committee with the student and recommends the composition of the Advisory Committee to the Executive Committee which may modify Committee membership. Faculty members of the Advisory Committee are selected on the basis of their ability to provide useful advice about the research problem, to assist in selection of appropriate coursework, and to help guide the student to successful completion of degree requirements.

The Advisory Committee will meet with the student at least once a calendar year (June 1 – May 31) to review progress in coursework and research. The student will be responsible for presenting a dissertation proposal to the Advisory Committee which includes an outline of the background, preliminary data and goals of the proposed dissertation topic. The Advisory Committee will be helpful in focusing the objectives of

the proposed dissertation as well as limiting the scope. It is strongly recommended that the student meet with the Advisory Committee shortly before scheduling the final defense. You **MUST** indicate in your Annual Report the date of your annual committee meeting.

6.10 First-Year Evaluations

Each student undergoes an evaluation by the Executive Committee at the end of the first year in the program. These evaluations involve review of the student's research, course performance, attendance and participation in journal club and seminars, in laboratory rotations, and input from the student's rotation advisor(s). Progress in the selection of a dissertation advisor is an essential component. If the student fails to make satisfactory progress, the Executive Committee will recommend guidelines for improvement. **Failure to meet performance criteria in any of these areas is grounds for dismissal from the Program.**

6.11 Annual Reports

Each student is required to submit an Annual Report to the Executive Committee on or before June 1 (Appendix 2, Table 2). The Annual Report **MUST** be approved and signed by the Faculty Advisor (first-year students) or the Research Advisor (all other students) prior to submission to the Chair of the Program. Annual Reports are required every year.

By June 15 the Executive Committee decides if each first year student should be sponsored for the second year. Second year students are evaluated for Advancement to Candidacy at the time of their comprehensive examination. If performance is substandard, the Chair and Executive Committee may recommend a probationary period, withdraw program sponsorship, seek dismissal, or may request the student to fulfill the requirements

for a Master's degree. The Chair and Executive Committee will evaluate overall student performance in the Program to date. If performance has been satisfactory, approval will be granted.

The Annual Report will list courses taken and grades received, committee meeting(s) held, abstracts and papers published, seminars and report presentations, honors, outside funding applied for and received, and a succinct and lucid summary of research progress. The Annual Report **MUST** be approved and signed by the Chair of the Program and before the year's work is considered complete. **Students who do not meet this deadline will receive a one time letter requesting the information be provided immediately or the student will be dropped from the Program for failure to meet Program degree requirements.**

6.12 Qualifying Examination

The Graduate College's requirement to sit for the Ph.D. qualifying examination will be satisfied when the student has (a) passed the first-year evaluation, (b) selected a dissertation advisor and finalized the dissertation committee, (c) satisfactorily completed the required core coursework and (d) been favorably reviewed by the student's advisor, which will then make a recommendation to the Chair of the Program.

Every effort will be made by the Chair and the Executive Committee to help the student meet these requirements. **Failure to complete the requirements for the qualifying exam in a timely manner as determined by the Executive Committee, however, may be cause for dismissal from the Program.**

6.13 Plan of Study

A “Plan of Study” form **MUST** be submitted to the Program Chair for approval by the end of the third (3rd) semester in residence at The University of Arizona or to the Program Office two (2) weeks before the date of the written comprehensive examination which ever occurs first. The “Plan of Study” includes the forty-five (45) units of major coursework which include six (6) units of elective coursework, nine (9) units of minor coursework, and eighteen (18) units of dissertation for a total of seventy-two (72) units. This form must be signed by the major and minor advisor and the Program Chair. The student should be advised that the “Plan of Study” represents a contract between the student and the department for fulfilling the doctoral requirements. This document must not be taken lightly as the student is expected to finish all items listed therein.

6.14 Dissertation Advisor and Dissertation Committee

By mid-May of the first year, the student is expected to choose a dissertation advisor (the Major Advisor) from among the Principal or Affiliated Faculty of the Program and, having obtained the concurrence of the faculty member, to communicate this decision in writing to the Chair and Graduate Program Coordinator. The selection of a dissertation advisor may be delayed, in unusual circumstances, with permission from the Program Chair.

The Major Advisor’s responsibilities include:

- Supervising the student’s dissertation research; and
- Advising the student on the selection of a Dissertation Committee, on the preparation of the “Plan of Study”, on the preparation of a dissertation proposal, and on research toward and preparation of a dissertation.

The Dissertation Committee should consist of at least five members, including at least three members of the Faculty (Principal or Affiliate) of the Program (one of whom is the major advisor), and two faculty members from the student’s minor field. Note that since a Graduate

Program in Medical Pharmacology faculty may also be associated with the minor program, more than three members of the committee may belong to the GPMP. The student proposes the composition of the Dissertation Committee to the Program Chair, ordinarily by the end of May of the first year, for approval by the Executive Committee.

The responsibilities of the Dissertation Committee include:

- Advising the student on course work and research and to conduct a minimum of one annual advisory meeting.
- Conducting the comprehensive examinations, and
- Accepting the dissertation and conducting the final examination (dissertation defense).

Having chosen a major advisor, students will begin a research project. Credit for this research may be obtained by enrolling in PHCL 900.

Ph.D. PROGRAM IN MEDICAL PHARMACOLOGY

PH.D. COMPLETION GUIDELINES

YEAR	TIME-FRAME GUIDELINES
YEAR 1	<ul style="list-style-type: none"> • Complete Three Laboratory Rotations (students with M.S. degree complete two rotations, MD/Ph.D. students complete two rotations) • Complete Deficiency Coursework (if applicable) • Complete Fall Core Coursework • Complete First Year Annual Report (on or before June 1) • End of First Year - Selection of Mentor/Research Advisor*
YEAR 2	<ul style="list-style-type: none"> • Begin Doctoral Research • Complete Spring Core and Elective Coursework • Present Seminar • Form Research Advisory Committee • Prepare for Written portion of Comprehensive Examination • Prepare for Oral Comprehensive Examination
YEAR 3	<ul style="list-style-type: none"> • Pass Written Portion of Comprehensive Examination • Present Seminar • Research Advisory Committee Meeting • Doctoral Research

	<ul style="list-style-type: none"> • Pass Oral Portion of Comprehensive Examination
YEARS 4 and 5	<ul style="list-style-type: none"> • File for Advancement to Candidacy • Present Seminar • Doctoral Research • Research Advisory Committee Meeting • Pass Final Examination (Dissertation Defense) • Identify Employment Opportunities
YEARLY	<ul style="list-style-type: none"> • Students Must Receive at Least a B Grade in All Core Courses • Attend Weekly Seminar Program • Complete Annual Report (on or before June 1) • Students supported by or through the University are expected to enroll for 12 units of credit each academic semester.

*In subsequent years student support is the responsibility of the student's research advisor.

7. STUDENT RESPONSIBILITIES

The Graduate Program in Medical Pharmacology stresses to the student the following issues of utmost importance. First, any unauthorized use of drugs from a University laboratory will be grounds for dismissal from the Program in accordance with University procedures. Second, students are to conduct their experiments in an ethical manner; experimental fraud related to the creation of false data, plagiarism, or the unethical theft of others' work will not be tolerated by this Program. Students should keep their data in a format acceptable to the research advisor and be prepared to turn over their records to the advisor at any time. Third, the student is expected to complete the required and elective coursework in a timely manner under the ethical constraints of the College in which the course is being offered and in accordance with student conduct policies of the University. Finally, students are expected to secure their possessions and health by procuring appropriate insurance.

7.1 Course Registration & Graduate Assistantships

Registration is accomplished through WebReg which is located online at <https://sl.arizona.edu/student%5Flink/>. WebReg is the University's Web-based class registration tool, accessible through the password protected Student Link and can be

accessed from anywhere in the world. Detailed information including dates and times to register is available online through the Office of the Registrar at <http://www.registrar.arizona.edu/schedules/dates.htm> for fall & spring semesters and for summer terms.

7.2 Individual Health Insurance through Campus Health Services

Students who are hired as a Graduate or Research Assistant/Associate (GA/RA) are eligible to receive individual health insurance through Campus Health Services (621-6490). Once you have enrolled in the plan, your coverage, even if you resign or are terminated as a GA/RA, cannot be canceled. If you resign or are terminated from your GA/RA position during the period of coverage, you will be personally responsible for the payment of the remaining coverage. Registration for health insurance is completed through Student Link for the Fall semester and for the Spring semester (Spring semester includes Summer Session). It is important to remember that all students **MUST** re-enroll for health insurance each semester.

7.3 Orientation

All new students are required to attend both the Department and Graduate College Orientations.

7.4 Creating an Electronic Mail/Computer Account

All students are eligible to request a computer account. Accounts can be obtained by visiting University Information Technology (CCIT) website at <http://ccit.web.arizona.edu/index.php?id=email> for online account generation. Or, students can obtain setup information from the Program Office. *Please note that in order to establish an email account, students must first create a U of A Net ID. **Program notices,**

seminars, fellowship/scholarships, employment opportunities, etc. are posted on electronic mail so it is strongly recommended that all students immediately obtain an electronic mail/computer account.

7.5 Graduate Research/Teaching Assistants Minimum Registration

All graduate students in the Graduate Program in Medical Pharmacology who are supported by or through the University are considered to be full-time students. All full-time students are expected to enroll for some combination of coursework, research, or independent study that result in **twelve (12) units** of credit for the academic semester. Students completing their degree in an academic semester may register for six (6) units of credit **ONLY ONCE**. If the degree is not completed **twelve (12) units** of credit will be required during an academic semester.

7.6 Graduate Assistant/Associate Registration Payroll Deduction Plan

All Students who are in the payroll system and have not signed a “Notice of Appointment” form as a Graduate Research Assistant may sign up for the registration payroll deduction plan.

7.7 Vacation Policy

Graduate students are also research trainees and University employees, so interpretation of holidays can be complicated. As trainees anticipating a research career, graduate students should plan to take advantage of the semester breaks and the summer to work in the laboratory or library. They will find that these class breaks allow long periods of uninterrupted work that are essential for the completion of a research or writing project. First year students should consult with the Graduate Program Coordinator or Chair, or with

more advanced students for guidelines on how much vacation is considered appropriate. Once students are in the laboratory of a major professor, they should discuss with their advisor when to take vacations and how long they will be gone from the laboratory. Students are required to notify their Major Advisor and the Graduate Program Coordinator when they make vacation plans. Attendance at scientific meetings or specialized courses is not considered vacation.

7.8 Minimum Registration Requirements for Students NOT Receiving Funding

Each student who is associated with the University in any capacity that utilizes University facilities or faculty time during any academic semester **MUST** be registered for at least three (3) units of graduate credit. Each student completing requirements for an advanced degree **MUST** be registered during the semester or summer term during which requirements are completed, or the previous semester or term if requirements are completed during an intercession. This includes any semester during which a preliminary or final examination is scheduled. Students are not required to register for summer sessions.

Ph.D. students who have completed all the degree course requirements but have not completed the comprehensive examination should enroll for Research (PHCL 900). After completion of the comprehensive examination, Ph.D. students should enroll for dissertation (PHCL 920). Although a maximum of eighteen (18) units of PHCL 920 may be claimed for credit on a student's Course Study Program, the student may enroll for as many units as needed to complete.

M.S. students should enroll for thesis PHCL 910. Such registration may be used concurrently with other courses to reach the required three (3) unit minimum enrollment for academic semester. Although a maximum of five (5) units of PHCL 910 may be

claimed for credit on a student's Course Study Program, the student may enroll for as many units as needed to complete.

An M.S. degree is awarded only in rare instances in which a student who has passed the core required courses is unable, for whatever reason, to continue in the Program. In such instances the Executive Committee shall determine whether or not an M.S. degree is merited, and fulfill all the requirements of the Graduate College for that degree. Note that the completion of these requirements will ordinarily demand two years of work. **The Program generally accepts only students seeking the Ph.D. degree.**

7.9 Doctoral Continuous Enrollment Policy

A student admitted to a doctoral program **MUST** register each fall and spring for a minimum of three (3) graduate units from original matriculation, until the completion of all course requirements. When these requirements are met, doctoral students **MUST** register for a minimum of one (1) unit each semester until final copies of the dissertation are submitted to the Graduate Degree Certification Office. However, students receiving funding such as assistantships, fellowships, loans, grants, scholarships or traineeships may be required by their funding source to register for more than one (1) unit to meet full-time status requirements, and should check with the Graduate Program Coordinator regarding such requirements to ensure that they remain qualified for funding. If degree requirements are completed during an intercession, the student **MUST** have been registered during the preceding semester.

Unless excused by an "Official Leave of Absence" (which in no case may exceed one year throughout the student's degree program), all graduate students are subject to the Continuous Enrollment Policy and **MUST** pay in-state and out-of-state tuition and fees in

order to remain in the program. If the student fails to obtain a “Leave of Absence” or maintain continuous enrollment, he or she will pay all overdue tuition and fees, including cumulative late penalties. No tuition or registration waivers will be applied retroactively.

7.10 Journal Club & Seminar

Seminars are an important component of the Graduate Program. Student seminars and program seminars are held almost weekly and are sponsored by the Graduate Program and the Department of Pharmacology. All students are required to attend both seminars. Failure to attend seminar constitutes valid grounds for dismissal from the Program. After completion of formal courses and during the pursuit of the dissertation or thesis research, students are required to continue to attend departmental seminars for their term of residence in the Program.

1) Student Seminar: (Wednesday, 11:00 – 12:00 p.m., AHSC 8403).

These seminars are presented by the students in the Graduate Program. Seminars are an opportunity for students to practice presentation skills and to update the faculty and students on their research progress. **Students are required to register for PHCL 596 C for the Fall and Spring Semesters for their term of residence in the Program.** Grades are calculated based on presentation and attendance. First year students are not required to present a seminar, so their grade will be determined by attendance only. Ph.D. students are required to present three (3) seminars, MD/Ph.D. and PharmD/Ph.D students are required to present two (2) seminars, and M.S. students are required to present one (1) seminar.

2) Program Seminars:

These seminars are presented by faculty within the University or from outside the University as guests of GPMP faculty. These seminars are presented

by experienced scientists and consist of an update of recent research in the speaker's laboratory. Additional seminars will be scheduled throughout the year. **All students are required to attend.**

3) Journal Club: (Wednesday, 11:00-12:00 p.m., Sarver Heart Center 4137)

Each student is required to attend the biweekly meeting of the Critical Literature Review and Seminar course (PHCL 596C) and to lead a discussion on a scientific article selected in consultation with a GPMP faculty. It is the student's responsibility to notify the Graduate Coordinator so that the article can be disseminated to the Program's faculty and students. The student's attendance and performance in these forums will be evaluated by the course Director with input from attending faculty.

7.11 Candidacy for an Advanced Degree

Admission to graduate study does not imply admission to candidacy for an advanced degree. Candidacy is determined after the student has demonstrated, at The University of Arizona, the ability to accomplish work of graduate quality with originality and independence. Until admitted to candidacy, a student should not plan to take the final examination at a particular time.

7.12 Satisfactory Academic Progress

A high level of performance is expected of students enrolled in a graduate degree program. In addition to maintaining a minimum of 3.0 GPA, students are required to demonstrate satisfactory academic progress toward degree completion. The Program's policies (see below) on what constitutes satisfactory academic progress is on file at the Graduate College in the Office of the Dean. When a student fails to achieve a minimum 3.0 GPA or does not demonstrate satisfactory academic progress toward completion of the

degree according to the Program's written policies, the Program will request that the Graduate College convert the student to non-degree graduate status.

- 1) All students are required to submit an Annual Report signed by the faculty or research advisor on or before June 1st of each calendar year while in the Program.
- 2) All students supported by or through the University are considered to be full-time students and are expected to enroll in twelve (12) units of credit for each academic semester.
- 3) All students are required to attend the weekly Critical Literature Review and Seminar course. Ph.D. students are required to present three (3) seminars, MD/Ph.D. and PharmD/Ph.D. students two (2) seminars, and M.S. students one (1) seminar during their course of study. M.S. students who transfer to the Ph.D. program present two (2) in addition to the one (1) seminar as an M.S. student.
- 4) All students are required after the formation of an advisory committee, to have at least one advisory committee meeting per year while in the Program.
- 5) Ph.D. students are required to receive at least a B grade in all core courses.

7.13 Minimum Academic Requirements

At least half of the student's total credits must have letter grades assigned (i.e. A, B, C, etc). Students **MUST** maintain a 3.0 GPA. Probation will result if a student's GPA falls below this minimum. A student on probation will receive a letter from the Graduate

College outlining what must be done to resume good standing. A student can be dismissed if the student's GPA does not improve in the next semester to a 3.0 GPA. **An overall GPA of 3.0 must be obtained to receive the masters or doctoral degree.**

7.14 Academic Probation

Students who have a cumulative grade-point average of less than 3.0 will be placed on academic probation. Students on probation are required to meet with their graduate advisor, discuss the steps to be taken to remediate the problem(s) that led to the probationary status, and devise a written plan of action to be submitted to the Graduate College. **Students who are on probation for two (2) consecutive semesters will be converted automatically to non-degree status by the Graduate College.** Such students may continue to take graduate courses in non-degree status. They can apply for readmission to a degree program as early as the semester after their conversion to non-degree status if they achieve a cumulative grade point average of at least 3.0 through additional graduate coursework. Such a request must be supported by the head of the major department and approved by the Dean of the Graduate College.

7.15 Leave of Absence Policy

A "Leave of Absence" (LOA) may affect the status of a graduate student's financial aid. Students are responsible for determining the requirements of their funding agency and/or academic unit prior to applying for a "Leave of Absence."

1) Academic Leaves

Academic LOAs (i.e. leaves taken for coursework elsewhere, for research, field work, internships, professional development, etc.) are handled on a case-by-case basis by the student's department and the Graduate College.

2) Personal Leaves

Graduate students in degree programs may be granted a “Leave of Absence” for a maximum of one (1) year throughout the course of their degree program by the Dean of the Graduate College upon the written recommendation of the student’s advisor and department head. A LOA may be granted retroactively for up to one (1) year. *[Refunds of tuition paid for the retroactively applied LOA will not be granted]*. LOA’s are granted on a case-by-case basis or compelling reasons including birth or adoption of a child, personal or family reasons, military duty, or financial hardship. Students will be readmitted without reapplying to the department and the Graduate College. Only when the LOA is approved prior to the beginning of the semester for which the LOA is being sought will students be exempted from fees for that semester. Only academic services or facilities available to the general public can be used during the LOA.

Failure to obtain a “Leave of Absence” or remain in continuous enrollment will result in penalties, as described in the Continuous Enrollment policy requirements.

7.16 Tax Information

Students should be aware of current tax laws which impact salaries or stipends from graduate teaching/research assistantships, fellowships, and stipends. Contact the IRS as 1-800-829-1040 and ask for the scholarship/fellowship publication or visit the IRS forms/publications website at http://www.irs.gov/forms_pubs/.

7.17 In-House M.S. Medical Pharmacology Graduate Students Transfer to Ph.D. Program

The M.S. degree is a terminal degree and will require reapplying for admission to the Ph.D. Program. Regardless of the option chosen the Executive Committee will vote for acceptance or rejection of the application.

1) Option One:

Compete with outside applicants by having a completed application submitted on or before the January 1st deadline. The application will be judged relative to all other applications.

2) Option Two:

Completion of all M.S. degree requirements;
First author on a published or accepted for publication peer-reviewed publication, and a letter from the student's advisor supporting a transfer into the Ph.D. program. If this option is chosen, your file can be acted upon immediately.

8. COMPREHENSIVE EXAMINATION

In order to advance to formal candidacy in the Ph.D. degree, the student **MUST** pass both the written and oral portions of the Comprehensive Examination. After residency (see Graduate College guideline) and course requirements have been fulfilled, the Dissertation Committee instructs the student to prepare for the Comprehensive Examination. Students are advised to consult the Graduate College website <http://grad.arizona.edu/degrecert/doctoral-exams>, and the Graduate Coordinator regarding the forms and scheduling requirements of the Graduate College. Ordinarily, students in Medical Pharmacology will complete the written and oral components of the Comprehensive Examination at the end of their 4th semester or before the beginning of their 5th semester in the program. A separate requirement of the Medical Pharmacology Program, the **Dissertation Proposal** will be completed during the following year. Upon petition from the student's

Dissertation Committee, however, the Executive Committee may grant an extension for compelling reasons. The examination shall consist of written and oral parts, in accordance with regulations of the Graduate College. In order to sit for the Comprehensive Exam the student will have:

- A. Passed the first-year evaluation,
- B. Selected a dissertation advisor and finalized the composition of the dissertation committee,
- C. Received a grade of B (3.00) or better in all core coursework,
- D. Been favorably reviewed by the Executive Committee.

8.1 Objectives of the Comprehensive Examination

The objectives of the Comprehensive Examination are:

- A. To determine if the student has attained adequate breadth of knowledge in the pharmacological sciences. An adequate breadth of knowledge includes the material covered in the required courses (620, 595C, 551A, 501 A & B), as well as in the courses that satisfy the minor degree.
- B. To determine whether the student has attained a sufficient depth of knowledge in selected sub-disciplines of pharmacological sciences, including knowledge of the literature, concepts and experimental approaches in the area of specialization.
- C. To assess the student's ability to think clearly and independently about topics in the pharmacological sciences and to express these thoughts orally and in writing.
- D. To satisfy Graduate College requirements.

8.2 Timing of the Comprehensive Examination

The Comprehensive Examination will ordinarily take place at the end of the student's fourth semester and before the beginning of the 5th semester in the Program. To remain eligible for funding from the Program, students **MUST** complete the written and oral portions of the Comprehensive Examination by the end of the 5th semester (Fall semester, Year 3). In exceptional circumstances, such as illness, or a family crisis, students may petition the Executive Committee to extend the deadline.

8.3 The Comprehensive Examination Committee

During the 4th semester in the program (Spring of Year 2) students will select a Comprehensive Examination Committee. As described above, this committee will consist of 5 members (including the advisor), selected to reflect the student's minor and area of interest in Medical Pharmacology (see Graduate College rules in the Handbook). A member of the committee other than the major advisor will serve as chair. This committee may or may not be identical to the student's Dissertation Committee (see below). The Program will provide each member of the committee with the "Comprehensive Examination Guidelines" which outlines the goals and format of the Comprehensive Examination. The Program will provide the committee chair with the "Comprehensive Exam Committee Chair Checklist" (see Appendices).

The student will arrange a meeting of the Comprehensive Examination Committee at least 6 weeks prior to the anticipated date of the Written Comprehensive Examination. At this meeting the general research interests and background (rotations, courses) of the student will be discussed. The student and committee will discuss a time-table for the Comprehensive Examination. The Committee will inform the student of its general expectations and help the

student to prepare for the Examination by suggesting review articles or other readings.

Questions for the Written Comprehensive Examination will be submitted to the Chair of the Comprehensive Examination Committee at least 2 weeks in advance of the examination. The Comprehensive Examination Committee will review the questions to ensure that there is a reasonable degree of uniformity among the examinations given to all students.

If the student's minor area of study is in a department outside of Pharmacology, the Graduate College gives the Minor Department the option of waiving participation in the written portion of the Comprehensive Examination. However, the Minor Department **MUST** participate in the oral portion of the Comprehensive Examination.

8.4 Written Comprehensive Examination

The Examination will have a closed-book format. The Examination must evaluate the student's breadth of knowledge in pharmacology, but should also reflect the specialized interests that each student has developed by this stage. To ensure that all levels of understanding in pharmacology are addressed, the examination is divided into: 1) Principles of Pharmacology, 2) Systems Pharmacology, and 3) Molecular Pharmacology. The Examination will be taken over a period of 3 days, with the student receiving the Principles of Pharmacology questions on day one, Systems Pharmacology questions on day two, and Molecular Pharmacology questions on day three. The student must answer 2 of 3 questions in each area. On each day the student will be provided with a quiet room containing a computer with a word processing program that the student is familiar with. Students will have 3 hours to answer 2 questions each day. The student will be expected to develop in-depth arguments using practical examples in his/her answers.

The answers will be graded by the Committee member who wrote the question. Students will receive a grade of pass (P) or fail (F) and written comments which they are encouraged to discuss with the grader. A passing grade (P) on 5 of the 6 questions (80%)

is necessary to receive a “Pass” for the Examination. A failure on two questions will constitute failure of the Written Comprehensive Examination and the student will be required to retake the sections in which the fails were given. Should the student fail three questions, a retake of the entire Examination will be required, after mentoring by Committee members (ordinarily within one month). On retake, a failure on one question will result in a failure, and the student will be required to retake the entire examination. Students who are retaking the entire examination and fail two questions will be dismissed from the Program.

After the written portion of the Comprehensive Examination has been completed successfully, the student is required to file an "Application for Oral Comprehensive Examination for Doctoral Candidacy" form with the Graduate College. This form and instructions for its completion can be found on the Graduate College's Website at: <https://grad.arizona.edu/gc/> . All graduate forms are accessed through “My Grad Coll” using a Net ID and Password.

This form (the original plus three copies) **MUST** be submitted at least three weeks prior to the date of the Oral Comprehensive Examination. Before submitting this form the student **MUST**: a) Schedule the examination with the members of the student's committee; b) Provide the committee with the “Plan of Study” form, including all of the courses that will be used to fulfill your degree requirements; and c) Obtain signatures from all of the Comprehensive Examination committee members. Students **MUST** be registered during the semester the written and oral examinations are taken, and these examinations **MUST** take place within six months of one another.

See the Graduate College Degree Certification website located at <http://grad.arizona.edu/degrecert/steps> for further information pertaining to “steps to completing your degree.”

8.5 Written Comprehensive Examination Committee Chair Guidelines

The following is a list of guidelines for the Chair of the Comprehensive Examination Committee (NOT the advisor). For further details, please refer to the Medical Pharmacology Program Handbook. Questions may be directed to the Graduate Program Coordinator or the Program Chair.

Doctoral students must select a Comprehensive Examination Committee at the end of their 4th semester or before the beginning of their 5th semester in the Program. The student will select one member (not the advisor) to chair the Committee. This chair will be responsible for:

- A. Chairing meetings of the Comprehensive Exam Committee
- B. Collecting the written questions from the other members and core course directors for the written portion of the Examination
- C. Submitting the questions to the Program Committee for review
- D. Submitting the questions to the Graduate Program Coordinator for distribution (if applicable)

Once the sets of questions are completed, the Chair of the Committee either receives all the questions and distributes them to the various members, or has the Graduate Program Coordinator distribute to the members and receives a copy.

The Chair of the Committee must insure that the exam is graded in a timely manner.

Once the exam is graded the Chair of the Committee collects the graded questions from the exam committee and core course directors, notifies the Committee of the results, notifies the Graduate Program Coordinator of the results, and notifies the student. The Chair

of the Committee provides a copy of the graded exam to the Program Office to be filed and returns the original, graded exam to the student.

If the result is “**Pass**”, the student proceeds to plan for taking the Oral Exam.

If the result is “**Fail**”, the Chair of the Committee follows the guidelines for repeating the written exam.

8.6 Oral Examination

The Graduate College describes the Oral Comprehensive exam as follows:

“Upon successful completion of the written examinations in the major and minor(s), the Oral Comprehensive Examination is conducted before the Examining Committee of the faculty. This is the occasion when faculty committee members have both the opportunity and obligation to require the student to display a broad knowledge of the chosen field of study and sufficient depth of understanding in areas of specialization. Although a discussion of proposed dissertation research may be of importance, such a discussion can not be used to satisfy the requirements of the Oral Comprehensive Examination. The examining committee must attest that the student has demonstrated the professional level of knowledge expected of a junior “academic colleague.”

Upon successful completion of the Written Comprehensive Examination, the student and Committee may schedule the oral portion. The Oral Comprehensive Examination **MUST** be completed not less than 3 weeks and not more than 6 months after the written portion. The exam will last a minimum of 2 hours but not to exceed 3 hours. The exam will begin with those questions not answered by the student on the Written Comprehensive

Examination. The student should be prepared to answer questions not only related to topics previously discussed with the committee, but also related to material covered in the required core courses. Students have found that an excellent way to prepare for the oral exam is to hold mock exams in their laboratory. The students' mentor can organize these mock exams and other students can serve as questioners. Students may not bring notes into the examination. Graduate College requirements for passing the Oral Comprehensive Examination will be followed. Students may be permitted to retake the Oral Comprehensive Examination once should they fail in the first attempt. The Graduate College stipulates a 4 month waiting period in this situation.

There is no longer a Graduate College Representative. The student's committee chair (not the mentor) now serves in the capacity of the Reporter during the oral exam. After successful completion of the Written and Oral Comprehensive Exams, the student will be promoted from Graduate Assistant to Graduate Associate (effective immediately) and may enroll in PHCL 920 (dissertation research). At least 18 units are required, with no more than 9 taken in any one semester.

8.7 Committee Appointment Form (formerly Advancement to Candidacy form)

When the student has an approved doctoral "Plan of Study" on file, has satisfied all course work, language, and residence requirements, and passed the written and oral portions of the Comprehensive Examination, he or she **MUST** file a "Committee Appointment Form." This form is required as soon as the student has a dissertation chair and **MUST** be submitted to the Graduate Degree Certification Office as soon as requirements are met but **no later than six months before the Final Oral Defense Examination is scheduled**. Deadlines for submission of paperwork pertaining to doctoral programs are available in departments, in the Graduate Degree Certification Office,

or online at <http://grad.arizona.edu/current-students/deadlines>. The “Committee Appointment Form” can be accessed on the Graduate College web site by logging into “My Grad Coll”. At the time you submit your “Committee Appointment Form” your bursar account will be billed fees for candidacy, dissertation processing, and archiving. This is a **one-time fee** and you will not be billed again if you change your anticipated graduation date. Copyrighting is optional and carries an additional fee.

8.8 Instructions/Templates for Format and Writing of the Thesis

Instructions and templates describing proper format for the thesis/dissertation is available at the Graduate Degree Certification Office at <http://grad.arizona.edu/degrecert/samples-templates>. It is recommended that every student review this before attempting to prepare a thesis/dissertation. In addition, the student should discuss the thesis format or dissertation format with his/her advisor as technical writing requires additional constraints. For the title page the Program’s correct name is **“GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY.”**

1) Use of Copyrighted Material in Theses and Dissertations

The use of copyrighted materials in a thesis, dissertation or document usually requires formal permission. Any exceptions, sometimes pertaining to small fractions of other documents, are governed by the concept of “fair use” and the following factors must be weighed: the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; the nature of the copyrighted work as a whole; and the effect of the use upon the potential market for or value of the copyrighted work.

According to the Association of American University Presses, permission is required for quotations that are reproduced as complete units (poems, letters, short stories, essays, journal articles, complete chapters or sections of books, maps, charts, graphs, tables, drawings, or other illustrative materials).

IF THERE IS ANY DOUBT, THE STUDENT SHOULD OBTAIN PERMISSION FROM THE COPYRIGHT HOLDER.

Permission to use copyrighted material should be in writing and retained by the author. The release letters should indicate that permission extends to microfilming and publication by University Microfilms International (UMI) and the copyright owners are aware that UMI may sell, on demand, single copies of the thesis, dissertation or document, including their materials, for scholarly purposes. UMI requires copies of permission letters to be attached to the publication agreement and assumes no liability for copyright violations. If permission letters are not supplied, copyrighted materials may not be filmed.

The process of obtaining permission to use copyrighted material may be both time-consuming and expensive and should be initiated as early as possible during the conduct of the thesis, dissertation or document preparation. It does no harm and is good practice to obtain permission to use non-copyrighted material, which may or may not be acknowledged in the text (note phraseology in Statement by Author required for any thesis, dissertation or document).

2) Inclusion of Published Papers in Dissertations and Theses

Students are encouraged to publish the results of their thesis/dissertation in a timely fashion. This usually means any manuscripts included in the thesis/dissertation are peer reviewed and accepted for publication by the time the student reaches his/her final defense. In order to facilitate the inclusion of

manuscripts in the thesis/dissertation the following policy governs such inclusion.

Types of Publications

Manuscripts for inclusion **MUST** be peer reviewed and accepted for publication. The final decision concerning whether the manuscript is appropriate and acceptable for inclusion resides with the student's advisory committee.

Authorship

If, except for the introduction and conclusion sections, the entire thesis/dissertation consists of peer reviewed manuscripts, then the student **MUST** be first author on at least one of these works. In the event the peer reviewed manuscripts represent only a part of the thesis/dissertation, they may consist of manuscripts on which the student is not first author *if the committee feels that the student's contribution is significant and if such inclusion adds substantively to the thesis/dissertation.*

Papers in which the student is first author and the thesis/dissertation advisor is the senior author are generally considered to be appropriate for inclusion in the thesis/dissertation. In those cases in which the student is first author on a manuscript that has two or more co-authors, or when the student is not recognized as the primary author, *the committee will assess whether inclusion in the thesis/dissertation of a part or all of the published work is appropriate.* The committee will provide the Executive Committee with a written statement indicating that they have considered and found to be

appropriate for inclusion in the thesis/dissertation any multiple author papers or manuscripts.

Conflict of Interest

While all students are encouraged to enlist the assistance and collaboration of their committee members, there is a risk of an appearance of a conflict of interest if all committee members are also co-authors with the student. Thus, at least one member of a student's final examination committee must be a non-co-author and/or not have contributed significantly to the material contained in the thesis/dissertation.

9. TEACHING

Because teaching is an important element in academic careers in Pharmacology, supervised experience in university-level teaching is considered desirable. Each student is encouraged to assume certain limited teaching responsibilities that are deemed to be an integral and essential part of her/his pre-doctoral education.

10. ANNUAL ADVISORY MEETINGS FOR ADVANCED STUDENTS

The student shall arrange a meeting with her/his Dissertation Committee during the fall semester in the second and subsequent years in the Program. Prior to that meeting, the student submits to the Dissertation Committee a written report (ca. 3-5 typed pages) on her/his progress toward completion of course work and dissertation research over the preceding year. A summary of this information must be submitted to the Director. At the meeting, the student presents a carefully prepared and illustrated oral version of the report (ca. 30 min) outlining research progress over the prior year and submits to questioning about that work. The Committee then discusses the student's progress with the Major Advisor (in the absence of the student). A brief report of each such

meeting is to be submitted to the Program Chair by the chairperson of the student's Dissertation Committee. In addition, the student's comments concerning the Major Advisor may be submitted, in confidence, to the Program Chair or by another member of the Dissertation Committee.

11. DISSERTATION AND DEFENSE

11.1 Dissertation Proposal

Having passed the Comprehensive Examination, the student and her/his advisor will develop a realistic plan of research that will lead to the completion of the dissertation. Once this research plan has been decided, the student will arrange a meeting of the Committee for an oral defense of, as well as critical advisory input about the research plan.

11.2 Dissertation

Preparation of the written dissertation shall follow the regulations of the Graduate College's Degree Certification Office. After writing and correcting the draft of the complete dissertation, the candidate **MUST** submit the draft to each member of the Dissertation Committee. Ideally, the Dissertation Committee should receive the draft 3 weeks before filing the form "Announcement of Final Oral Examination". However, the exact timing of the submission is at the discretion of the Dissertation Committee, but candidates **MUST** file the "Announcement of Final Oral Examination" form with the Graduate College no later than 3 weeks before the date of the Oral Dissertation Examination. This form requires the signatures of all members of the Dissertation Committee, signifying their assessment that the dissertation is ready to defend – although revisions may still be required. Thus, it is suggested that the final draft of the dissertation be submitted to committee members at least 6 weeks before the exam date.

This allows 3 weeks for them to make a general assessment. Committee members will then provide the candidate with detailed suggestions or requirements for revision before, or on the day of, the final exam. This form can be accessed by visiting the Graduate College website at <http://grad.arizona.edu/current-students/forms> and filled out online by logging into “My GRadColl” using your Net ID and password.

11.3 Final Examination:

Formal defense of the dissertation constitutes the Final Examination. The defense comprises two parts:

- One-hour public colloquium in which the candidate presents her/his research and explains how it contributes to the advancement of understanding pharmacology, and
- An oral examination by the candidate’s Dissertation Committee and other qualified persons acceptable by the committee. There is no minimum time limit for the Final Examination, but the Examination may not exceed three hours.

After successful completion of the Final Examination, the candidate must submit a final copy of the dissertation to the Graduate Program Coordinator for a format review. The candidate makes any corrections required and provides two signed copies of the final dissertation to the Graduate Degree Certification Office. Approval pages, which must accompany these copies, are available in the Graduate Degree Certification Office and it is recommended that the student take these approval pages to the Final Examination

for signatures. The candidate also provides a final copy of the dissertation to the Graduate Program Coordinator to be bound for the Program's library.

APPENDIX I –MEDICAL PHARMACOLOGY PROGRAM FORMS

GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY FORMS

RESEARCH LABORATORY ROTATION EVALUATION FORM

ANNUAL REPORT FORM

FIRST YEAR LAB EVALUATION & ANNUAL REPORT FORM

STEPS TO COMPLETING YOUR Ph.D. DEGREE

WRITTEN COMPREHENSIVE EXAMINATION COMMITTEE CHAIR CHECKLIST

M.S. COMPLETION OF GUIDELINES FORM

M.S. EXAMPLE OF COURSE SCHEDULE

GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY
RESEARCH LABORATORY ROTATION EVALUATION FORM

To be completed by Student:

Date:

Student's Name:

Laboratory Director:

Title of Written Report:

COPY OF WRITTEN REPORT MUST BE INCLUDED WITH THIS REPORT

To be completed by Laboratory Director:

PERFORMANCE CRITERIA

Initial familiarity with project:

Library and literature skills:

Use of scientific method and pharmacologic principles:

Attitude toward project:

SPRING

Course Number (ex. PSIO 603A)	Name	Units	Grade
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******* If more space is needed for answering questions B-G attach a typed listing *******

B. **ALL SEMINAR(S) PRESENTED** (title and date)

C. **ALL PAPERS AND ABSTRACTS PUBLISHED** (since admission into Program in chronological order with complete titles and authors):

D. **HONORS and AWARDS** (list full name, date, and amount of honor/award for last academic year):
Applied For:

Received:

E. **MEETINGS ATTENDED AND REPORTS PRESENTED** (list complete name and date(s) of meeting for last academic year):

F. **ALL APPLICATIONS FOR FINANCIAL SUPPORT** (complete name and date(s) of support applications since admission to Program):

G. ADDITIONAL ACHIEVEMENTS:

H. SUMMARY OF RESEARCH PROGRESS (hypothesis, experiments, results, conclusion, future plans).

Work of the year is incomplete until this report has been approved by the Research Advisor AND by the Executive Committee.

APPROVAL OF RESEARCH ADVISOR:

APPROVAL OF EXECUTIVE COMMITTEE:

Signature

Date

Signature

Date

**GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY RESEARCH LABORATORY ROTATION
EVALUATION FORM
and
FIRST YEAR ANNUAL REPORT**

To be completed by Student on or before June 1st:

Date:

Student's Name:

Laboratory Director:

Title of Written Report:

COPY OF WRITTEN REPORT MUST BE INCLUDED WITH THIS REPORT

To be completed by Laboratory Director:

PERFORMANCE CRITERIA

Initial familiarity with project:

Library and literature skills:

Use of scientific method and pharmacologic principles:

Attitude toward project:

Area of Specialization:

***** If more space is needed for answering questions B-G attach a typed listing *****

B. **ALL SEMINAR(S) PRESENTED** (title, date).

C. **ALL PAPERS AND ABSTRACTS PUBLISHED** (since admission into Program in chronological order):

D. **HONORS, AWARDS, MEETINGS ATTENDED, REPORTS PRESENTED** (last academic year):

E. **ALL APPLICATIONS FOR FINANCIAL SUPPORT** (since admission to Program):

IF YOU DID NOT COMPLETE THE NUMBER OF LABORATORY ROTATIONS ASSIGNED, PRESENT JUSTIFICATION BELOW:

Work of the year is incomplete until this report has been approved by the Executive Committee.

STUDENT'S SIGNATURE:

APPROVAL OF EXECUTIVE COMMITTEE:

Signature

Date

Signature

Date

A CHECKLIST FOR COMPLETING THE STEPS TO YOUR DEGREE

WHAT	WHEN	
Submit lab rotation report	At the conclusion of each rotation	_____
Choose your advisor	2-3 weeks before last rotation ends	_____
Meet with your advisor and establish your Plan of Study.	Before beginning of 2 nd year	_____
Submit annual report to Graduate Program Office	June 1 st of every year in the Program	_____
Notify Graduate Program Office of intent to take Written Comprehensive exam.	End of second year in Program	_____
Submit doctoral plan of study to Graduate Program Office.	3 weeks prior to written Comprehensive exam	_____
Select your committee	After completion of Written Comprehensive exam	_____
Schedule the Oral Comprehensive Examination when essentially all course work has been completed.	15 working days (3 weeks) before the date of the examination.	_____
Submit the doctoral advancement to candidacy form to the Graduate Degree Certification Office. The advancement to candidacy form must be approved before scheduling the Oral Defense Examination. Give a copy to the Graduate Program Office.	NO LATER THAN SIX MONTHS BEFORE THE ORAL DEFENSE EXAMINATION	_____

Submit the final draft of the dissertation to your committee and Grad. Program Office.	2 weeks before final oral exam	_____
Submit the announcement of final oral examination to the Graduate Degree Certification Office. Give a copy to the Graduate Program Office.	3 weeks before the date of the exam	_____
Submit the final two library copies of the dissertation to the Graduate Degree Certification Office.	See published deadlines on the Graduate Degree Certification Home Page located at: http://grad.arizona.edu/degrecert/	_____

The Medical Pharmacology Written Comprehensive Examination Committee Chair Checklist

The following is a checklist for the Chair of the Comprehensive Examination Committee (NOT the advisor). For further details, refer to the Graduate Program in Medical Pharmacology Handbook. Questions may be directed to the Program Coordinator or the Program Chair.

Doctoral students **MUST** select a Comprehensive Examination Committee at the end of their 4th semester or before the beginning of their 5th semester in the Program. This committee is usually the same as the student's Dissertation Committee. The student will select one member (NOT the advisor) to chair the committee. **The Chair is responsible for convening meetings of the Comprehensive Examination Committee and for managing the development and execution of the exam.**

At the initial meeting of the Exam Committee:

_____ Determine the date for the written exam, and if possible potential dates for the oral exam (if the written exam is successfully passed).

_____ Determine the areas on which the student will be examined, and which committee members are responsible for composing the questions (3 systems, 3 principles, 3 molecular). Solicit one exam question from each of the course directors for Principles of Pharmacology (620), Scientific Writing & Ethics (595 B), Molecular Pharmacology (551 A), and Pharmacological Basis of Therapeutics (501 A & B).

A draft of the exam must be submitted at least 1 week prior to the exam, so that the Program Committee can evaluate it for consistency with program goals, and suggest changes when warranted.

_____ Once the questions are finalized, the exam should be submitted to the Program Coordinator at least 1 week prior to the exam date.

_____ The Program Coordinator will administer the exam (unless instructed otherwise).

_____ The Program Coordinator will then distribute the questions to the appropriate committee

members and core course directors for grading, and the graded questions are returned to the Committee Chair.

The Chair of the Examination Committee must insure that the exam is graded in a timely manner.

_____ Once the exam is graded the Chair of the Committee collects the graded questions, notifies the Committee, the Program Coordinator, and the student of the results.

_____ The Chair of the Committee provides a the original graded exam to the Program Office to be filed.

_____ If the result is “pass”, the student proceeds to plan for taking the Oral Exam.

_____ If the result is “fail”, the Chair of the Committee follows the guidelines for repeating the written exam by calling another Committee Meeting to determine procedure.

GRADUATE PROGRAM IN MEDICAL PHARMACOLOGY

M.S. COMPLETION GUIDELINES

YEAR	TIME-FRAME GUIDELINES
YEAR 1 and Summer	<ul style="list-style-type: none"> • Complete Deficiency Coursework (if applicable) • Take Core Coursework • Selection of Mentor/Research Advisor • Form Research Advisory Committee • Begin Thesis Research
YEAR 2 and Summer	<ul style="list-style-type: none"> • Complete Core Coursework • File for Application to Candidacy • Present Seminar • Thesis Research
YEAR 3	<ul style="list-style-type: none"> • Pass Final examination (Thesis Defense) • Identify Employment Opportunities
YEARLY	<ul style="list-style-type: none"> • Complete Annual Report (on or before June 1) • Attend Weekly Seminar Program • Thesis Research Advisory Committee Meeting • Students supported by or through the University are expected to enroll for 12 Units of Credit each academic semester.

*The MS is a terminal degree and will require reapplying for admission to the Ph.D. program. The Executive Committee will vote for acceptance or rejection of the application.

**Example Course Schedule for
M.S. in Medical Pharmacology**

FALL – FIRST YEAR

<u>Course</u>	<u>Units</u>
*Biochemistry Scientific Writing Strategies, Skills & Ethics PHCL 595 B	2
Principles of Pharmacology PHCL 620	3
Seminar PHCL 596 C	1
**Intro to Med Pharm PHCL 586 A	1
Biostatistics EPID 576 A	3
Research Meeting PHCL 696 A	1
Supplemental Registration PHCL 930	<u>1</u>
TOTAL	12

SPRING – FIRST YEAR

<u>Course</u>	<u>Units</u>
*Biochemistry Systems Physiology PSIO 603 A	6
Seminar PHCL 596 C	1
**Intro to Med Pharm PHCL 586 B	1
Research Meeting PHCL 696 A	1
Med Pharm PHCL 501 A	<u>3</u>
TOTAL	12

FALL – SECOND YEAR

<u>Course</u>	<u>Units</u>
Seminar PHCL 596 C	1
Research Meeting PHCL 696A	1
Research PHCL 900	3
Required Elective	3
Med Pharm PHCL 501 B	3
Supplemental Registration PHCL 930	<u>1</u>
TOTAL	12

SPRING – SECOND YEAR

<u>Course</u>	<u>Units</u>
Molecular Targets PHCL 551 A	3
Seminar PHCL 596 C	1
Research PHCL 910	3
Research Meeting PHCL 696A	1
Supplemental Registration	<u>4</u>
TOTAL	12

FALL – THIRD YEAR

SPRING – THIRD YEAR

<u>Course</u>	<u>Units</u>	<u>Course</u>	<u>Units</u>
Seminar PHCL 596 C	1	Seminar PHCL 596 C	1
Research Meeting PHCL 696 A	1	Research Meeting PHCL 696 A	1
Thesis PHCL 910	3	Thesis PHCL 910	1
Supplemental Registration PHCL 930	<u>7</u>	Research PHCL 900 (if needed)	<u>9</u>
TOTAL	12	TOTAL	12

*Biochemistry, Biostatistics and Physiology may be waived via petition and electives can be substituted.

Biochemistry options are BIOC 462 A, B OR BIOC 460 and 461; BIOC 411 and 511; OR ANAT 577. Biochemistry 400 level courses are considered deficiency coursework and will not count toward your degree unit requirements.

**Intro to Medical Pharmacology - rotation

APPENDIX II – GRADUATE COLLEGE REGULATIONS

GENERAL GRADUATE COLLEGE AND/OR UNIVERSITY REGULATIONS

Arizona Universities Collection of Fees Policy*

The universities shall collect at the time of registration the payment or promise of payment on only those fees which are required for the proper operation of the universities and which are subject to the control of and disbursement by the universities. Each university shall establish procedures to collect outstanding obligations owed by students and former students. Each university shall maintain a system to record all delinquent financial obligations owed to that university by students and former students. Students with delinquent obligations shall not be allowed to register for classes, receive cash refunds, obtain transcripts, diplomas, or a certificate of degree. The university may allow students to register for classes, obtain transcripts, diplomas or certificate of degree if the delinquent obligation is \$25 or less. Unpaid obligations shall remain a matter of record until students and former students satisfy their financial obligations or until satisfactory arrangements for repayment are made with the university. The university may write off delinquent financial obligations for students according to accepted accounting principles and after appropriate collection efforts. No such write-off shall operate to relieve the student for liability for the obligation nor shall such write-off entitle the student to release of any transcripts, diploma, or certificate of degree, or to register for further university classes until such obligation is actually paid.

*From the Arizona Board of Regents Policy Manual.

Grading Policies

A – Excellent	S – Superior	CR – Credit
B - Good	P – Passing (Pass/Fail)	Y – No grade reported
C - Fair	I - Incomplete	
D - Poor	K – Course in progress	
E - Failure	W –Approved withdrawal	
F - Failure (Pass/Fail)	O – Audit	

Auditing – With the consent of the course instruction and the Dean of the Graduate College, graduate students may audit courses not included in their regular programs of study by filling out a Drop/Add form. Such units are included in the student’s load and are charged the same fees as registration for credit. Audit units, however, are not counted in the computation of full or part-time status. A change from credit to audit will be permitted after the fourth week of classes and until the last day of class only if the student is earning a passing grade in the course and receives the approval of the

course instructor and the Dean of the Graduate College. Refer to the Schedule of Classes for the final date for changing a course from audit to credit and vice versa. Changes from audit to credit are not allowed after the end of the semester.

Grade Appeal – A student may appeal a grade during the first regular semester after the semester or summer term in which the grade was awarded. Grade appeals are not processed during the summer sessions unless the dean of the college in which the course is offered, determines that the case warrants immediate review. The appeal involves a stepwise and formal process, progressively involving the instructor, the department head, and the dean of the college which offers the course, and can involve a committee appointed by the dean to review and make recommendations. Written verification of each step as well as close adherence to a timetable is indispensable. The dean of the college offering the course has the final authority to make a decision regarding the grade appeal. The Graduate College does not process or become involved in such appeals. A copy of the Grade Appeal policy and timetable can be found in The University of Arizona electronic catalog (<http://catalog.arizona.edu>) and at the Graduate College Information Center.

Petitions – A student, who believes with good academic reason, that they deserve redress or exception to Graduate College rules, regulations, or policies can formally petition for an exception. A petition form must be submitted to the Graduate College Degree Certification Office explaining all relevant facts. Such petitions must be accompanied by supporting documents and a letter of support from the student's Major Advisor, Director of Graduate Studies, or Department Head and required signatures. [Petition forms are available online](#) or in the Graduate Program Office.

Change of Grade – Within one year of the awarding of a grade, final grades may be changed by the instructor on a change-of-grade from only if there has been an error in computation. The grade change must be approved by the head of the instructor's department and the Dean of the Graduate College.

Incompletes –The grade of "I" for "Incomplete" may be awarded only at the end of the semester when all but a minor portion of the course work has been satisfactorily completed. Graduate students should make arrangements with the instructor to receive an Incomplete grade before the end of the semester. Instructors are encouraged to use the [Report of Incomplete Grade form](#) as a contract with the student as to what course work must be completed by the student for the I grade to be removed and replaced with a grade. On the form, the instructor states: (1) which assignments or exams should be completed and when; (2) how this work will be graded; and (3) how the student's course grade will be calculated. Both the instructor and student sign this agreement and both should retain copies.

Graduate students have a maximum of one calendar year to remove an Incomplete. An Incomplete not removed within one year is replaced by a failing grade of "E" and counted as an "E" in determining the student's grade-point average. If the coursework cannot be completed within one year, the student may petition to extend the Incomplete. This petition must be submitted before the grade converts to an "E".

If there is a possibility that the student's cumulative grade-point average will fall below 3.00 through the conversion of Incomplete grades to failing grades, the graduate degree will not be awarded.

Pass/Fail – Graduate students can take courses offered by the College of Law for Pass/Fail for graduate credit. Graduate students who need to complete admission deficiencies or who wish to take undergraduate credit courses available for P/F grading, may take Pass/Fail courses but will not earn graduate credit for these courses.

In addition to the above situations, graduate students may be permitted to elect a Pass-Fail option for graduate credit under the following guidelines:

- The course must be in an area outside the student's major or minor.
- Courses taken Pass-Fail will not count toward the minimum number of credits required for the degree.
- The instructor and the student's advisor must approve the Pass-Fail option on a change of schedule form.
- The student should take the change of schedule form to the Registrar's Office at Admin 210 for processing

Withdrawal from a Course –Withdrawal from a course within the first four weeks after registration will result in the deletion of the course from the academic record. After the fourth week and through the end of the eighth week of classes, the grade of "W" may be awarded to students earning a passing grade at the time of the official withdrawal.

Refer to the section on [Withdrawal from The University](#) for instructions on withdrawing from all courses during a semester.

Repeating Courses – With the exception of course work covered by the Grade Replacement Option, graduate students may not repeat a course for graduate credit unless it is marked "Rpt.". Such courses, while retaining the original course number, contain different content each semester they are offered. Refer to Departments and Courses of Instruction, for specific course information.

The awarding of a graduate degree implies currency in the field, not the mere completion of catalog requirements.

Maximum and Minimum Graduate Study Enrollment

Maximum Study Loads – Maximum unit loads vary depending on the total hours of employment (salaries and supplemental compensation) as follows. Officially audited courses, undergraduate courses, dissertation, thesis, and supplementary registration **are** included in this total.

Maximum unit loads for graduate assistant/associates are:

Full-time Equivalency	Hours per pay period*	Maximum Units
25%	20	16
33%	26.40	14
50%	40	12
66%	52.80	11
75%	60	10

*A pay period is equivalent to two weeks.

Minimum Study Loads – The minimum enrollment allowed per semester (fall and spring) for students enrolled in the Graduate College is three (3) graduate units. For students holding teaching or research assistantships/associateships, the minimum enrollment required is six (6) graduate units. During summer sessions, minimum enrollment is one (1) graduate unit. Undergraduate and/or officially audited graduate courses are **not** included in this total.

Time Limitations for Coursework

All requirements for the master's degree must be completed within six (6) years. Time-to-degree begins with the earliest course to be applied toward the degree, including credits transferred from other institutions. Work more than six (6) years old is not accepted toward meeting the requirements.

All requirements for the degree of Doctor of Philosophy, including work done for the master's degree, cannot exceed a period of ten (10) years. Time-to-degree begins with the earliest course to be applied toward the degree. Work more than ten (10) years old is not accepted toward meeting degree requirements.

The Graduate Council has instructed that petitions for time-limitation waivers should only be entertained under circumstances that are judged to be extraordinary and extenuating.

Credit Requirements and Transfer Credit

The equivalent of at least six semesters of full-time graduate study is required for the Ph.D. A minimum of 36 units of course work in the area of the major subject, 9 units in the minor subject, and 18 units of dissertation must be completed. Graduate credit earned at other approved institutions, if accepted by the major department and the Graduate College and grade was A or B, may be counted toward the requirements of this degree, but will not be calculated in The University of Arizona G.P.A. All required units of credit must be at the 500-level or above at The University of Arizona (or, in the case of transfer units, their equivalent at other institutions). Six units of 400-level credit taken at The University of Arizona may be used in the minor but will not receive graduate credit or be calculated in the graduate grade-point

average. At least one half the units used on the Doctoral Plan of Study must be in courses in which regular grades (A, B, C) have been earned. A minimum of 12 units of regular grades taken at The University of Arizona are required to establish a University of Arizona G.P.A. Credit for correspondence courses or extension work obtained at other institutions will not be accepted for graduate credit.

Students who wish transfer credit must submit a '[Evaluation of Transfer Credit](#)' form before the end of their first year of study.

Graduate Non Degree Coursework

Students who have completed graduate non-degree coursework and would like that coursework to count toward a doctoral degree should be aware that only 12 units of non-degree coursework can be used toward doctoral degrees.. (For students who are also taking 400-level courses, the total of 400-level plus non-degree coursework may be no more than 12 units.)

Thesis and Dissertation Work in Absentia

Under conditions approved by the Graduate Program, a portion of the student's thesis or dissertation work may be done in absentia. Approval to do work in absentia must be sought prior to undertaking the work.

Satisfactory Academic Progress

In addition to maintaining a minimum 3.00 grade-point average, students enrolled in a graduate degree program are required to demonstrate satisfactory academic progress toward degree completion. Failure to meet satisfactory academic progress requirements is grounds for conversion to graduate non-degree status by the Dean of the Graduate College. Each department has its own criteria for evaluation of a student's academic progress. The Graduate College will apply the appropriate department's criteria when the department requests a student's conversion to graduate non-degree status for failure to meet satisfactory academic progress guidelines. Departmental policies on satisfactory academic progress are available from departments and from the Office of the Dean of the Graduate College.

Graduate Student Grievance Procedure

Should a graduate student feel he or she has been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, the department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance. The [University Ombudsman](#) is also available to assist students with concerns or complaints.

Grievances that will be reviewed by the Graduate College:

While the Graduate College is available to discuss any academic concern, only grievances that allege violation of a specific University rule, regulation, policy or practice will be considered for formal review as stated below. A grievance procedure is available to graduate students who have complaints that:

1. allege violation of a specific University rule, regulation, policy or practice;
2. are not remediable by other university grievance policies and procedures; and
3. are within the decision-making jurisdiction of the Graduate College.

The Associate Dean of the Graduate College or other delegate of the Dean of the Graduate College (hereinafter "Associate Dean") shall determine whether a complaint is within the decision-making jurisdiction of the Graduate College. Examples of complaints that are NOT suitable for formal grievance through the Graduate College are listed at the end of this section.

Grievance Procedure:

To pursue a formal grievance, students must take the following steps:

1. If informal efforts to resolve the grievance have failed, students must file their written grievance complaint with the head of their academic unit. Such written complaint must be filed within 6 months of the incident that is the subject of the grievance. The grievance complaint must include a concise statement of the allegations that form the basis for the student's complaint, including a careful statement of the facts, the rule, regulation, policy or practice that was violated, a summary of the informal attempts at resolution, and a suggested remedy.
2. The academic unit head must review the grievance complaint and provide a written response to the student within 15 class days*. A student who wishes to appeal the unit head's response, must file a copy of the grievance complaint and the unit head's response with the Graduate College within 5 class days of receiving the unit head's response .
3. The Associate Dean (or designee) will then try to negotiate a resolution. If acceptable mediation of the grievance is not achieved within 15 class days of filing with the Graduate College, the student may request that it be forwarded to the Grievance Committee.
4. In accordance with the procedures set forth below, the Grievance Committee will hold a hearing and convey its recommendation to the Graduate Dean in writing within 15 class days of their final meeting. The Associate Dean will schedule the hearing date(s).
5. The Graduate Dean will render a final decision affirming, denying or modifying the Grievance Committee's recommendation within 15 class days following receipt of the recommendation.

* "Class days" exclude Saturday, Sunday, holidays, and days in which the University is not in session. All timelines refer to the first regular semester after the incident. Grievances are not processed during the summer sessions unless the dean determines a case warrants immediate review.

Grievance Procedure Deadlines

In pursuing a formal grievance, students must take note of the necessary timeline for pursuing a formal grievance (Table 1). If a student adheres to this timeline, resolution of the grievance can be expected within about 65 class days of the student's written grievance complaint. If the Grievance Committee requires several meetings to reach a recommendation, more time might be required. Deadlines may be extended with the consent of the student, respondent, and/or the responsible party for the pending step in the process. Should there be an unavoidable delay at any step and the Graduate Dean determines that prompt disposition is not possible, he or she shall inform the grievant in writing.

The Graduate Grievance Committee

The Graduate Grievance Committee is a standing committee consisting of eight graduate students representing different academic units appointed by the Graduate and Professional Student Council (GPSC), four faculty members from the Graduate Council and twelve faculty members at large, appointed by the Graduate Dean. Faculty members serve three-year terms. Student members serve two-year terms. All terms are staggered.

To schedule a grievance hearing, the Associate Dean will select a subcommittee from the standing committee consisting of two students and four faculty members, at least one of whom is a member of the Graduate Council. This subcommittee is the hearing committee.

The Graduate Grievance Hearing

The Associate Dean of the Graduate College will arrange a time and place for a hearing. The hearing will be closed to protect the privacy of the student. The hearing committee will select a chair. The chair will preside at the hearing and will rule upon all procedural matters. The formal rules of evidence will not apply, although objections to the introduction of specific statements or documents may be considered by the chair. Irrelevant, immaterial, privileged or unduly repetitious information will be excluded. The chair may establish reasonable limits upon the time allotted to the student and the department or academic unit for oral presentation and examination of witnesses.

All members of the hearing committee and all parties to the grievance will receive a copy of the grievance and the department's response. All parties may present evidence in the hearing. Committee members may question anyone presenting evidence during the hearing. Only evidence presented at the hearing and those documents submitted up to the time of the hearing will be considered in the adjudication of the grievance.

At the hearing, the student will first present his/her case to the hearing committee. He/she may present witnesses. The student may have one advisor present. That person will play an advisory role only and shall not present or participate in the presentation of the student's case at the hearing. If the student elects to have an attorney as an advisor, the Graduate College must be notified at least one week before the scheduled hearing.

The department or appropriate academic unit shall present its case before the hearing committee. Each party may question the other party or their witnesses. The student and the department or appropriate academic unit shall each have the right to rebuttal.

After each party has presented its case and left the hearing room, the hearing committee will begin its deliberations. Additional meetings of the hearing committee may be required for deliberation. Within 15 class days, the chair will communicate the hearing committee's recommendation to the Dean of the Graduate College who will render the final decision.

Complaints NOT Addressed Through This Procedure

Some complaints that cannot be addressed through this procedure include:

- Allegations of gender (including sexual harassment), racial, ethnic, religious and sexual orientation discrimination; these are dealt with by the [Affirmative Action Office](#).
- Grade appeals, procedures for which are available in [General Catalog](#) or from the Graduate College Information Desk. (Grade appeal procedures apply to course grades; appeals of comprehensive examination or oral defense results follow the general Graduate College Grievance Review Procedures.)
- Complaints against University employees and students that are covered by provisions of the [University Handbook for Appointed Personnel](#) ("UHAP"), the [Staff Personnel Policy Manual](#) ("SPPM"), and the [Student Code of Conduct](#).
- [Graduate College petitions](#) requesting waivers of policy are not addressed through the general Graduate College Grievance Review Procedures; students may appeal denials of petitions by writing directly to the Dean of the Graduate College.

[The University Ombudsperson](#) is also available to assist students with concerns and complaints.

Graduate Grade Appeal Process

A student may appeal a grade during the first regular semester after the semester or summer term in which the grade was awarded. Grade appeals are not processed during the summer sessions unless the dean of the college in which the course is offered determines that the case warrants immediate review. The appeal involves a stepwise and formal process, progressively involving the instructor, the department head, the dean of the college in which the course is offered, and can involve a committee appointed by the dean to review and make recommendations. Written verification of each step below is critical. Steps three, five, and seven require the student to submit a written appeal. Therefore, either mail the appeal via return receipt or deliver it to the appropriate office and have a staff member verify the date and time of delivery. The dean of the college under which the course is offered has the final authority to make a decision regarding the grade appeal. The Graduate College does not process or become involved in such appeals.

1. Within the first five weeks of the semester, the student should discuss the concerns with the course instructor, stating the reasons for questioning the grade. If the instructor is a teaching assistant/associate and this interview does not resolve the difficulty, the student shall discuss the problem with the person in charge of the course.
2. Within the first five weeks of the semester, the student shall go to the college dean's office to obtain any requisite forms and to review directions. The student must attest in writing that she/he has informed the instructor she/he intends to file a grade appeal.
3. Within the first five weeks of the semester, the student shall carefully formulate an appeal in writing, and submit it to the instructor with a copy to the department head.
4. Within two weeks from the date of receipt of the student's written statement, the instructor shall respond to the student in writing. The instructor should explain the grading procedures and how the grade in question was determined as well as other issues raised in the student's statement.
5. If the instructor is not available or does not resolve the matter within the two-week period, the student shall within one week thereafter, readdress and submit the written appeal to the department head.
6. The department head has two weeks to consider the student's written statement, the instructor's written statement, and confer with each. The department head, does not have the authority to change the grade, shall inform the instructor and the student in writing of his/her recommendation. If a grade change is recommended, the instructor may refuse to accept the recommendation. The instructor shall notify the department head and the student in writing of his/her decision.
7. If the department head does not act on or resolve this matter within a two-week period, the student shall, within one-week thereafter, readdress and submit the written appeal to the dean.
8. The dean shall review the student's appeal and take appropriate action. If the basis of the appeal is the fundamental fairness of treatment of the student by the instructor, the dean should convene a committee to review the case. Valid reasons for convening an appeal committee include, but are not limited to: a violation of University policy, a failure to follow published course policies, a lack of consistency within the student's course section, or a dispute over the factual accuracy of graded work. The following are NOT reasons that should be brought to a committee: a disagreement with published course policies, differences in classroom policies or grading schemes in different courses or between different sections of the same course, or a grade's impact on a student's academic progress, athletic eligibility, or eligibility for veteran's benefits.
9. When appropriate, the dean shall convene a committee to review the case. The committee consists of five members. Faculty representatives include one from the department of the instructor concerned, and two from closely related departments or colleges. The student council of the college provides two student representatives. Student representatives shall be full-time upper-division undergraduate students for appeals by undergraduate students or full-time graduate students for appeals by graduate students. If the college does not have an appropriate student council, the ASUA or GPSC shall appoint the student members. All student members must be in good academic standing in that college.

Within the structure provided by the dean, the committee shall design its own rules of operation and select a chair other than the faculty representative from the department concerned. The student and instructor shall represent themselves. The committee may, or may not

- meet separately with the student, the instructor, and the department head
- request each party to submit a brief written summary statement of the issues, and/or
- interview other persons who have relevant information.

If feasible, the committee should meet with the student and the instructor together in an attempt to resolve the difference. The committee shall consider all aspects of the case before making its recommendation. The committee shall make a

written report with recommendations and provide copies to the student, the instructor, the department head, and the dean.

10. The dean shall make a final decision after full consideration of the committee's recommendation and within four weeks of receiving the student's appeal. The dean has the authority to change the grade to a different credit-bearing grade, which includes regular grades (A, B, C, D, E), alternative grades (S, P), or optional grades (P, F), depending on the course grading system and the system chosen by the student at registration. The registrar shall accept the dean's decision. The department head, the instructor, and the student shall be notified in writing of the dean's decision.

Graduate Examination Appeal Procedure

A student can appeal the decisions of an examining committee for Qualifying, Comprehensive (written and oral), and Final Oral Defense examinations. If no resolution is obtained after appealing to the committee chair and formally meeting with the entire examining committee, the student may request in writing that the head or chair of the department conduct an investigation. Such written requests must be initiated during the first regular semester after the term in which the examination was held. If there is still no resolution, the student may then request that the Dean of the Graduate College convene a committee to review the case and report its recommendations in writing. Final action will be taken by the Dean of the Graduate College and may include directing that a new examination or reexamination be held by the student's department.

STUDENT SERVICES

Campus Health

Campus Health provides high-quality, primary medical and psychological care to University of Arizona students, and is a campus resource for counseling on health, nutrition, and addiction problems. Licensed physicians, nurse practitioners, nurses, psychologists, and mental health professionals comprise the staff, in addition to community specialists who conduct clinics in orthopedics, wart and surgery, sports medicine, and dermatology. Regularly enrolled students become eligible for services at the beginning of the semester for which registration fees have been paid. Continuing students who were registered during the spring semester but are not registered for summer session may become eligible for summer services by paying a special fee. Medical conditions requiring immediate care can be seen on a walk-in basis, but students are encouraged to call for appointments, available Monday through Friday between 8:30 a.m. and 4:30 p.m., for all non-urgent situations. A pharmacy on the premises provides medicines and over-the-counter drugs at prices competitive with those in the private sector. Every student born after December 31, 1956 must submit proof of measles and rubella vaccines since 1980; these vaccines are available at Campus Health for a charge. International students must also obtain a tuberculosis skin test at Campus Health before registering for classes for the first time. Many services are free (prepaid by the student's tuition) after a nominal first visit fee. Charges are incurred for prescriptions, ex-rays, laboratory tests, physical therapy, special supplies, and some specialist physician visits. Charges for all services may be paid at the Campus Health Business Office by 5:00 p.m. on the day they are incurred or will be automatically added to the student's university account. Campus Health Insurance, required for all international graduates and optional for all other students, is also available at the Health Insurance Office located on the ground floor of Campus Health. For further information, contact Campus Health, 1224 E. Lowell St., Tucson, AZ 85721 (Northwest corner of Highland & 6th Street) Phone: (520) 621-6490.

Career Services Office

Career Services offers a variety of programs which assist students and alumni to develop and implement career plans, gain work-related experience, seek part-time work, and gain professional employment after graduation. Career Services is located on the Lower Level of Old Main, 621-2588.

Campus Recreation

Campus Recreation combines programs and facilities offering a wide variety of recreational, fitness, and wellness opportunities. The Student Recreation Center (E.E. corner of Sixth St. and Highland Ave.) is a state-of-the-art, national

award-winning, physical fitness and recreation center offering two gymnasias, fourteen racquetball courts, two squash courts, a weight room, and elevated indoor track, two multipurpose dance rooms, two sand volleyball courts, and outdoor Olympic size pool, the Outdoor Adventures Center, a Wellness Center, a juice bar, and short-term child care facilities. Campus Recreation also coordinates more than fifty organized sports events through its Intramural and Recreational Sports Program, and over forty-five active sports clubs including rugby, soccer, water polo, and martial arts. For further information contact the Student Recreation Center, 1400 E. Sixth St., 621-8722.

Disability Resource Center

The Disability Resource Center offers services to students, faculty, and staff who have physical, visual, hearing, learning, and hidden disabilities. Major programs and services provided by the Center include academic accommodations, basic services for the learning disabled, physical support and wheelchair maintenance services, computer support, a Disability Resource Clearinghouse, adaptive athletic/recreation programs, counseling advocacy, testing services, interpreting, and referral. Main CEDRR offices are located at the southwest corner of Second St. and Cherry Ave., 1540 E. 2nd Street, 621-3268.

International Student Programs and Services

The International Student Programs and Services (ISPS) serve both the incoming international student population and University of Arizona students studying abroad. ISPS assists international students in complying with existing federal, state, and local regulations, provides information and gives authorization (as appropriate) concerning visa and immigration matters, and offers personalized counseling and advisory services to students in all phases of the adjustment to the University and to the United States. It also sponsors an International Student Orientation and Registration Program each semester for newly-arrived international students, and cross-cultural workshops and seminars on issues affecting the international student population. Over 30 international student clubs are also supported by the Center. ISPS is located adjacent to the campus, at 915 N. Tyndall Ave., 621-4627.

Counseling and Psychological Services

A unit of Campus Health, Counseling and Psychological Services (CAPS) offers crisis intervention; brief individual, couple, and group psychotherapy; and medication evaluation and prescriptions to University of Arizona students. Other services include biofeedback training, and HIV counseling and testing. Services are confidential. The first visit is free; there is a minimal charge for subsequent visits. A Self-Help Library, free of charge, is available on the premises. Students can be seen on a walk-in basis the same day they seek services, and by appointment after the first visit. CAPS is located within the Campus Health Bldg., 1224 E. Lowell St., Tucson, AZ 85721 (Northwest corner of Highland & 6th Street) Phone: (520) 621-6490.

Dean of Students

The Dean of Students office is committed to student learning and success at The University of Arizona. In addition to ensuring community standards and high-quality student life programs, the office handles withdrawals from the University, Code of Conduct, Code of Academic Integrity, Policy on the Use of Campus and First Amendment Rights, and other types of policy interpretation and dissemination. The office provides campus-wide leadership in managing student crisis situations. The office also maintains several student advisory groups which include graduate student participation. The Dean of Students office is located in Old Main 203, 621-7057.

Housing

Early applications are encouraged. Complete information on housing may be obtained from the Office of Residence Life, 621-6501. The Center for Off-Campus Students, 621-5859 maintains a weekly listing of apartments and other housing information.

Multicultural Programs and Services

The University of Arizona supports cultural resource centers designed to provide academic, social and cultural support to ethnic minority students.

The American Indian Graduate Center provides a home-like gathering place and support program for Native-American graduate students. The Center offers student academic counseling, advisement, emergency loans, computer assistance, and social and community activities with other graduate students and the Tucson Indian community. It is located near the campus at 1439 E. Helen St., 621-7989.

Other centers providing resources and assistance to both undergraduate and graduate minority students are:

Multicultural/Academic Student Affairs, Chemistry 214, 621-1094.

The **African American Cultural Resource Center**, located in the Martin Luther King, Jr. Building, Room 209, 621-3419.

The **Asian Pacific American Cultural Resource Center**, located in the Martin Luther King, Jr. Building, Room 320 621-3481.

The **Chicano/Hispano Student Affairs and Resource Center**, located in the Economics Building, Room, 217, 621-5627.

Native American Student Affairs, Nugent Building 203, 621-3835.

Speech and Hearing Clinics

The Speech Clinics offer a full range of services to individuals with communication difficulties, including evaluation and remediation of articulation, language, voice, and fluency disorders, and accent and dialect reduction. Individual and group therapy sessions are offered as well as specialized instrumental testing. Services in the Hearing Clinic include assessment of hearing, selection of hearing aids, training in the use of amplification, counseling relative to alternative communication devices, procurement of ear molds, and maintenance of amplification systems. Services are available to University students, staff, and faculty, and to children and adults in the community. The Clinics are located in the Speech and Hearing Sciences Building, Room 110, Speech Clinic: 621-1826, Hearing Clinic: 621-7070.

Testing Office

The Testing Office offers the GRE, LSAT, MCAT and GMAT, as well as preparation courses for these examinations for a fee. For additional information, contact the Testing Office, Old Main, Room 223, 621-7589.

UNIVERSITY REGULATIONS

Equal Opportunity and Affirmative Action Statement

The University of Arizona is committed to both Equal Opportunity and Affirmative Action and is determined to maintain those principles at all levels of the University for all persons who are employed with and who participate in University-affiliated activities. The University is committed to meeting the provisions of those federal and state laws and University policies which apply to employment and admittance to any University program. The University prohibits discrimination on the basis of age, color, disability, ethnicity, gender, national origin, religion, sexual orientation, and veteran's status, and is also committed to maintaining an environment free from sexual harassment and retaliation. The office is located in the University Services Building, Room 219, 621-5749.

Accommodation of Religious Observance and Practice

No employees, agent, or institution under the jurisdiction of the Arizona Board of Regents shall discriminate against any student, employee, or other individual because of such individual's religious belief or practice or any absence thereof. Administrators and faculty members are expected to reasonably accommodate individual religious practices. A refusal to accommodate is justified only when undue hardship would result from each available alternative or reasonable accommodation. No administrator or faculty member shall retaliate or otherwise discriminate against any student, employee, or prospective employee because that individual has sought a religious accommodation pursuant to this policy.

Code of Academic Integrity

Integrity is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students engaging in academic dishonesty diminish their education and bring discredit to the academic community. Students shall not violate the Code of Academic Integrity and shall avoid situations likely to compromise academic integrity. Students shall observe the provisions of the Code whether or not faculty members establish special rules of academic integrity for particular classes. Failure of faculty to prevent cheating does not excuse students from compliance with the Code. Conduct prohibited by the Code consists of all forms of academic dishonesty, including but not limited to: cheating, fabrication, facilitating academic dishonesty, and plagiarism as set out and defined in the Code of Conduct; modifying any academic work to obtain additional credit after such work has been submitted to the supervising faculty member, without the approval of the faculty member; and

failure to observe rules of academic integrity established by the faculty member for a particular course. Any attempt to commit an act prohibited by these rules will be subject to sanctions to the same extent as completed acts. The procedures for reviewing a suspected violation are found in the complete Code of Academic Integrity available in the Dean of Students Office, Old Main, Room 203 or online at <http://w3.arizona.edu/~studpubs/handbook/policyframe.html>.

Code of Conduct

A. Jurisdiction and Authority

1. The Arizona Board of Regents is charged by law to exercise control and supervision of the three state universities, their properties and activities, and is authorized to enact ordinances for the government of the institutions under its jurisdiction. The Board is further required by law to adopt rules and regulations for the maintenance of public order upon all university property under its jurisdiction. The Board has promulgated this Code of Conduct in order to meet its responsibilities under Arizona Law.
2. The administration at each of the state universities is to assist the Board in the enforcement of the rules and regulations set forth under this Code, but the authority of the administration is subject to the ultimate authority of the Board.

B. Philosophy

1. The educational process is ideally conducted in an environment that encourages reasoned discourse, intellectual honesty, openness to constructive change and respect for the rights of all individuals. This Code of Conduct is designed for the promotion and protection of such an environment at each of the state universities.
2. Acceptance of membership in the university community amounts to neither a surrender of those individual rights accorded to all citizens of this country nor a means of escaping the attendant fundamental responsibilities of that citizenship. Membership in the university community brings rights as well as responsibilities. This Code of Conduct shall be implemented by the adoption of sets of procedural rules appropriate for the various segments of the university community, which shall provide for the full protection of individual rights and freedoms.

C. Purpose and Intent

1. The primary purpose for the enactment of this Code of Conduct is to set forth in a clear and concise manner the rules and regulations of conduct expected of those who join the university campus or participation in any university sponsored activity.
2. It is intended that the sanctions listed in this Code be imposed and enforced for the protection of the university community and for the maintenance of order and stability, both with respect to activities occurring on the university campus and with regard to all university – sponsored activities.

Copies of the Code of Conduct and Student Disciplinary Procedure for the Code of Conduct are available in the Dean of Students Office, Old Main, Room 203 or online at <http://w3.arizona.edu/~studpubs/handbook/policyframe.html>.

Release of Student Information

Listed below are highlights from the University of Arizona Policy on the Release of Student Information as set forth by The Family Educational Rights and Privacy Act of 1974 (FERPA)/ See the UA website at <http://w3.arizona.edu/~policy/ferpa.shtml> for the complete policy.

CONFIDENTIALITY OF STUDENT RECORDS

- A. A student's educational records (or personally identifiable information contained therein), other than Directory Information, shall not be accessible or released without the prior consent of the student unless authorized by law. Federal law recognizes that student educational records may be released, without prior consent of the student, under the following circumstances or to the following individuals:
1. Other officials of the University, including teachers, who have a legitimate educational interest in the information.
 2. Officials of other schools in which the student seeks or intends to enroll, on the condition that the student upon request receives a copy of the record which has been transferred and has an opportunity to challenge upon request the content of the record.
 3. Authorized representatives of the U.S. Comptroller General, the Secretary of the Department of Education, U.S. Commissioner of Education, Director of the National Institute of Education, Assistant Secretary for Education, or state educational authorities for the purpose of audit and evaluation of federally supported education programs or the enforcement of and compliance with legal requirements related to these programs. Except when the written consent of the student has been obtained, or when the collection of personally identifiable information is specifically authorized by federal law, any data collected pursuant to this paragraph is required to be protected by the persons receiving it in a manner which will not permit the personal identification of students and their parents by other than those authorized by this paragraph.
 4. In connection with a student's application for, or receipt of financial aid; provided, that personally identifiable information be disclosed only as may be necessary for such purposes as to determine eligibility for or amount of financial aid or to determine and enforce the terms or conditions of the financial aid.
 5. State and local officials or authorities to whom such information is specifically required to be reported or disclosed under state statutes enacted prior to November 19, 1974.
 6. Federal, state, local and independent organizations conducting studies for, or on behalf of, educational agencies or institutions for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction.
 7. Accrediting organizations in order to carry out accrediting functions.
 8. Parents of a dependent student, as defined in section 152 of the Internal Revenue code of 1954. One method of establishing dependency is to require that a parent submit a notarized affidavit stating that the student is a dependent for income tax purposes.
 9. Appropriate parties in a health or safety emergency. Factors to consider in determining whether personally identifiable information should be disclosed shall include the following:
 - a. Seriousness of the threat to the health or safety of the student or other individuals;
 - b. Need of the information to meet the emergency;
 - c. Whether the parties to whom the information is disclosed are in a position to deal with the emergency; and
 - d. The extent to which time is of the essence in dealing with the emergency. This paragraph shall be strictly construed.
 10. To comply with a judicial order or lawfully issued subpoena, the University official must make a reasonable effort to notify the student of the order or subpoena in advance of compliance therewith. In the event time for compliance does not allow time for mailing, notice after compliance may be given and that fact noted in the record.

- B. Access to a student's record or release of personally identifiable information there from may be granted to others with prior written consent from the student. The written consent must be signed and dated by the student and
- C. Shall specify the records to be disclosed, the purpose for such disclosure, and to whom. The student, by paying the copying fee, may request a copy of the record disclosed.
- D. Records may be disclosed to a third party only on condition that the recipient will not permit others to have access to the information without the written consent of the student. All copies of records will be marked with the following statement:

Pursuant to the Family Educational Rights and Privacy Act of 1974, the attached information has been provided to you with the understanding that it will be used only for the purposes for which it has been provided and that it will not be released to other parties without the written consent of the student.

RECORDS OF REQUESTS AND DISCLOSURES

- A. A written record of requests for access or disclosure of personally identifiable information from education records shall be maintained by the custodian of the record. The record shall indicate the parties who have requested or obtained personally identifiable information.
- B. **EXCEPTIONS:** Paragraph A does not apply to:
 1. Request for or disclosures to the student.
 2. Disclosures pursuant to a student's written consent is specific with respect to the party or parties to whom the disclosures are made.
 3. Requests by or disclosures to University personnel having a legitimate educational interest in the record.
 4. Requests for or disclosures of directory information.
- C. The records of parties requesting or obtaining access to student records shall be available for inspection only to the student. University personnel responsible for custody of the records and authorized representatives of the parties listed in Paragraph 3, Section A, Part II of this policy for the purpose of auditing the recordkeeping procedures of the University.
- D. The record of requests and disclosures shall be maintained for as long as the education record to which it pertains is maintained.

RIGHTS OF ACCESS AND CHALLENGE TO PERSONAL EDUCATION RECORDS

- A. Students have a right to inspect, review and secure copies of their education records in which they are personally identifiable.
- B. Excluded from their inspection, review and copying are:
 1. A record showing personally identifiable information on other students in addition to the requesting student. The requesting student may see only that part of the record, or be informed of only the specific information in the record which pertains to the student.
 2. Financial records and statements of parents, or any information contained therein.

3. Confidential letters and statements of recommendation which were placed in the education records of a student prior to January 1, 1975; provided, that:
 - a. The letters and statements were solicited with a written assurance of confidentiality, or sent and retained with a documented understanding of confidentiality, and
 - b. The letters and statements are used only for the purposes for which they were specifically intended.
 4. Confidential letters and recommendations which were placed in the education records of the student after January 1, 1975, respecting admission, application for employment, or receipt of an honor or honorary recognition, if the student has signed a waiver of access; provided, that the student has waived his or her right to inspect and review in accordance with Section E, Part VII of this policy.
- C. Any student may request an opportunity to review, inspect, and secure copies of any of his or her educational records. The right to inspect and review includes the right to a response to reasonable requests for explanations and interpretations of the records.
- D. The student should go to the appropriate office maintaining the record he or she wishes to inspect and sign a written request for access to the record. Identification will be required of the student.
- E. If circumstances permit, the student may immediately be given an opportunity to inspect, review and secure a copy of the record. If work schedules do not permit or there is a question about the right of access, a later appointment may be made that is mutually convenient. Access to the records must be granted within a reasonable time but not to exceed 45 days after the request.
- F. A student who believes that information, other than the appropriateness of the grad awarded, contained in his or her education records is inaccurate, misleading or violates his or her privacy or other rights may request that correction, additions or deletions be made. If a disagreement exists, the student or the University official may take any question to the Student Privacy Officer for an informal discussion to resolve such question. If the student is not satisfied with the results of the informal process, he or she shall so advise the Student Privacy Officer who will then advise the student of his or her right to a hearing.

Sexual Harassment and Discrimination Policy

The University of Arizona prohibits unlawful discrimination, including harassment, on the basis of race, color, religion, sex, national origin, age, disability, veteran's status, sexual orientation, or gender identity. Sexual harassment is a form of sex discrimination that is specifically prohibited by this policy. The University's Sexual Harassment Policy is based on the provisions of Title VII of the Civil Rights Act of 1964, the Education Amendments of 1972, and other applicable laws that prohibit discrimination because of sex.

The University is committed to creating and maintaining an environment free of sexual harassment. Every member of the University community should be aware that the University does not tolerate sexual harassment and that both law and University policy prohibit such behavior. This policy prohibits sexual harassment by University employees, students, contractors and agents of the University, and by anyone participating in a University sponsored activity. The University will take prompt and appropriate action to prevent, correct, and if necessary, discipline behavior that violates this policy. All University employees are responsible for participating in the creation of a campus environment free from sexual harassment. A student who suspects (s) he may be a victim of sexual harassment should call the Affirmative Action Office 621-9449 and he or she will be transferred to an individual with expertise in these areas for confidential advice on handling the situation or to file a written complaint. Students with disabilities who would like information on University policies with regard to the Americans with Disabilities Act (ADA) should call the ADA/504 Officer at (520) 626-4133 or TTY (520) 621-4426.

TELEPHONE NUMBER DIRECTORY

Equal Opportunity and Affirmative Action
621-9449

Career Services
621-2588

Dean of Students
621-7057

Disability Resource Center
621-3268

Financial Aid
621-1858

Legal Services ASUA
621-2782

Residency Classification (Domicile)
621-3636

Counseling and Psychological Services (CAPS)
621-3334

Emergency (Fire, Police, and Medical)
911

Multicultural/Academic Student Affairs
621-1094

Parking & Transportation
621-3550
Citation Appeals – 621-1207

Residence Life
621-6501

Speech & Hearing Clinics
Speech Clinic – 621-1826
Hearing Clinic – 621-7070

Student Campus Health Services
621-6490

Student Information and Records
621-3113

Women's Resource Center
621-3919

Veteran's Certification
621-9501

Arizona Poison & Drug Information Center
626-6016

DIVERSITY RELATED RESOURCES

African American Student Affairs	621-3419
Africana Studies	621-5665
American Indian Graduate Center	621-3535
APEX (Academic Preparation for Excellence)	626-2307
Asian Pacific American Student Affairs	621-3481
Pride Alliance (Bisexual, Gay and Lesbian Student Assoc.)	621-7585
Center for English as a Second Language	621-1362
Center for Middle Eastern Studies	621-5450
Chicano/Hispanic Student Affairs	621-5627
East Asian Studies	621-7505
Hillel (serving the UA and Tucson Jewish Community)	624-6561
International Affairs	621-1900
Latin American Area Center	626-7242
Native American Student Affairs	621-3835
S.A.L.T. Center for Learning Disabilities	621-1242
Women's Resource Center	621-3919