

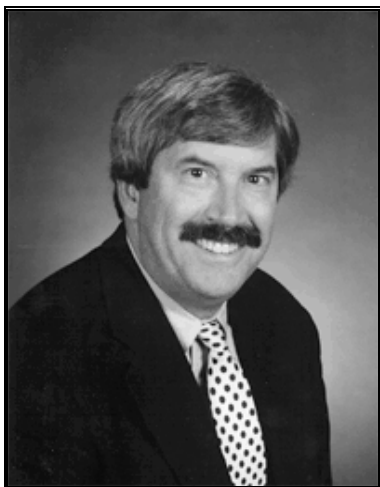


Louisiana State University Health Sciences Center School of Graduate Studies in New Orleans



Louisiana State University Health Sciences Center School of Graduate Studies in Shreveport

LOUISIANA STATE UNIVERSITY HEALTH SCIENCES CENTER SCHOOL OF GRADUATE STUDIES IN NEW ORLEANS AND SHREVEPORT



JOSEPH M. MOERSCHBAECHER, III, PH.D., DEAN

Appointed to the Deanship:
July 1, 1998

Appointed to the Health Sciences Center Faculty:
May 1, 1983

Telephone Number: (504) 568-4804

Faculty Academic Rank:
Professor of Pharmacology

LSU Health Sciences Center School of Graduate Studies Homepage
<http://www.lsuhscc.edu/Schools/Graduate>

ADMINISTRATION

JOSEPH M. MOERSCHBAECHER, III, Ph.D.
Dean

H. ADELE SPENCE, Ph.D.
Assistant Dean - New Orleans

SANDRA C. ROERIG, Ph.D.
Associate Dean for Research and Graduate Studies

NANCY W. RHODES
Director of Student Affairs, New Orleans

HISTORY

The Louisiana State University Health Sciences Center was established in 1931 for the training of medical and nursing students and graduate students in the basic sciences. For many years the lack of adequate research space limited graduate enrollment severely, and it was not until 1954 that expansion permitted a considerable increase in the student body. Although the Graduate School of LSU, Baton Rouge, granted degrees in the early years of the program, the Graduate School of The LSU System was reorganized in 1965 with separate autonomous units established at Baton Rouge, the University of New Orleans, and the LSU Health Sciences Center. The Faculty of the School of Graduate Studies is composed of selected members of the faculties of the other five professional schools of the Health Sciences Center, principally in the basic health sciences. Those faculties at the rank of assistant professor or above are eligible to be nominated for membership in the Graduate faculty. Such nomination must be made by two members of the Graduate faculty, through the Dean, to the Graduate Advisory Council. Membership criteria include: current and continuing interest in creative research as evidenced by publications in recognized journals in the field and interest in the teaching of graduate students.

CHRONOLOGY

Four people have served as Associate Dean or Dean of the Louisiana State University School of Graduate Studies of the Health Sciences Center since its establishment in 1965.

The name of the former Associate Dean, and his period of deanship:

Roland Armstrong Coulson, Ph.D. (1965-1974)

The name of the former Deans, and periods of deanship:

John Charles Finerty, Ph.D. (1974-1984)

Robert F. Dyer, Ph.D. (1984-1989)

Marilyn L. Zimny, Ph.D. (1990-1998)

ADMISSION AND REGULATIONS

REQUIREMENTS FOR ADMISSION

The requirements for admission to the School of Graduate Studies are:

1. A baccalaureate degree from a college or university approved by a regional accrediting agency;
2. Grade point average of at least 2.5 for undergraduate work, and 3.0 grade point average for graduate work, on a 4 point scale and based upon all work for which a grade is given;
3. Satisfactory scores on the Graduate Record Examination;
4. Satisfactory standing at the most recent educational institution attended; and
5. Acceptance in a Departmental program. It should be noted that individual Departments may establish requirements more rigid than the minimal standards of the School of Graduate Studies so that a student meeting minimal School requirements may not be adequately prepared to enter graduate study in a particular Program.

In addition, all foreign students must present acceptable scores on the Test of English as a Foreign Language (TOEFL) examination before they will be accepted as graduate students. These examinations are offered several times a year throughout the world.

Acceptance is contingent upon recommendation by one of the Departments offering graduate instruction leading to advanced degrees and co-current by dean.

STUDENT AID

A complete, detailed summary of all provisions governing financial aid available to students of the Health Sciences Center may be found elsewhere in this publication under the Heading: TYPES OF STUDENT FINANCIAL AID AVAILABLE. (See General Information section).

STUDENT HEALTH

A physical examination and selected blood work and immunizations are mandatory prior to registration at the Health Sciences Center. Students will receive information and instructions pertinent to student health in their acceptance packet.

TYPES OF ADMISSION

A student meeting all requirements is normally granted unconditional admission. Applicants who fail to meet all qualifications but who are nevertheless judged by the Departments concerned and by the Dean to show promise for successful graduate work may be considered for probationary admission on the merits of their individual cases. Applicants who appear to be admissible but who are unable, for good reason, to supply the required credentials prior to the stated deadline may request provisional admission. In such cases complete credentials must be received not later than sixty days after the first day of classes (forty five days in the Summer term).

Graduate students who apply for admission to the LSU School of Medicine, or any other professional school, shall not be enrolled in the professional school until they have completed the graduate degree toward which they are working.

ADMISSION PROCEDURE

Admissions forms may be requested from the Office of the Dean or from Program Coordinator. The completed application form and application fee must be returned to the Dean's Office. Two copies of each official transcript should be sent directly from the Registrar of each college or university the student has attended (including the various institutions in The LSU System) to the School of Graduate Studies of the Health Sciences Center. Letters of recommendation from two former professors are required. Students should request that results of the Graduate Record Examination be sent directly to the School of Graduate Studies by the Educational Testing Service.

The completed application, including transcripts, letters of recommendation, goal letters and GRE scores, will be sent to the Department concerned for review and recommendation. Those students acceptable to the program of their choice will be notified of acceptance to the School of Graduate Studies by the Dean.

DEADLINES

Deadline dates for each Department vary, depending upon number and quality of applicants, so early application is advised. Contact individual Departments for their deadlines.

REGISTRATION

All students are expected to comply with the general Health Sciences Center provisions governing registration as specified in the general information section of this publication.

Dates for registration are listed in the Calendar of this section. Late registration is permitted only under unusual circumstances and a fee will be required.

It is sometimes necessary for a student to carry more than 15 hours of credit per semester in the first year of graduate study. Permission to exceed the usual 15 hour credit limit may be granted by the Dean.

All full time students engaged in research should register for it. Although only six hours will be counted for the master's degree and fifteen for the doctoral degree, students should continue to register for research every semester in which they are engaged in research.

REAPPLICATION

Students once registered in the School of Graduate Studies who wish to resume work after an absence of more than one semester will be required to submit an application for re-admission at least ten days before registration. Supplementary transcripts must be submitted if any work has been taken at another institution during the interim.

Exceptions to this requirement must be by successful petition of the Dean.

GRADE REQUIREMENTS

To receive a graduate degree a student must have at least a B average on all work taken as a graduate student. A student will be dropped from the rolls of the School of Graduate Studies if the student's cumulative average is below a B for three consecutive semesters. Credits received in thesis or dissertation research are not used in computing the grade point average. A Summer term is counted as a semester. Students in serious scholastic difficulties may be dropped from the rolls at the end of any semester if the Department and Dean feel that the student is not qualified to continue.

GRADING SYSTEM

In the School of Graduate Studies a grade of A has the value of 4 quality points per semester hour. A grade of B has the value of 3 quality points per semester hour. C has the value of 2 quality points per semester hour and in some Departments a course with a C grade or less may not be accepted for credit toward a degree. D has one quality point value. F grades carry no quality points; I grades indicate unfinished work. The grading system of the School of Dentistry, the School of Medicine in New Orleans and the School of Medicine in Shreveport may be different from that of the School of Graduate Studies, and graduate students enrolled for graduate credit in them will receive letter grades.

Consistent grades below A in the major field may be considered evidence of unsatisfactory performance by some Departments.

No regular letter grades will be given for research or seminar courses, but they will be allowed for special topics or methods courses. Methods courses given for letter grades must be approved in advance by the Curriculum Committee and by the Dean.

For research or seminar courses, "Satisfactory" will be indicated by "S" and "Unsatisfactory" by "U".

INCOMPLETE GRADES

Work which is of passing grade but which, because of circumstances beyond the student's control is not complete, may be marked I, incomplete. An I grade is given only upon receipt by the faculty of an appropriate excuse. If an excuse is not received, the faculty is to consider that the incomplete work is of failing quality and an F grade is to be given. It is the responsibility of the student to initiate the excuse.

A grade of I will be converted to F unless it is removed prior to the deadline for adding courses for credit as published in the School calendar. In extraordinary cases, such as a student going into military service, the Dean may authorize that the I grade become permanent, or may authorize an extension of time for removing the grade.

FOR EXAMINATION ONLY

If a student registered "for examination only" does not take the examination, a "S" grade will be recorded and the registration carried over for the next semester. An unsuccessful examination or any delay greater than 3 registration periods will require registration of at least 3 hours.

SATISFACTORY-UNSATISFACTORY GRADES

A student, at the discretion of the student's Department, may take up to two courses outside of the major Department, which are normally evaluated by letter grade A-F, for a grade of "S" or "U". If an "S" grade is earned (Equivalent to A,B or C), credit hours will be given for the value of the course. If a "U" is incurred (D-F), credit hours will not be given for the value of the course. In neither case will the grade effect the grade point average of the student.

The nature of the arrangement must be recorded at the time of registration. If a student intends to register for a course on a "satisfactory-unsatisfactory" basis, the student fills out the registration form in the usual manner except that the student puts the letters "S-U" after the number of the course.

WITHDRAWAL GRADES

Students who withdraw from a class after the second week will receive a grade of W. Withdrawal within two weeks of the course termination will result in a grade of F.

STATEMENT OF SATISFACTORY ACADEMIC PROGRESS

A student who is permitted continuous enrollment is considered making satisfactory progress. The Departments and the Dean review the qualitative and quantitative academic progress of each student. A student may be permitted to remediate upon the recommendation of the student's Department and concurrence by the Dean. Such a student is considered to be making satisfactory academic progress.

TIME LIMIT FOR EARNING DEGREES

The School of Graduate Studies requires that all work towards a Ph.D. degree be completed in not more than eight calendar years and all work towards a M.S. degree must be completed in not more than four years. Any requests for extension of this policy are subject to approval by the student's Graduate Research Committee and the Dean.

DEGREES FOR FULL TIME FACULTY AND STAFF

The School of Graduate Studies will not award graduate degrees to full time faculty of the Health Sciences Center above the rank of Instructor or to other employees of equivalent status.

FULL TIME EMPLOYEES

LSUHSC employees may not register for more than six hours of credit per semester. No full time employee will be permitted to register without written approval of the employee's immediate supervisor and Department Head. The employee must deliver the letter to the Director of Student Affairs of the School of Graduate Studies - Resource Center at least two weeks before registration. The employee must also complete a Graduate School application form and pay the \$30 application fee. At registration the employee will pay for the course according to the Health Sciences Center Fee Schedule. Employees may qualify for Tuition and Fee exemption. Criteria and eligibility information may be obtained from the Assistant Vice Chancellor for Administration and Finance, 8th Floor - Resource Center.

If approval is granted, the student must bring the original request form and two copies to registration.

All employees must comply with LSUHSC Student Health requirements and also maintain health insurance. A Course Schedule Form must be completed, signed by employee's supervisor and submitted at Registration.

MULTI CAMPUS REGISTRATION

To cross-enroll, students must complete the LSU System Multi-Campus Registration Form available from the Director of Student Affairs. This form must be signed by the Dean of the School of Graduate Studies.

Students must submit 3 copies of the Multi-Campus Registration Form (original to be taken to the away System school) and the Course Registration Form, indicating the name and catalogue number of the course and the semester hours. Student then registers and pays fees here (home campus).

At time of registration at the away system campus, student presents the original Multi-Campus Registration Form and the pink copy of the Course Registration Form indicating that the appropriate fees have been paid.

AUDITORS

Enrolled students may audit courses without credit. Persons not enrolled will not be permitted to audit.

REQUIREMENTS FOR GRADUATION

Satisfactory completion of individual program requirements and all requirements as noted in both the "Requirements for the Master of Science Degree" or the "Requirements for the Doctor of Philosophy Degree" must be documented.

The student is expected to have satisfactorily met all financial obligations to the LSU Health Sciences Center and the LSU System at least ten days prior to graduation.

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

Residence - One academic year, two semesters, or four Summer terms represents the minimum requirement. Two years' residence represents a more realistic average.

Semester Hours - The minimum requirement is 30 semester hours of graduate work, not over six hours of which is allowed for research and composition of a thesis, and not more than two credit hours of seminars. At least 15 semester hours must be in graduate courses outside the medical or dental curriculum. Departmental requirements will generally exceed these minimal requirements. Although concentration is required in the major field of interest, every program for a master's degree should include at least six semester hours of credit in one or more related fields as defined by the Department concerned.

Transfer Credit - Candidates for the master of science degree may receive up to fifteen hours of transfer credit at the discretion of the Department involved, providing they have completed courses which are comparable to School of Graduate Studies courses in another graduate level institution, and satisfy the subject matter requirements. No transfer credit is permitted for course work receiving a grade below B and transfer of the credit does not reduce the residency requirement.

Candidacy - A student becomes a candidate if the student has completed 12 semester hours of work with a B average and has received Departmental approval.

Foreign Language - There is no School of Graduate Studies requirement for foreign languages, but individual Departments may require one or more.

Thesis Instructions - Instructions on preparation of the thesis may be obtained from the School of Graduate Studies office or on the LSUHSC web site. The format of the thesis should follow the rules formulated in the current edition of Scientific Style and Format: The CBE Manual for Authors, Editors and Publishers. For the planned graduation date, the student should check the school calendar for the final date for submission of the thesis to the School of Graduate Studies. Final approval of the thesis rests with a committee of not less than three graduate faculty members, one of whom must be from a Department other than the Student's Department, nominated by the Head of the Department, and appointed by the Dean. The Dean may serve as a member or may appoint members to the Committee.

Thesis Defense - When the thesis is nearly complete the candidate will be required to successfully defend the thesis. This examination may be written, oral, or both. The Committee votes by secret ballot, and to pass the examination there may be no more than one negative vote. Examination and defense request forms are available from the Student Affairs Office.

REQUIREMENTS FOR THE DOCTOR OF PHILOSOPHY DEGREE

The doctor of philosophy degree is the highest degree offered by universities. It is conferred only for work of distinction in which the student displays original scholarship.

Residence - Three years (9 semesters) of residence are required, although in most programs more time is needed. Exceptions may be made by petition to the Graduate Dean. One year (three consecutive semesters) must be taken in residence at the Medical Center following completion of the preliminary examination. Credit may be transferred from other institutions if approved by the Major professor and Department Head. Written notification clearly listing the courses to be transferred must be sent to the Dean who will notify the Registrar.

Course Requirements - Specific course requirements are dependent upon individual Departmental policy. However, in general, a minimum of 60 credit hours is required and at least 30 of those hours must be taken in courses which require a letter grade for evaluation. The minimum courses required by each Department are listed in the COURSE DESCRIPTIONS in this catalog. Some of the credit must be earned in one or more minor fields and ordinarily it is expected that a student should have at least twelve hours outside of the major field. At least 15 hours must be in courses outside of the medical or dental curriculum. No more than fifteen credits may be counted for research and dissertation and no more than four credits for seminar, even though both may be carried throughout the program. Departments may have additional requirements for students to participate in teaching in the graduate, medical, dental, nursing, allied health, and undergraduate courses.

Qualifying Process - Each Department will be responsible for the qualifying process and will develop appropriate policies which will be on file in the Dean's Office.

Foreign Languages - There is no School of Graduate Studies requirement for foreign languages, but individual Departments may require one or more.

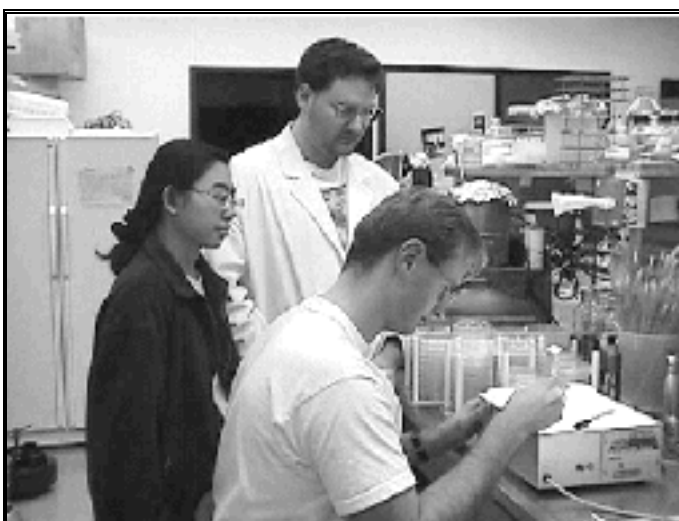
Preliminary Examination - The applicant becomes eligible for the Preliminary Examination at a time chosen by the Department but not less than one academic year (three consecutive semesters) before graduation. The student and his/her major professor, with the approval of the Department Head and the Dean, will recommend a research committee and petition the Dean to appoint the committee and allow the student to schedule the examination.

The preliminary examination committee will ordinarily consist of the student's major professor and at least four other Graduate Faculty members representing major and minor disciplines. At least one member must be from another Department and one member could be from outside the Medical Center. Substitution or addition of committee members may be made by the Dean after consultation with the major professor and Department Head, but continuity of membership is sought to provide consistent guidance of the student through the program. This examination is the most thorough in the doctorate program. It should require the candidate to demonstrate competence in a broad segment of the major and minor fields. Although the examination may be either oral or written or both, a written section is strongly recommended. If there is no more than one negative ballot out of a minimum of five, the student becomes a "candidate" after the Dean has been notified by the student's major professor and Department Head of successful completion of the preliminary examination.

Dissertation - The dissertation must be a significant contribution to the field, suitable for publication in a referred journal of international repute. Instructions on the preparation of the dissertation may be obtained from the School of Graduate Studies. The format of the dissertation should follow the rules formulated in the current edition of the CBE Style Manual: A Guide for Authors, Editors and Publishers in the Biological Sciences. For the planned graduation date, the student should check the school calendar for the final date for submission of the dissertation to the School of Graduate Studies.

Dissertation Defense — One year (three consecutive semesters) following the preliminary examination, the student is eligible to take this final examination, if the dissertation is complete to the satisfaction of the Research Committee. The Defense may be preceded by an open seminar of the student's dissertation research. The student must petition the Dean for permission to take the examination. The examining committee is made up of no less than 5 graduate faculty members, one of whom must be from a Department other than the Student's Department, nominated by the Major Professor, Head of the Department and appointed by the Dean. The Dean may serve as a member or may appoint members to the Committee. Traditionally, this examination is a test of the student's intimate knowledge of the area of the field in which the student is working. However, at the discretion of the Committee or the Dean, the examination may include questions from the major or minor fields in general. Voting is by secret ballot, and to pass the examination there may be no more than one negative vote.

Certification - If not more than one member of the examining committee dissents and if the dissertation is accepted, the candidate will be certified to the Graduate Faculty and Chancellor as having met all requirements for the degree of doctor of philosophy.



COMBINED GRADUATE AND PROFESSIONAL DEGREE PROGRAM

The combined M.D./Ph.D. program is offered on both the New Orleans and Shreveport campuses. These programs are an option for a limited number of students with superior academic records and unusual research potential. In the course of this program, a student will pursue the medical curriculum for two years, spend three to four years as a graduate student to acquire the Ph.D., and finally spend two years completing the medical curriculum. Prospective students must first apply to and be accepted to the Medical School. When applying, they should state their desire to enter the M.D./Ph.D. program. Criteria for consideration of admission are: MCAT scores, a mean of 10 (New Orleans) or total score 28 (Shreveport); GPA 3.5 (on a 4.0 scale); and GRE (Combined Verbal and Quantitative 1,200 (New Orleans) or combined Verbal, Quantitative and Analytical score of at least 1800 (Shreveport). The GRE is optional on the New Orleans Campus. Students must maintain a B average or the equivalent, in the Graduate School and "High Pass" (New Orleans) or B (Shreveport) in the Medical School to remain in good standing in the program. Students must fulfill all the requirements of the Doctor of Medicine and the Doctor of Philosophy degrees.

If a student withdraws from either the M.D. or the Ph.D. portion of the program the student is required to reimburse all funding thus far received. Credit for graduate course work will be transferred to the Medical School transcript.

MASTER OF SCIENCE - ORAL BIOLOGY

This program allows students already enrolled in an advanced dental education program as well as individuals who have a specialized interest in dentistry or the allied dental sciences to earn the degree, Master of Science in Oral Biology. This program is offered through the School of Graduate Studies and administered by the School of Dentistry and the Center of Excellence in Oral and Craniofacial Biology.

The Master of Science Program in Oral Biology is an option for those students with superior academic records and research potential. The criteria for admission to the School of Graduate Studies must be met. A minimum score of 1,000 on the Graduate Record Examination (combined verbal and quantitative) is required. Students must have earned a Bachelor of Science degree, D.D.S. or D.M.D. degree, or equivalent from an accredited program.

The program can be tailored to the requirement of each individual student. Curriculum design and course selection must be approved by the student's curriculum using the following guidelines.

Program Curriculum And Requirements

The minimum requirement is 33 semester hours of graduate work to include:

	Credit Hours
Advanced Dental Core Requirements -----	9
Advanced Dental Specialty Courses -----	9
Basic Sciences Courses -----	9
Thesis Research Requirements -----	6

Biomedical Sciences Concentration

Program (A Collaborative Masters Degree Program)

The Masters of Science, Biomedical Sciences Concentration, Collaborative Graduate Program has been established between the University of New Orleans (UNO), Department of Biology, and the Louisiana State University Health Sciences Center School of Graduate Studies–New Orleans (LSUHSC). The degree is awarded by the student's home institution, but the transcript will specify completion of the Biomedical Sciences Concentration Program.

Admission

Students are to be accepted into their parent institution and then apply for admission into the Collaborative Program. The student's major professor or graduate coordinator, as well as the faculty of the Department at the affiliated institution, shall approve the student's entry into the Program. Completion of the Program is required before application to the LSUHSC's Medical Schools can be considered.

Continuance

Students must maintain a B average (3.0) to avoid probation. A student on probation has one semester to rectify his grade deficiency before being dropped from the Program.

Curriculum

Masters level courses from the University of New Orleans and LSUHSC will be determined jointly by the departments involved from each campus. Core courses for each department have been defined and generally includes a laboratory rotation course. Elective courses, chosen by the student's major professor and thesis committee, shall include at least 3 hours at the affiliated campus.

Thesis Committee

All faculty serving on the thesis committee must be members of the Graduate Faculty of their own institution and will receive adjunct appointments at the student's home institution. The Committee will be chaired by the student's major professor and members will be selected by the student and major professor. At least one member will be from the affiliated institution.

Awards

The Chancellor's Award - A cash award of \$500 is presented annually. Selection of the awardee is based upon research performance as demonstrated by the quality of the dissertation and related research accomplishments while a student at either campus of the School of Graduate Studies. Selection is made by a committee of the faculty appointed by the Dean. This award was established by the Chancellor of the Health Sciences Center in 1979.

The Dean's Award - A cash award of \$200 and a plaque are presented annually. Selection of the awardee is based upon research performance as demonstrated by the quality of the dissertation and related research accomplishments while a student on the alternate campus from that of the Chancellor's Award.

NEW ORLEANS DIVISION ADVISORY COUNCIL

JOSEPH M. MOERSCHBAECHER, III, Ph.D.
Dean

H. ADELE SPENCE, Ph.D.
Associate Dean

MARK C. ALLIEGRO, Ph.D.
Cell Biology and Anatomy, appointed

THOMAS E. LALLIER, Ph.D.
Cell Biology and Anatomy, elected

KEVIN BROWN, Ph.D.
Biochemistry and Molecular Biology, appointed

JAY D. HUNT, III, Ph.D.
Biochemistry and Molecular Biology, elected

DIPTASRI MANDAL, Ph.D.
Genetics, appointed

MARY K. PELIAS, Ph.D.
Genetics, elected

RICHARD J. O'CALLAGHAN, Ph.D.
Microbiology, Immunology and Parasitology, appointed

ANGELA AMEDEE, PH.D.
Microbiology, Immunology and Parasitology, elected

BILLIE G. JEANSONNE, DDS
Oral Biology

KURT J. VARNER, Ph.D.
Pharmacology and Experimental Therapeutics, appointed

EMEL SONGU-MIZE, Ph.D.
Pharmacology and Experimental Therapeutics, elected

CONRAD HORNICK, Ph.D.
Physiology, appointed

RAYMOND E. SHEPHERD, Ph.D.
Physiology, elected

W. DOUGLAS SCHEER, Ph.D.
Pathology, appointed

BARBARA SCHNEIDER, PH.D.
Pathology, elected

ALICE LEBLANC, MPH
Public Health & Preventive Medicine, appointed

JAMES DIAZ, M.D.
Public Health & Preventive Medicine, elected

THEODORE WEYAND, Ph.D.
Neuroscience Center of Excellence, appointed

JEFFREY ERICKSON, Ph.D.
Neuroscience Center of Excellence, elected

NEW ORLEANS DIVISION CALENDARS 2002 - 2004

August, 2002 (Fall Semester)

Wednesday 14 - Registration.
 Thursday 15 - Classes begin.
 Wednesday 28 - Final date for adding courses for credit.

September, 2002

Monday 2 - Labor Day.
 Tuesday 3 - Final date for dropping courses without receiving a grade of "W".

November, 2002

Tuesday 12 - Final date for submission of theses/dissertations and committee examination reports for Fall commencement.
 Tuesday 20 - Thanksgiving Holiday begins at 5:00 pm.
 Monday 26 - Classes resume.

December, 2002

Wednesday 11 - Fall Semester Ends.
 Thursday 12 - Commencement.

January, 2003 (Spring Semester)

Wednesday 8 - Registration.
 Thursday 9 - Classes begin.
 Monday 20 - Martin Luther King Jr. Holiday.
 Wednesday 22 - Final Date for adding courses for credit.
 Tuesday 28 - Final Date for dropping courses without receiving a grade of "W".

February, 2003

Friday 28 - Mardi Gras Holiday begins at 5:00 p.m.

March, 2003

Wednesday 5 - Classes resume.

April, 2003

Thursday 17 - Easter Holidays begin at 5:00 p.m.
 Tuesday 22 - Classes resume.
 Thursday 17 - Final date for submission of theses/dissertations and committee examination reports for Fall commencement.

May, 2003

Friday 16 - Fall Semester Ends.
 Saturday 17 - Commencement, 10:00 a.m.

May, 2003 (Summer Semester)

Wednesday 21 - Registration.
 Thursday 22 - Classes begin.

June, 2003

Thursday 4 - Final date for adding course for credit.
 Tuesday 10 - Final date for dropping courses without receiving a grade of "W".

July, 2003

Friday 4 - 4th of July Holiday.
 Wednesday 9 - Final date for submission of approved theses /dissertations and committee examination reports for Summer Commencement.

August, 2003

Friday 8 - Summer Semester ends.
 Saturday 9 - Commencement.

August, 2003 (Fall Semester)

Wednesday 13 - Registration.
 Thursday 14 - Class begin.
 Wednesday 27 - Final date for adding course for credit.

September, 2003

Monday 1 - Labor Day.
 Thursday 2 - Final Date for dropping courses without receiving a grade of "W".

November, 2003

Tuesday 11 - Final date for submission of theses/dissertations and committee examination report for Fall commencement
 Tuesday 25 - Thanksgiving holidays begin at 5:00 p.m.

December, 2003

Wednesday 10 - Fall Semester ends.
 Thursday 11 - Commencement.

January, 2004 (Spring Semester)

Wednesday 7 - Registration.
 Thursday 8 - Classes begin.
 Monday 19 - Martin Luther King, Jr. holiday.
 Wednesday 21 - Final date for adding courses for credit.
 Tuesday 27 - Final date for dropping courses without receiving a grade of W.

February, 2004

Friday 20 - Mardi Gras holiday begins at 5:00 p.m.
 Wednesday 25 - Classes resume.

April, 2004

Thursday 8 - Easter holiday begins at 5:00 p.m.
 Tuesday 13 - Classes resume.
 Thursday 15 - Final date for submission of approved theses, dissertations and committee examination reports for Spring Commencement.

May, 2004

Friday 14 - Spring semester ends.
 Saturday 15 - Commencement at 10:00 a.m.

May, 2004 (Summer Semester)

Wednesday 26 - Registration.
 Thursday 27 - Classes begin.

June, 2004

Wednesday 9 - Final date for adding courses for credit.
 Tuesday 15 - Final date for dropping courses without receiving a grade of W.

July, 2004

Monday 4 - Independence Day holiday.
 Wednesday 7 - Final date for submission of approved theses, dissertations and committee examination reports for Summer Commencement

August, 2004

Friday 6 - Summer Semester ends.
 Saturday 7 - Commencement at 10:00 a.m.

NEW ORLEANS DIVISION COURSE DESCRIPTIONS

Below are listed the courses of instruction carrying graduate credit which are offered by the Departments of the New Orleans Division. No credit is given for any course unless the student has been duly registered in that course.

The amount of credit given for the completion of a course is based on the number of lectures or recitations a week for one semester of seventeen weeks; for example, one credit represents one hour of lecture or recitation a week for one semester. Two hours of laboratory work (in certain courses, three hours) is considered the equivalent of one lecture or recitation hour. When a course consists entirely or partly of laboratory, that fact is stated in the description of the course. When not otherwise specified, the course consists of lectures or recitations.

If the number of credits listed for a course is variable (for example, "24 cr."), the credit hours to be obtained by a student must be determined and recorded at the time of the student's registration. Any subsequent increase in the amount of credit will be equivalent to adding a new course, and this will not be permitted after the expiration of the period during which course changes may be made.

Graduate courses may be offered only when required by a minimal number of students enrolled for degrees.

BIOCHEMISTRY AND MOLECULAR BIOLOGY M.S., PH.D.

The goals of graduate education in the Department of Biochemistry and Molecular Biology are to provide the foundation necessary to design and execute biochemical experiments and to communicate the findings of these experiments to others in the scientific community. Skills gained through study and practice in the use of scientific methods help qualify the graduate to pursue a career in biomedical science in industry or at a university, research institute, or hospital. The program is flexible and designed to meet the needs of each student individually. Some areas of biochemistry in which faculty members are focusing their research efforts include cell signaling, enzymology, oncogene and tumor suppressor genes, neurochemistry, metabolism, developmental biochemistry, cancer biology, endocrinology, and the biochemistry of aging. Topics of interest in molecular biology include gene expression, cloning, and DNA sequencing. Concepts and principles that will be required as the student progresses in the program are stressed in both teaching and research. Laboratory research and investigation are vigorously emphasized at all stages in the program. Research is performed within the Health Sciences Center, at the Ochsner Medical Institution and elsewhere under special arrangement. Health Sciences Center positions available include laboratories in the Departments of Pathology and Ophthalmology, as well as Biochemistry and Molecular Biology. Introductory and advanced courses in many areas of biochemistry are offered. A student should consult the course director to ascertain adequacy of preparation for each particular course before registering for that course. Requests for information and application materials may be submitted to the School of Graduate Studies. A combined score of at least 1,100 (quantitative plus verbal) on the Graduate Record Examination General Test is required. The advanced test of Chemistry or Biology is recommended. Other requirements are proof of acquisition of a suitable undergraduate degree and payment of a nominal application fee. A Departmental selection committee will screen all candidates prior to final consideration by the School of Graduate Studies.

Core Requirements

The Program for obtaining the Ph.D. can be tailored to the requirements of each individual student, but the core requirements for all students are:

201 Fundamentals of Biochemistry -----	5 Credits
240 Molecular Biology -----	5 Credits
251 Molecular Structure and Function of the Cell -----	3 Credits
207 Special Methods of Research -----	12 Credits
298 Seminar -----	3 Credits
299 Seminar -----	3 Credits
Electives * -----	17 Credits
400 Dissertation Research -----	15 Credits

* At least 8 cr. must be taken from Departments other than Biochemistry and Molecular Biology.

Biochemistry And Molecular Biology Course Descriptions

201 Fundamental Biochemistry. 5 Credits,

This course represents a comprehensive introduction to the chemical principles associated with living organisms. The following topics are included: bioenergetics; proteins; enzymes; membranes; oxidative phosphorylation; carbohydrate, lipid, amino acid and nucleotide metabolism; and regulation of intermediary metabolism. The molecular logic of living systems is emphasized. The course consists of lectures, student presentations, and discussion.

207 Introduction to Special Methods of Research.

1-9 Credits, (Credit to be specified at time of registration.) Theoretical discussions and laboratory work in an area of research methodology, directed by an expert in the use of the method.

208 Cell Culture Techniques. 1 Credit,

Cell Culture Techniques. Prerequisite, consent of instructor. Class limited to 6 students.

216 Endocrinology. 3 Credits,

The topics presented include endocrine control systems, and hormone secretions and their mechanism of action at the physiologic, cellular and molecular levels. (Conducted jointly with the Department of Physiology; this is the same course as Physiology 216 and may be used toward a major in either Department).

221 Protein Chemistry. 2 Credits,

Two hours of lecture a week. Discussions include the isolation, properties, structure, and biology of the protein molecule.

223 Physical Biochemistry. 3 Credits,

Three hours of conference and lecture per week involving discussions of physical and chemical techniques used in biochemistry to study macromolecular architecture and interactions. Two semesters of physical chemistry is prerequisite.

240 Molecular Biology. 3-6 Credits,

A lecture and seminar course devoted to a consideration of gene expression in eukaryotic and prokaryotic organisms. Topics include replication, gene structure, ribonucleic acid, and protein biosynthesis.

251 Molecular Structure and Function of the Cell.

3 Credits, The course is intended to explore the central role of the cell in modern biology. An integrative approach will be used beginning with historical precedents in anatomy and incorporating knowledge gained as the tools of biochemistry, electron microscopy, immunology and molecular genetics are focused upon cellular structure and operation. (Conducted jointly with the Departments of Physiology and Anatomy; this is the same course as Physiology 251 and Anatomy 251 and may be used toward a major in either Department.)

256 Neurochemistry. 3 Credits,

Three hours of lecture per week. A basic exposition of the chemical and metabolic characteristics of nervous tissue. The basic properties of neurons, neurotransmitters, metabolism and receptor action are covered.

260 Molecular Biology of Cancer. 3-4 Credits, This is an advanced level course that deals with the biochemistry, cell biology, molecular biology, and genetics of cancer. The current scientific literature on this topic will be emphasized. Selected clinical faculty will also present the medical aspects of cancer. Biochemistry 201 and 240 are prerequisites for taking this course.

280 and 281 Advanced Topics in Biochemistry.

1-4 Credits, One to four hours of lecture and discussion per week. The topics will be arranged by consultation with faculty members expert in the areas. The topics will add breadth and depth to the fundamentals taught in other courses and will be chosen on the basis of their timeliness and student and faculty interest. Biochemistry of the cell cycle, comparative biochemistry, enzymology, intermediary metabolism, vitamins and nutrition, mass spectrometry, and bioenergetics are representative topics. A given topic will recur on a cycle of two to three years. The student's transcript will indicate, in addition to the course title, the particular topic covered during the given semester. This procedure will serve to clarify the repeat appearance of Biochemistry 280 and 281 on the student's transcript.

298 and 299 Seminar. 1 Credits,

Reports on research progress and on current literature.

300 Thesis Research. Variable Credits, (only 6 hours may be used for credit toward the master's degree). Registration by permission of the major professor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits,

Registration by permission of the major professor. Amount of credit must be stated at time of registration.

BIOMETRY M.S.

The Department of Public Health and Preventive Medicine offers a programs in biometry leading to the M.S. degree. A broad range of alternatives is available to accommodate individual goals and yet provide a high quality graduate degree. Both classical and newly developed techniques are emphasized. Special areas of faculty competence include computer techniques, design of clinical and nonclinical experiments, categorical methods, survival analysis and measurement methods. The program is designed to provide sound preparation for students planning a career in Biostatistics. Each student is required to write and defend a thesis consisting of a body of work which is of the caliber that would be publishable in the statistical literature.

Biometry Program Core Requirements

The core requirements for the M.S. Program in Biometry for all students are:

221 Biometric Methods in the Health Sciences 1 -----	3 Credits
222 Biometric Methods in the Health Sciences 2 -----	3 Credits
223 Introduction to Theory of Probability -----	3 Credits
224 Introduction to Statistical Inference -----	3 Credits

Biometry Course Descriptions**221 Biometric Methods in the Health Sciences 1.**

3 Credits, Three hours of lecture per week. General introduction to descriptive and inferential statistics: The role of biometry in the health sciences, techniques and principles for summarizing data, estimation, hypothesis testing and decision making. Examples and problems from the health sciences are used.

222 Biometric Methods in the Health Sciences 2.

3 Credits, Three hours of lecture per week. Continuation of 221. Additional biometric techniques in health sciences: Hypothesis testing via the general linear model, including analysis of variance and linear regression, methods of correlation analysis, and multiple regression techniques. Examples and problems from the health sciences are used.

223 Introduction to Theory of Probability. 3 Credits,

Three hours of lecture per week. Introductions to probability theory and distributions. Elementary concepts of probability, Markov chains, Bayes' theorem, random variables and probability distributions, multivariate distributions, joint, conditional and marginal distributions; functions of random variables, moments, moment generating functions, covariance and correlation, conditional expectation; properties of the sample mean, the laws of large numbers, convergence, and the central limit theorem.

224 Introduction to Statistical Inference. 3 Credits,

Three hours of lecture per week. A comprehensive, but elementary survey of the theory of classical and Bayesian statistical inference. Prior and posterior distributions, maximum likelihood estimation, Bayesian decision procedures; unbiased estimation, sufficiency, consistency, sampling distributions of estimators, Fisher information, confidence intervals; likelihood ratio tests, uniformly most powerful tests, unbiased tests, goodness of fit tests; introduction to nonparametric methods, robust estimation and linear statistical models. Prerequisite: 223.

227 Introduction to Computer Programming. 3 Credits,

Four and one-half hours of lecture per week, summer semester. An introductory programming course oriented toward scientific applications. Topics include data types, assignment statements, operators, sequential control, conditional control, iteration, subprograms, arrays, character manipulation and ethical issues. Prerequisite: Permission of the instructor.

241 Sampling Methods in the Health Sciences.

3 Credits, Three hours of lecture per week. Methods for conducting sample surveys in the health sciences: Biases and non-sampling errors, probability and non-probability samples, simple random sampling, stratification, varying probabilities of selection, multistage sampling, systematic sampling, cluster sampling, double sampling, and ratio estimation.

242 Design and Analysis of Experiments. 3 Credits,

Three hours of lecture per week. Principles of experimentation. Completely randomized designs, randomized complete block designs, factorial designs, Latin squares, crossover designs, blocking, response surface designs. Applications are in the health sciences. Prerequisite: Permission of the faculty.

244 Analysis of Categorical Data in the Health Sciences.

3 Credits, Model formulation, parameter estimation, and hypothesis testing for categorical data from different types of experimental and survey research situations: Characterization of interaction in multi-dimensional contingency tables, stepwise regression procedures for proportions, and life table analysis of survival, using the methods of weighted least squares and maximum likelihood.

245 Introduction to Measurement and Evaluation.

3 Credits, The purpose of this course is to expose students to mathematically rigorous measurement theory and to explicate the meaning and utility of no-arbitrary units of measurement. The course will provide students with the opportunity to apply these measurement concepts to data, employing computer software in applications of measurement theory to problems involving the evaluation of experimental and programmatic treatment effects.

250 Multivariate Methods. 3 Credits,

Three hours of lecture per week. Review of matrix algebra, multivariate normal distribution, multivariate general linear model, principal components, factor analysis, cluster analysis, discriminant analysis. Applications are in the health sciences. Prerequisites: Biometry 222 and 223.

262 Statistical Methods in Biological Assay. 3 Credits,

Three hours of lecture per week. Statistical methods for bioassay: Dosage response curves, potency estimation, validity tests, quantitative and quantal responses, tolerance distributions; parallel line and slope ratio assays, topics in design, and shortcut methods.

264 Clinical Trials and Sequential Methods. 3 Credits,

Three hours of lecture per week. Wald's sequential probability ratio test, its operating characteristic, and average sample number: Sequential medical trials, statistics of drug screening, ethics, design and interpretation of clinical trials, and recent developments in sequential analysis applied to medicine and public health.

267 Applied General Linear Models. 3 Credits,

Three hours of lecture per week. This is a practical course on the use of general linear models. Topics include a review of relevant matrix algebra; general linear models including multiple regression, analysis of variance, analysis of covariance, multivariate response, and logistic regression models; methods for estimation, hypothesis testing and diagnostics; model specification for designed experiments and for observational studies; applications are in the health sciences. Prerequisites: 221, 222, 223, 224 or equivalent.

269 Theory of General Linear Models. 3 Credits,

Three hours of lecture per week. This course presents the essentials of statistical inference theory for general linear models. Topics include a review of relevant matrix algebra; distributions of quadratic forms; theoretical aspects of estimation, hypothesis testing and diagnostics. Prerequisite: Permission of the instructor.

281-282 Special Topics in Biometry. 1-4 Credits, Hours and credits to be arranged depending on the particular topic. This course is designed, depending upon the students' interest and staff availability, to cover advanced topics such as stochastic processes, time series analysis, analysis of survival distributions, experimental design, multivariate analysis, etc.

283 Advanced Theory of Inference 1. 3 Credits,

Three hours of lecture per week. A mathematical study of the classical theory of statistical inference. Moment generating functions and characteristic functions, distributions of order statistics, exponential family of distributions, models of convergence, the CramerRao inequality, efficiency, best unbiased estimation, completeness, minimal sufficiency, maximum likelihood estimators; monotone likelihood ratio, unbiased and invariant hypothesis tests, generalized likelihood ratio tests, Bayes' and minimax procedures. Prerequisite: 224.

284 Advanced Theory of Inference 2. 3 Credits,

Three hours of lecture per week. A mathematically rigorous survey of selected topics in the theory of statistical inference such as: Bayesian inference, decision theory, information theory, large sample theory, multivariate distributions, nonparametric inference, sequential analysis, stochastic processes, time series, components of variance. Prerequisite: 283.

296 Statistical Consulting in the Health Sciences.

3 Credits, A practical course designed to expose students to real consulting situations and the statistical problems that arise in the health sciences. The student will work on a consulting project under the supervision of a faculty member and will present a progress report each week. Prerequisites: Biometry 221, 222, 223, 224.

298 Seminar in Biometry. 1 Credit,

Reports on research progress in current literature. A maximum of two credits may be earned during the period of graduate work.

300 Thesis Research.

Registration by permission of the Department. Amount of credit must be stated at time of registration.

CELL BIOLOGY AND ANATOMY M.S., PH.D.

The Department of Cell Biology and Anatomy offers programs leading to the M.S. and Ph.D. Degrees. Areas of concentration are cell biology, developmental biology and neurobiology. There is considerable overlap in these fields, with, for example, some faculty working in the areas of cellular or developmental neurobiology, and others with interests in the cell biology of reproduction and development. The goal of the program is to train promising students for careers in research and teaching. Students are encouraged to develop broad expertise in the disciplines of biochemistry, molecular biology, immunology, and cell physiology. The Departmental Graduate Program Committee evaluates applications. Admission is based upon Graduate Record Examinations (a minimum combined score of 1100 on verbal and quantitative portions), undergraduate grade point average (minimum of 3.0), and three letters of recommendation. Advanced Subject GRE is required, and will also be taken into consideration.

Expected time for completion of the Masters degree is 2-3 years; for the Ph.D. 4-6 years. Students become involved in ongoing research projects during the first year in a laboratory rotation format, and are encouraged to identify a dissertation advisor during this period, or shortly thereafter. Faculty members are integrally involved with the LSUHSC Neuroscience Center of Excellence, the LSUHSC Eye Center, and the LSUHSC Stanley S. Scott Cancer Center. Interaction with members of these centers is encouraged.

Cell Biology And Anatomy Course Descriptions

189 Human Gross Anatomy of Upper Extremity, Thorax and Back. 3 Credits, This course is centered around dissection of the upper extremity, thorax and back of the human body. Dissection is supplemented with films, cross-sections, models and clinical correlations of these specific areas. An accompanying lecture series is designed to orient, guide and stimulate the student toward independent effort.

190 Human Gross Anatomy of the Head and Neck.

3 Credits, This course is centered around dissection of the Head and neck of the human body. Dissection is supplemental with films, cross-sections, models and clinical correlations of these specific areas. An accompanying lecture series is designed to orient, guide and stimulate the student toward independent effort.

191 Human Gross Anatomy of Abdomen, Pelvis,

Perineum and Lower Extremity. 3 Credits, This course is centered around dissection of the abdomen, pelvis perineum and lower extremity of the human body. Dissection is supplemented with films, cross-sections, models and clinical correlations of these specific areas. An accompanying lecture series is designed to orient, guide and stimulate the student toward independent effort.

192 Cell Biology and Microscopic Anatomy. 5 Credits,
The initial portion of the course stresses organization of the cell, the biology of cellular organelles and the localization of important chemical constituents at the subcellular level. Additional presentation and discussion sessions throughout the course present the student with comprehensive information of the physiology, biochemistry, and molecular biology of cellular function. Histology lectures and laboratories emphasize the structural and functional relationships of human tissues.

193 Human Development. 1 Credit,

The normal and abnormal aspects of human prenatal development are presented in a lecture series which is coordinated, when possible, with the dissection schedule in gross anatomy. Definitive adult structures and their relations are appreciated through an understanding of their formation and relations during the embryonic period. Included are important features of fetal development which are essential for normal birth and adaptation to the extrauterine environment.

194 Radiographic Anatomy. 1 Credit,

The fundamentals of radiology are presented in a series of lectures and demonstrations. Emphasis will be placed on the interpretation of normal radiographs from each body region. Presentations will be coordinated with the gross anatomy dissection schedule and given jointly with the Department of Radiology.

195 Neuroscience. 6 Credits, An introduction to the structure and function of the nervous system, as well as its dysfunction.

220 Advanced Special Dissection.

Hours and credits to be arranged. Students perform detailed dissections of specific selected regions of the body.

227 Cell and Developmental Biology. 3 Credits,

Lectures and group discussions will focus on selected topics involving cell and developmental biology. Topics may include gametes and their interactions, embryogenesis, cell-cell and cell-matrix interactions, differentiation, etc. A wide range of developmental systems will be considered.

251 Molecular Structure and Function of the Cell.

3 Credits, The course is intended to explore the central role of the cell in modern biology. An integrative approach will be used beginning with a historical perspective and incorporating knowledge gained as the tools of biochemistry, electron microscopy, immunology and molecular genetics are focused upon cellular structure and operation. (Conducted jointly with the Departments of Biochemistry and Physiology; this is the same course as Biochemistry 251 and Physiology 251 and may be used toward a major in either Department).

252 Developmental Neuroscience. 3 Credits,

This course will focus on recent advances in developmental neuroscience. Two hour formal lectures and a one hour seminar component per week will cover neural induction, neurogenesis, cell-ECM interactions, neural crest cell migration, neurotrophins, signal transduction, apoptosis axon guidance, axon-target interactions, synaptogenesis and activity-dependent refinement of neural connections. Students will be required to critically evaluate and present current literature on these subjects and write short essays.

255 Advanced Head and Neck Anatomy. 4 Credits,

One and one-half hours of lecture and two and one-half hours of laboratory. This course is designed as an advanced course in Head and neck anatomy for post-graduate students in medicine, dentistry and the School of Graduate Studies. The course will include segments on the basic gross anatomy, neuro-anatomy and neuro-physiology of the Head and neck. Special emphasis on functional considerations and

256 Microanatomy and Cell Biology of the Oral Cavity.

2 Credits, This course includes a study of the development, microanatomy, and cell biology of structures associated with the oral cavity. The lectures will include basic and current information on the development and structure of all components of teeth (enamel, dentin, cementum, and pulp), the supporting structures of teeth (periodontal ligament and alveolar bone), oral mucosa, and salivary glands. Current theories on tooth eruption will also be discussed. The laboratory will consist of demonstrations and self-study. Prerequisite: Anatomy 192.

270 Laboratory Rotation. 3 Credits,

Students will work in one or more faculty laboratories to become acquainted with the various types of research conducted in the Department and with techniques used in these labs.

271 Biomedical Imaging. 3 Credits,

This course will be useful for individuals from both basic science and clinical Departments who would like to become educated users of image analysis software and computer equipment. The use of image analysis programs and associated computer hardware has made the non-invasive clinical diagnosis more widespread and opened up new avenues in basic research in many different fields that was not possible only a few years ago. Overall, this course does not intend for the students to be experts at either the software or hardware used in image analysis and processing or to become experts. Therefore, the prerequisites are an interest and professional need for the use of image analysis. Using these systems is the most important part of making image analysis more useful in the students own work; therefore, small projects will form the backbone of the course. The course will bring in experts in particular fields to address special topics, as well as using faculty from a number of Departments at the LSU Health Sciences Center. Topics that will be discussed are as follows: the use of image analysis and image processing; software packages of several types, including their pitfalls and cost-to benefit ratio; statistical methods in image processing; an introduction to the types of filters applied to images and how these are implemented; 2D and 3D image processing, including how these can be applied with specific examples; computers for image processing, which will include a discussion by technical representatives from the industry; use of image analysis in specific applications in basic and clinical science, pointing to similarities and differences; and new developments in image analysis and their impact.

280 Special Topics in Cell Biology and Anatomy.

2-4 Credits, Lectures discussions, research and/or laboratories will be arranged on areas not adequately covered in other scheduled courses. This course is designed to permit graduate students to explore one or more areas of particular interest in detail. Emphasis will be placed on those areas of special interest to faculty members of the Anatomy Department.

280G Special topics: Synaptic Organization of The

Brain. 3 Credit Hours, This course will provide an in-depth examination of the physiologic and anatomic organization of the major structures of the brain and spinal cord. The course will consist of two 2-hour lectures per week, each week being devoted to a different CNS structure and taught by a different instructor with expertise in the field. The organization of each CNS structure, including the cellular physiology, major synaptic inputs, intrinsic synaptic organization, and primary outputs of the structure will be emphasized in the lectures.

290 Seminar. 1 Credit,

Students are required to attend and participate in oral presentations of research data and review of current topics of interest in Anatomy. A maximum of 4 credits toward the Ph.D. or MS degrees may be earned. Students in the Anatomy Program are required to participate in Seminar each semester regardless of credit.

300 Thesis Research. variable Credits, (only 6 hours may be used for credit toward the master's degree). Registration by permission of the major professor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits,
Registration by permission of the Head of the Department. Amount of credit to be stated at the time of registration. Laboratory investigation of the problem selected by the student for the student's doctoral dissertation must be pursued by every candidate.

HUMAN GENETICS M.S., PH.D.

The goal of the graduate program in human genetics is to provide the student with the skills and expertise necessary for a successful research career through course work, seminars, and laboratory research. Required course work covers a variety of topics in human, molecular, medical and statistical genetics, and gene therapy. Students are introduced to the field through one-semester courses in basic human genetics and population genetics, and a two-semester course in biometric methods.

Faculty members have a broad range of research interests including identification, characterization, and functional studies of disease genes, gene therapy, genetic epidemiology, and legal and ethical issues in medical genetics.

Core course requirements for the Ph.D. degree in Human Genetics are:

BIOM 221	Biometric Methods in the Health Sciences 1 * -----	3 Credits
BIOM 222	Biometric Methods in the Health Sciences 2 * -----	3 Credits
GENE 231	Basic Human Genetics * -----	3 Credits
GENE 236	Mathematical and Population Genetics * -----	3 Credits
GENE 238	Genetic Linkage Analysis -----	3 Credits
GENE 271	Medical Genetics Clinic -----	3 Credits
GENE 246	Topics in Gene Therapy -----	3 Credits
GENE 253	Laboratory Methods in Molecular Genetics -----	3 Credits
PHYS 251	Molecular Structure and Function of the Cell * -----	3 Credits
INT 220	Ethics in the Biomedical Sciences * -----	1 Credit
BIOCH 201	Fundamental Biochemistry -----	5 Credits
BIOCH 240	Molecular Biology -----	5 Credits

* Courses required for the M.S. degree

HUMAN GENETICS COURSE DESCRIPTIONS

231 Basic Human Genetics. 3 Credits,

Three hours of lecture per week. An introduction to the basic principles of Mendelian genetics, quantitative and multifactorial inheritance, molecular and biochemical genetics, cytogenetics, statistical genetics, and genetic counseling. Examples from human genetics illustrate these principles; selected classical experiments from basic genetics are also presented.

236 Mathematical and Population Genetics. 3 Credits,

Three hours of lecture per week. An introduction to the fundamental elements of mathematical and population genetics. Topics include probability, Bayes' theorem, Hardy-Weinberg equilibrium, inbreeding, selection, mutation, models for polygenic and multifactorial inheritance, linkage and simple segregation analysis. Prerequisite: 231.

238 Genetic Linkage Analysis. 3 Credits,

Three hours of lectures per week. This advanced course covers the theoretical and methodological aspects of human genetic linkage, including pairwise and multioint analyses, and parametric and non-parametric approaches. Current scientific literature will be emphasized. Prerequisite: 236.

246 Topics in Gene Therapy. 3 Credits,

Three hours of lectures per week. The purpose of this course is to provide graduate students with an overview of the current state of development of gene therapy and its future prospects. The course will cover gene transfer strategies, as well as preclinical and clinical applications of gene therapy.

253 Laboratory Methods in Molecular Genetics.

3 Credits, Four hours of laboratory per week. Biochemical theory, techniques, and methods focusing on the detection of DNA polymorphism. Procedures include PCR and sequencing. Prerequisite: Permission of the Instructor.

254 Statistical Methods in Human Genetics. 3 Credits,

Statistical theory of methods of human genetic analysis. Topics include: genetic epidemiological approaches to familial aggregation, pedigree linkage and segregation analysis. Emphasis is placed on using computer programs for genetic analysis. Prerequisite: 236.

271-272 Medical Genetics Clinic. 3 Credits,

Three hours of clinic per week. Patient contact in a clinical setting provides experience in interviewing and counseling techniques, risk assessment, medical and genetic aspects of inherited disease, an understanding of the limitations, interpretations and significance of specialized laboratory and genetic procedures, and a knowledge of available health care resources for appropriate referral. Up to four semesters may be taken for credit. Prerequisite: 231.

291-292 Special Topics in Human Genetics. 1-4 Credits,

Hours and credits to be arranged depending on the particular topic. This course is designed, depending upon the students' interest and staff availability, to cover advanced aspects of topics already covered at an elementary level, or new topics such as behavioral genetics, immunogenetics, genetic demography, developmental genetics, protein evolution, and legal and ethical issues in medical genetics.

299 Seminar in Human Genetics. 1-2 Credits,

Reports on research progress and on current literature. A total of four credits must be earned during the period of graduate work.

300 Thesis Research.

Registration by permission of the Department. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits,

Registration by permission of the Head of the Department. Amount of credit to be stated at the time of registration.



MICROBIOLOGY, IMMUNOLOGY AND PARASITOLOGY M.S., PH.D.

The program accepts qualified candidates for the M.S. and Ph.D. degrees. For the M.S. degree, a minimum of two years of full time study will generally be required for completing course work and a thesis. For the Ph.D. degree, it will be expected that a period of at least four years will be devoted to full time study, including dissertation research and defense. Important requirements to be fulfilled before initiation of dissertation research include medical microbiology, biochemistry courses and a selection of microbiological specialty courses, depending on the candidate's aims. The faculty has major areas of competence in bacteriology, virology, immunology and parasitology. Application is made through the School of Graduate Studies and referred to the Department as indicated. Additional inquiries for admission or course details should be forwarded to the following e-mail address: mipinfo@lsuhsc.edu. All applicants are required to submit Graduate Record Examination scores. Subject tests are optional. Medical College Admission Test scores may be acceptable for students or recent graduates from Medical School. All candidates will be evaluated by the Departmental faculty before final action is taken by the School of Graduate Studies. Applicants should have taken courses in general and organic chemistry with laboratory, college algebra and trigonometry, a general biology course (e.g. zoology, botany, comparative anatomy) and one course in general microbiology. Microbiological subspecialty courses (e.g. bacteriology, microbiology, genetics, immunology, virology) are highly desirable.

Core Requirements

The Program for obtaining the Ph.D. can be tailored to the requirement of each individual student.

The minimum core requirements are:

221 Medical Microbiology -----	9 credits
221 Medical Microbiology Lecture -----	4 credits
221A Medical Microbiology Laboratory ---	3 credits
222 Medical Immunology -----	2 credits
225 Medical Bacteriology -----	3 credits
276 General and Molecular Virology ----	3 credits
280 Techniques in Microbiology -----	3 credits
296 Fundamentals of Immunology -----	3 credits
298 Seminar -----	4 credits
400 Dissertation Research Total of ----	15 credits
201 Fundamental Biochemistry -----	5 credits
240 Molecular Biology -----	3 credits

MICROBIOLOGY, IMMUNOLOGY AND PARASITOLOGY COURSE DESCRIPTIONS

221 Medical Microbiology. 9 Credits,

Five or six hours of lecture and six or ten hours of laboratory. A comprehensive course covering the principles of bacteriology, mycology, virology, parasitology, immunology, and the application of these principles to the diagnosis, prevention, and treatment of infectious diseases. In illustration of these principles, a series of clinical correlations is included in the lecture time.

221 Medical Microbiology Lecture. 4 Credits,

Four hours of lecture. A comprehensive course covering the principles of bacteriology, mycology, virology, parasitology, and the application of these principles to the diagnosis, prevention, and treatment of infectious disease. In illustration of these principles, a series of clinical correlations is included in the lecture time.

221A Medical Microbiology Laboratory. 3 Credits, Laboratory section of Medical Microbiology 221. For majors only and must be scheduled with the 4 credits Medical Microbiology 221.

222 Medical Immunology. 2 Credits,

A comprehensive course covering the principles of immunology and the application of these principles to the diagnosis and control of immunologic and infectious diseases (the Immunology portion of 221 Medical Microbiology).

225 Medical Bacteriology. 2-4 Credits,

Number of hours and amount of credit to be stated at time of registration. Permission required. An advanced study of bacteria pathogenic to man, their cultural and antigenic characteristics, their pathogenic mechanisms, the immune responses of the human host to their invasion, the epidemiology of the diseases they produce, and their antibiotic and chemotherapeutic sensitivity.

(230-242: Courses with the Dental School curriculum)

230 Oral Immunology. 2 Credits,

Fundamentals of immunology with special reference to the biology, in both health and disease, of the oral cavity. Host microbial interactions important in caries and periodontal diseases are examined in detail. Experiments in immunology are designed to illustrate basic principles of immunobiology.

231 Oral Microbiology. 2 Credits,

Lectures, assigned readings, and discussions on acquisition, distribution, and interactions of the oral flora; mechanisms of dental plaque formation; etiology of dental caries; identification and characterization of oral bacteria; prevention of caries; bacteria of the gingival crevice and bacterial etiology of periodontal diseases; etiology of periapical infections; other infections of the oral cavity.

241 Microbiology and Oral Disease. 1 Credits,

Review of major topics in oral microbiology to serve as a foundation for written and oral presentations reflecting current research problems in oral microbiology. In addition, student will prepare oral presentations and papers describing a general area of investigation and describe methods useful in solving these problems and their importance in dental research.

242 Advanced Dental Immunology. 1 Credits,

This course is designed as an advanced course in the immunology of oral disease. Functional considerations and clinical correlations will be presented. Students will explore the interrelationships between host, diet, and microorganisms with special emphasis on the role of immune factors in modulating the causation of dental caries, periodontal, and endodontic diseases.

263 Tropical Medicine. Up to 6 Credits,

Opportunities for supervised training in research, clinical tropical medicine, epidemiology, field and laboratory investigation, and public health in Latin America are available in limited numbers. Applications should be submitted eight to 12 months in advance of the training period. Graduate students with appropriate interests will be considered. Applicants should begin the study of Spanish before or immediately after approval of their applications.

276 General and Molecular Virology. 3-5 Credits,

Number of hours and amount of credit to be stated at time of registration. Permission required. An introduction to the cellular and molecular biology of bacterial and animal viruses. Particular emphasis is given to virus cell interactions at the molecular level, including the immune response to viral infections, as well as to current research on mechanisms of viral replication and its effects on biochemical regulatory mechanisms in host cells. Lectures and seminars.

277 Advanced Virology. 3-6 Credits,

By arrangement.

280 Techniques in Microbiology. 1-6 Credits, Number of hours and amount of credit to be stated at time of registration. Permission required. A laboratory course designed to familiarize the student with modern technology of molecular biology, including analytical and preparative centrifugation, electrophoresis, spectrophotometry, column chromatography, etc. Additional techniques commonly used in immunology, bacteriology, and virology laboratories are also included. Emphasis will be on applications to simple problems conducted at the laboratory bench.

281 Selected Topics in Microbiology. Topic and credit by arrangement.

288 Pathogenesis of Microbial Infections. 3 Credits, Permission required. Can be taken concurrently with Medical Microbiology 221. Study of microbial virulence factors, their interactions with host tissues and host defense mechanisms.

296 Fundamentals of Immunology. 3-5 Credits, Number of hours and amount of credit to be stated at time of registration. Permission required. Fundamentals of immunology, including immunochemistry and cellular aspects of the immune response, with illustrative reference to immunological factors in human health and disease.

297 Advanced Immunology. 3-6 Credits, By arrangement.

298 Seminar in Microbiology. 1 Credit

299 Research Proposal in Microbiology. 3 Credits, A required course for all doctoral candidates in which the student prepares, in National Institutes of Health grant format, a written proposal on the candidates dissertation research. The student presents and defends his proposal to his/her research committee as a basis for the Preliminary Examination.

300 Thesis Research. variable Credits (only 6 hours may be used for credit toward the master's degree). Registration by permission of the major professor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits, Registration by consent of the Head of the Department. Amount of credit to be stated at the time of registration.

NEUROSCIENCE PH.D.

The multidisciplinary graduate program in Neuroscience is an important educational program of the LSU Neuroscience Center of Excellence and prepares students for careers in teaching and research in academic institutions, the biomedical industry or government agencies. The training program consists of course work, seminars and the development of independent research ability. In the first two years, students will take all required basic biomedical science and Neuroscience graduate courses. Advance courses and individual directed research are undertaken to fulfill the particular educational needs of the graduate student. At the beginning of the second year of graduate school, students are expected to chose a particular area of research and a major professor who will supervise their doctoral research.

Applications for admission to the graduate program in Neuroscience are reviewed by a faculty committee. To be considered for acceptance into the program applications and for financial assistance applications should be received by February 15th of the year in which the students intend to enroll. Usually, all accepted students will receive a graduate stipend. Minimum requirements for admission to the program include a degree from a university or its equivalent, achievement of a minimum of a 2.5 grade point average overall and a 3.0 average in science courses as an undergraduate, on a 4.0 scale and applicants are expected to have taken the GRE and to have obtained a minimum combined score of 1200 on the verbal and quantitative portions of the

exam. An advanced GRE examination in a science area must also be taken prior to being accepted to the graduate program in neuroscience. Foreign students are required to achieve at least 550 on the TOEFL exam. In the fall of the first year all of the students are expected to take Investigative Neuroscience which provides an introduction to neuroscience and a broad overview of both fundamental and important clinical areas of neuroscience. Other courses that are required for the curriculum are listed. Students after passing the examinations to be admitted into doctoral candidacy have an opportunity to fulfill their individual course requirements in the areas that they specifically need.

Core Requirements

201 Biochemistry -----	5 credits
240 Biochemistry -----	5 credits
221 Biometry -----	3 credits
203 Neuroscience -----	5 credits
250 Neuroscience -----	4 credits
270 Neuroscience -----	9 credits
290 Neuroscience -----	4 credits
195 Neuroscience -----	6 credits

NEUROSCIENCE COURSE DESCRIPTIONS

195 Neuroscience. 6 Credits, An introduction to the structure and function of the nervous system, as well as its dysfunction.

203 Investigative Neuroscience. 5 Credits, This course provides an introduction to neuroscience

250 Molecular Neurobiology. 4 Credits, Covering the molecular biology, chemistry, and pharmacology of the nervous system.

270 Laboratory Rotation. 3-4 Credits, Students will spend 8-10 weeks each in two laboratories per semester to familiarize themselves with specific laboratory techniques, use of laboratory equipment and data analysis and presentation. With the help of the laboratory supervisor, the student will initially write a paragraph on the project to be undertaken, and at the end will be expected to write a two-page paper on the project, comprising an Introduction, Materials and Methods, Results, and Conclusions section. The student will be expected to contact the investigator(s) well ahead of time to obtain permission and to make all necessary arrangements. Scheduling of times will of necessity be highly flexible and will be arranged by mutual agreement between the student and the investigator. A second semester of rotations will be taken in the following Spring, for a total of 3 to 4 hours individual laboratory rotations.

290 Neuro, Seminar 1 Credit, Students receive credit (Pass/Fail) for attending Neuroscience Center research seminars.

298 Seminar. 1 Credit, This is the Neuroscience Center's series of seminars, and its attendance is required of all students in the Program. A maximum of 4 credit hours, generally over the student's first two years, may be earned toward the doctorate.

400 Dissertation Research. 1-9 Credits, Registration by permission of the Director of the Interdisciplinary Neuroscience Training Program.

PATHOLOGY M.S., PH.D.

The goal of the program is to provide the education and training necessary for graduates to assume positions in academic pathology departments, service clinical and forensic laboratories, or in industry related to the clinical laboratory specialties. The recommended curriculum provides the student with knowledge in the clinical sciences considered particularly relevant to their pathology specialty: general and systemic pathology, clinical pathology, biochemistry, clinical chemistry, molecular pathology and toxicology. Research activities are clinically oriented, examining the causes, mechanisms and effects of disease. The didactic course work and the research is conducted in the Medical Center, and the clinical training in the clinical laboratories at Medical Center of Louisiana at New Orleans or at the Veterans Administration Medical Center, New Orleans. General entry requirements are those of the School of Graduate Studies. Special requirements include a minimum of 16 semester hours of undergraduate chemistry, and biology.

Core Requirements

Program for obtaining the Ph.D. is tailored to the requirements of each individual student, but the core requirements for all students are:

201 Biochemistry -----	5 credits
201 Pathology -----	3 credits
202 Pathology -----	1-6 credits
210 Pathology -----	1-6 credits
280 Pathology -----	1-4 credits
291 Pathology -----	4 credits
291A Pathology -----	2 credits
292 Pathology -----	4 credits
292A Pathology -----	2 credits
293 Pathology -----	4 credits
293A Pathology -----	2 credits
400 Pathology -----	15 credits

* Dependent on area of specialization

PATHOLOGY COURSE DESCRIPTIONS

201 Introduction to Methods in Pathology 1. 1-3 Credits,
A survey course on the principles of research, experimental design, biostatistics, laboratory safety and the theoretical background of the analytical methods and procedures encountered in research and clinical pathology laboratories.

202 Introduction to Methods in Pathology 2. 1-6 Credits,
(credit to be specified at the time of registration). Laboratory work in an area of the Department's research or service laboratories designed to introduce the student to the research and service activities under the direction of an expert in the use of the methodology.

210 Topics in Pathology. 2-6 Credits, (credit to be specified at time of registration). The course is intended to permit students to explore in detail, primarily through laboratory work, some areas of particular interest in pathology, for example clinical chemistry, medical informatics, molecular pathology, toxicology, research in atherosclerosis and cardiovascular disease or cancer epidemiology. The specialty area studied will be indicated on the student transcript in addition to the course title.

232 Advanced Pathology. 1-3 Credits,
One to three hours of lecture per week, to be arranged appropriate to topic and credit to be earned. The course is designed to permit graduate students to explore in an organized format, through lectures, and discussions (conferences), advances in specialized areas or subjects in general, systemic or clinical pathology which are not fully covered in other scheduled courses.

240 Forensic Pathology 1-3 Credits,
One to three hours of lecture per week . The purpose of the course is to introduce the student to the disciplines of Forensic Science with particular emphasis on forensic pathology – the practice of laboratory medicine as it applies to the law and legal issues.

280 Pathology Seminar. 1 Credit, A maximum of four credits only may be earned during the period of graduate work. Discussions of topics of general interest in pathology, including reports on current literature, are included.

291 General and Systemic Pathology 1. 4 Credits,
Four hours of lecture. Prerequisite: Permission. This course introduces students to the study and language of human disease its causes, mechanisms and effects on the body, by in-depth discussion of the general principles and reactions to different types of injury shared by most tissues.

291A General and Systemic Pathology 1 Laboratory. 2 Credits, Six hours of laboratory. Prerequisite: concurrent registration in Pathology 291. A laboratory course that enables the student to study gross organs and microscopic slides of tissues containing characteristic features of the disease processes studied in Pathology 291.

292 General and Systemic Pathology 2. 4 Credits,
Four hours of lecture. Prerequisite: Pathology 291 (General and Systemic Pathology I). This course introduces the student to the characteristic effects of common types of injury and of diseases on specific organ systems. The major disease processes are studied in terms of etiology, pathogenesis and lesions.

292A General and Systemic Pathology 2 Laboratory. 2 Credits, Six hours of laboratory. Prerequisite: Pathology 291a and concurrent registration in Pathology 292. A laboratory course that enables the student to study gross organs and microscopic slides of tissues containing the characteristic features of the disease processes studied in Pathology 292.

293 Clinical Pathology. 4 Credits,
Four hours of lecture. Prerequisite: Pathology 291 and 292 (General and Systemic Pathology 1 and 2). This course introduces the students to general concepts in clinical pathology and to the diagnostic and prognostic application of laboratory testing to patients with various diseases of metabolism and of the hematopoietic, genitourinary, gastrointestinal, cardiovascular, and endocrine systems studied in Pathology 292 and 292a.

293A Clinical Pathology Laboratory. 2 Credits,
Six hours of laboratory. Prerequisites: Pathology 291, 291a, 292, 292a and concurrent registration in Pathology 293. A laboratory course designed to enable students through laboratory exercises, case studies, and microscopic examination of blood and urine specimens to evaluate the significance of clinical laboratory test results in the management of disease.

294 Introduction to the Clinical Laboratory. 6 Credits,
24 hours laboratory/tutorials per week. An introduction to the principles and practice of the analytical instrumentation, methods and procedures used in the core clinical laboratory (clinical chemistry hematology, urinalysis), and their application to disease diagnosis and treatment. Theory will be presented in tutorials (2 hours/week) that complement the practical experience (22 hours/week) students gain in the laboratory. Included are study and experience in quality control and quality assurance procedures used in the laboratory, and administrative procedures used in the management of the laboratory.

295 Clinical Chemistry. 6 Credits,

24 hours laboratory/tutorials per week. Prerequisite: a degree in Medical Technology or successful completion of Pathology 294. Studies in specialist areas of clinical chemistry that includes analytical instrumentation and methods and the application of laboratory data for disease diagnosis and treatment. Areas of specialization include laboratory diagnosis of endocrine disorders, infectious diseases, cancer, immunological diseases, cardiovascular disease, fetal development, and nutritional disorders. During the course the student will rotate through the clinical laboratory sections in which the tests in their areas of specialization are performed. Included are study of the instrumentation and methods used to provide data for patient care, quality control and quality assurance procedures and exposure to the application of the data in clinical situations.

296 Toxicology. 2 Credits,

Two hours lecture/tutorial per week. Prerequisites: a degree in Medical Technology or successful completion of Pathology 294 and concurrent registration in Pathology 296a. A basic introduction to the general principles of toxicology and their application to clinical toxicology and pharmacology. Consideration of specific toxic and therapeutic agents will include discussions of composition of the agent, mode of action and pathologic sequelae.

296A Toxicology Laboratory. 4 Credits,

20 hours laboratory per week. Prerequisites: a degree in Medical Technology or successful completion of Pathology 294 and concurrent registration in Pathology 296. A laboratory course designed to provide the student with knowledge in the laboratory diagnosis of disorders caused by toxic and therapeutic agents, including the underlying principles of methodological approaches and consideration of the pathologic sequelae of specific agents.

300 Thesis Research. 1-6 Credits,

Registration by permission of the major professor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits,

Registration by permission of the major professor. Amount of credit must be stated at time of registration.

PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS M.S., PH.D.

The program is designed to provide graduate training through advanced courses, seminars, and laboratory research leading to the Doctor of Philosophy degree in Pharmacology. The Master of Science degree program is available for individuals possessing professional doctorates and desirous of research training or at the discretion of the staff, as a terminal degree. The length of time required to obtain the degree varies with the nature of the research program, but generally will be two to three years for the M.S. and four to five years for the Ph.D. Students enrolled in the doctoral program are required to take introductory graduate courses in biochemistry, physiology, biometry, radioisotope use, principles of pharmacology, and general pharmacology. Other courses may also be required depending upon the student's background and interests. In addition to the required courses, students are also required to participate in the departmental teaching program. The area of thesis or dissertation research is chosen by the student in consultation with the faculty. Students are allowed to register for graduate courses only after consultation with, and approval by the course director.

Core Requirements

The Program for obtaining the Ph.D. can be tailored to the requirement of each individual student, but the core requirements for all students are:

201 Biochemistry -----	5 credits
221 Biometry -----	3 credits
205 Basic Physiology -----	6 credits
195 General Pharmacology -----	5 credits
251 Research in Pharmacology -----	Variable credits
252 Research in Pharmacology -----	Variable credits
205 Principles of Pharmacology -----	5 credits

PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS COURSE DESCRIPTIONS

195 General Pharmacology. 5 Credits,

Course consists of lectures, laboratory exercises, conferences, and demonstrations, leading to a broad general understanding of the effects of drugs.

202 History of Pharmacology. 2 Credits,

Two hours of faculty/student presentations and discussions on the history of pharmacology and experimental therapeutics, with an emphasis on classical experiments.

203 Methods in Pharmacology. 1-3 Credits, Hours and credit by arrangement. Course provides instruction in classical methods used in investigating the action of drugs.

204 Current Concepts in Pharmacology. 2 Credits,

Two hours of faculty/student presentations and discussions on recent advances in the field of pharmacology. All areas of pharmacological research will be included, with an emphasis on the implications of recent research findings.

205 Principles of Pharmacology. 5 Credits,

This course is designed to introduce basic concepts in pharmacology to beginning students. The course will introduce students to pharmacokinetic and pharmacodynamic principles, drug metabolism, and a comprehensive discourse on drug receptor interactions. The application of these principles to specific endeavors will also be discussed.

207 Drug Receptor Interactions. 2 Credits,

Lecture, discussion and laboratory exercise related to drug receptor theory.

211 Renal Pharmacology. 2 Credits,

Lecture, discussion and laboratory exercises covering diuretics and factors affecting renal blood flow and electrolyte excretion.

221-224 Advanced Topics in Pharmacology. 1-4 Credits, Hours and credits as well as lecture and laboratory to be arranged depending upon the special topic. This course is designed for advanced studies of special groups of drugs.

225 Sensory Pharmacology. 2 Credits,

Lecture and discussion of drugs acting on the neural pathways involved in perception of sensory information. Drugs used in therapeutics, diagnoses and research will be included. A paper written on a subject involving a sensory system(s) and a drug/drug class or related topic is required for successful completion of the course. Summer Semester.

231 Drug Abuse. 3 Credits, This course is designed to provide the student with a basic understanding of behavioral and pharmacological principles underlying various problems of drug abuse. The course will expose the student to both basic science and clinical issues as they relate to drug abuse and dependence.

232 Autonomic Pharmacology. 2-3 Credits

Lecture, discussion and laboratory exercises designed to provide the student with the basics of peripheral autonomic functions and their regulation by CNS mechanisms. Course will also cover advanced mechanisms including newer receptor sub-types and co-transmitters.

233 Neuropharmacology. 2-3 Credits, Lectures and discussions will be on chemical transmitters in the central nervous system with special emphasis on drug modifications of transmitter action and neuronal function.

234 Psychopharmacology. 3 Credits,

Lecture and laboratory designed to provide the student with an understanding of the effects of drugs on behavior. Special emphasis is given to pharmacological methods useful in the elucidation of normal and abnormal behaviors.

236 Gastrointestinal Pharmacology. 2 Credits,

Lecture and reading assignments designed to provide students with a basic understanding of drugs affecting selected aspects of gastrointestinal function through central nervous system and peripheral mechanisms.

237 Biochemical Pharmacology. 2 Credits,

Lecture and discussion designed to provide the student with the basics of drug metabolism and the use of biochemical techniques in pharmacology.

238 Cardiovascular Pharmacology. 2-3 Credits,

The study of drugs used to treat cardiovascular disorders with the primary emphasis on their fundamental mechanisms of action.

240 Behavioral Pharmacology. 3 Credits

Basic principles of the experimental analysis of behavior, including operant and classical conditioning are discussed. The utility of using scheduled controlled behavior to investigate drug effects is the primary focus of the course. Behavioral mechanisms of drug action are discussed within the context of a variety of environmental situations.

251-252; 253-254 Research in Pharmacology.

Amount of credit to be stated at the time of registration. This course offers an in-depth experience in research development, design, methodology and implementation. Students will undertake specific projects of limited scope and develop their findings under the guidance and direction of faculty preceptors.

280 Advanced Topics in Cell Signaling and Integrated Pharmacological Science. 3 Credit Hours, The objective of this course is to provide a forum for discussing emerging topics in the field of cell signaling in the context of integrated experimental approaches that include model organisms, human disease and molecular therapeutics. Students will be introduced to significant discoveries and encouraged to develop the necessary analytical skills to identify important questions and define experiments to determine their answers. This course is intended for advanced graduate students and postgraduate students and will be coordinated with Special Seminar Series organized through the Department

298-299 Seminar. 1 Credit.

300 Thesis Research. Variable Credits, (only 6 hours may be used for credit toward the master's degree). Registration by permission of the major professor. Number of credits must be stated at time of registration.

400 Dissertation Research. 1-9 Credits, Registration by permission of major professor. Number of credits must be stated at time of registration.

PHYSIOLOGY M.S., PH.D.

The graduate program leading to the Ph.D. in Physiology is designed to provide advanced education and training for a career in biomedical research and/or teaching in a university, research institution or industry. The length of time required to obtain the Ph.D. generally is four to five years. The program is flexible and designed to meet the needs and interests of the individual student. During the first year, most of the student's time is devoted to basic course work, including some medical courses. The student also is expected to examine current research programs in the Department and to select an area in which he or she will work. Dissertation research should be under way early in the second year before the student has completed formal course requirements. Beginning in the second year, all students participate in the teaching programs of the department to gain the skills important for future academic positions. The second year and beyond include advanced courses consistent with the student's training and needs, with at least 12 hours in one or more minor disciplines. The student's research occupies an increasing amount of time as the course requirements are fulfilled. The M.S. degree program is designed to prepare the candidate for biomedical research positions in academic, clinical or industry settings or to continue in graduate education. The time required to complete the M.S. program is generally two to three years. Qualified students will be accepted for graduate courses in physiology only after consultation with and approval by the Graduate Faculty of the Department.

Core Requirements

The program for obtaining the Ph.D. can be tailored to the requirements of each individual student, but the core requirements for all students are:

205, 206, 207 Physiology ----- 10 credits
217 Physiology ----- 2 credits
298, 299 Seminar All semesters of enrollment

PHYSIOLOGY COURSE DESCRIPTIONS

201-202; 203-204 Research in Physiology. 1-9 Credits, A research course designed to acquaint new graduate students with a research laboratory. This represents research credit before the qualifying process.

205 Basic Physiology. Lecture 6 Credits, Function of tissues, organs and organ systems; mechanisms of control and integration of the various functions. An introduction to the pathophysiology of some diseases will be included.

206 Basic Physiology Laboratory. 3 Credits, Laboratory experiments that emphasize precision in observation, analysis and interpretation of data. The topics are correlated with Basic Physiology Lectures (Physiology 205). Registration in Physiology 205 is required for registration in Physiology 206.

207 Basic Physiology Discussion. 1 Credits, Additional discussion, enrichment lectures, special assignments and additional examinations designed to expand coverage of the topics presented in Physiology 205 and Physiology 206. Registration in Physiology 205, Physiology 206 and Physiology 207 is required for Physiology majors.

208 Methods in Physiology. 2-5 Credits, Primarily a laboratory course, designed to acquaint the student with the major research topics under investigation within the Department and the methods, apparatus and literature employed in their study. The student actively participates in the performance of experiments and the analysis and interpretation of data, in rotations through several laboratories investigating problems in such areas as: alcohol and HIV immunomodulation; pulmonary host defense; lung injury and transplant; autoimmune diseases; cardiovascular physiology and pathophysiology; lipid and lipoprotein metabolism and atherosclerosis; ischemia/reperfusion injury of heart; hemorrhagic shock; exercise; physiologic functions of nitric oxide, free radicals, cytokines and chemokines; obesity and diabetes; neonatal developmental biology; cellular signaling, subcellular trafficking and metabolism; and computer simulation of physiologic processes.

209 Methods in Clinical Physiology. 4 Credits, A lecture laboratory course designed to familiarize the student with current clinical procedures and methodologies used to assess cardiovascular, pulmonary, neurologic, endocrine, and renal function in health and disease. The course is intended to provide students with a survey of physiologic tests that are not usually discussed in an introductory methods course in physiology.

212 Cardiovascular Physiology. 3 Credits, This course covers normal function and pathophysiology of the heart and circulation. Emphasis will be placed on using the literature to gain a greater depth of understanding of cardiovascular function. Students will write a small grant proposal as part of the course requirements.

215 Neurophysiology. 3 Credits, Advanced study of the functions of the central nervous system with special emphasis on the various research techniques used.

216 Endocrinology. 3 Credits, The topics presented include endocrine control systems, and hormone secretions and their mechanism of action at the physiologic, cellular and molecular levels. (Conducted jointly with the faculty in biochemistry; this is the same course as Biochemistry 216 and may be used toward a major in either Department.)

217 History and Philosophy of Science. 2 Credits, The history, methodologies and philosophy of science are considered in a study discussion course.

219 Auditory Physiology. 3 Credits, Lecture and laboratory experiments on the mechanics, physics, psychophysics, and physiology of hearing. Classic and current findings on the middle ear, cochlea and auditory pathways will be presented. Students will gain experience in measuring various bioelectric phenomena which correlate with auditory system function.

250 Scientific Writing for Graduate Students. 2 Credits, Two hours of lecture discussion per week. Topics covered include grammar, usage, and writing style; writing and submitting articles to scientific journals; writing research proposals, grant applications, dissertations, abstracts and test questions; and preparing curriculum vitae. Students must contribute portions of their ongoing writing projects for use in class discussions.

251 Molecular Structure and Function of the Cell. 3 Credits, The course is intended to explore the central role of the cell in modern biology. An integrative approach will be used beginning with historical precedents in anatomy and incorporating knowledge gained as the tools of biochemistry, electron microscopy, immunology and molecular genetics are focused upon cellular structure and operation. (Conducted jointly with the Departments of Anatomy and Biochemistry; this is the same course as Anatomy 251 and Biochemistry 251 and may be used toward a major in either Department).

280-289 Special Topics in Physiology. 1-4 Credits, for each course. Credits, hours, and lecture/laboratory time distribution to be independently arranged for each course as appropriate. An opportunity to explore, in an organized format and under supervision, specialized areas or specific subjects not adequately covered in other scheduled courses. By permission of the Head of the Department of Physiology only.

298-299 Seminar. 1 Credits, A maximum of two credits towards the M.S. or four credits towards the Ph.D. may be earned.

300 Thesis Research. 1-6 Credits, Amount of credit to be stated at time of registration.

400 Dissertation Research. 1-9 Credits, Amount of credit to be stated at time of registration.

MASTER OF PUBLIC HEALTH DEGREE PROGRAM

The Master of Public Health (MPH) Degree is awarded by the LSU Health Sciences Center School of Graduate Studies in New Orleans. The Department of Public Health and Preventive Medicine at LSU Health Sciences Center School of Medicine in New Orleans provides academic and administrative direction for the Master of Public Health Degree Program.

Partnership

A partnership with the University of New Orleans School of Business Administration provides MPH students access to elective administrative courses in the MPH curriculum.

Eligibility

The MPH Program is open only to students concurrently pursuing another LSUHSC New Orleans graduate degree or to LSUHSC New Orleans medical residents. Students who pursue the MPH as a companion degree pay tuition only to their primary degree program (e.g., M.D., D.D.S., Ph.D., M.S., and M.S.N.) Medical residents are required to pay tuition for MPH courses.

Medical students generally begin taking MPH courses in the second semester of their medical studies. These students may apply for admission into the MPH Program in a subsequent semester. Upon acceptance to medical school, however, students may apply for early admission to the MPH Program in order to complete a summer of MPH course work before their fall entry into medical school. These students are required to pay tuition for summer courses.

Equal Opportunity

The LSU System assures equal opportunity to all qualified persons without regard to race, color, religion, sex, sexual orientation, national origin, age, disability, marital status or veteran's status in admission to, participation in, or employment in its programs.

CURRICULUM DESCRIPTION

The MPH has a 38-hour curriculum that includes five 3-credit core courses, 16 elective credits, the 1-credit practice experience and 6 credits for the capstone/masters research thesis.

Practice Experience and Thesis Capstone

The practice experience, pursued after completion of core MPH courses, involves a preceptor-guided activity in public health or health administration. The student employs didactic knowledge acquired from course work to perform responsible duties during this experience. While one practice experience, earning a 1-hour independent study credit, is required of all MPH students, a second fieldwork placement may also be pursued for a second 1-hour independent study credit if so desired.

The capstone/thesis may originate from a separate research activity in public health or health administration or it may be an extension of the student's practice experience. In either case, the student selects a committee of three School of Graduate Studies' faculty members to review and approve the topic, provide research guidance, and approve the final thesis paper and presentation. Students complete the capstone toward the end of their MPH studies in order to utilize the public health knowledge they have gained in the program.

Required Courses

Capstone/Research -----	6 credits
Culture and Behavior in Health Care Settings -----	3 credits
Environmental Health and Medicine -----	3 credits
Health Services Administration and Management -----	3 credits
Biostatistics I -----	3 credits
Practice Experience -----	1 credit
Principles of Epidemiology -----	3 credits

Students may pursue the Basic MPH degree by combining elective courses from both of the following concentrations. Students may also choose to concentrate their MPH studies in either Public Health and Preventive Medicine or Administration and Management. Each of the following courses carries 3 credits.

Elective Courses by Concentration

Public Health and Preventive Medicine Concentration

- Biostatistics II
- Behavioral Science Theories for Public Health Practice
- Clinical Preventive Medicine
- Comprehensive Pain Management
- Design of Experiments
- Intermediate Epidemiology
- Introduction to Measurement and Evaluation
- Occupational Health and Medicine

Administration and Management Concentration

- Accounting for Health Care Managers
- Business Topics in Health Care
- Health Care Economics
- Health Care Financial Management
- Health Care Management
- Health Care Marketing
- Health Care Policy
- Health Law and Medical Ethics
- Human Resource Management in Health Care Settings
- Strategic Issues in Health Care Settings
- Survey of Decision Making Tools

MASTER OF PUBLIC HEALTH DEGREE COURSE DESCRIPTIONS

210 Principles of Epidemiology. 3 Credits, The course emphasizes the epidemiological approach to the review of medical literature, health care policy, management, communicable disease control and issues of disease causation.

211 Intermediate Epidemiology. 3 Credits, The purpose of this course is to provide students with the skills specialized skills required to conduct epidemiologic research. Selected topics covered in lectures and problems set include: measures of disease frequency and adjustment, study design, confounding and interaction, sources of bias and data analysis techniques.
Prerequisites: INT 221, MPH 210.

212 Behavioral Science Theories for Public Health Practice. 3 Credits, This course is designed to study health behavioral theories relevant to public health practice. In order to maintain effective public health initiatives at a community level, it is essential that practitioners appreciate the target populations' varied health patterns and behaviors.

220 Clinical Preventive Medicine. 3 Credits, The course introduces core concepts such as population health, health communication and education, immunization and screening programs, as well as investigation of outbreaks, behavioral factors affecting health, recognition and management of chronic diseases, control of communicable diseases, violence and violent injury prevention. The course presents a prospective approach to the management of individual patients and populations of patients. Prerequisites: Enrollment in a graduate health profession curriculum and MPH 238.

238 Environmental Health and Medicine. 3 Credits, The course offers perspectives in environmental health and medicine. Topics include air, surface and ground water contamination, radiation, chemical and physical hazards, food safety, vector control, envenomation and environmental injury prevention, as well as the governmental regulations that control these contaminants.

239 Occupational Health and Medicine. 3 Credits, This course introduces students to the core disciplines of occupational health and industrial medicine, including: industrial hygiene, toxicology, ergonomics and the design of safe workspace.

248 Culture and Behavior in Health Care Settings. 3 Credits, The focus of the course is upon individual and small group behavior and communication among employers, employees, hospitals, clinics, academic medical centers, insurance companies, HMOs and PPOs. The topics addressed in classes pertain to issues of management within the changing health care market. The UNO School of Business BA 6012 course may be substituted for this course.

258 Health Law and Medical Ethics. 3 Credits, A comprehensive course that addresses principles of health law and medical ethics, the course covers basic ethical principles and theories together with federal and state laws that regulate the practice of medicine and professional liability.

268 Health Services Administration and Management. 3 Credits, The course is designed to study the management of organizations that deliver health services. It examines management functions concepts and principles as well as the manager's role within the new and ever changing health care delivery arena which includes managed care organizations, multi-organizational systems, home health agencies, birth centers and hospices. In addition to covering the principles of management, some of the other subjects included are: strategic planning, problem solving, continuous quality improvement, control and human resources management. The UNO School of Business BA 6010 course may be substituted for this course.

288 Health Care Policy. 3 Credits, This course covers the formation, implementation and evaluation of health care policy and its impact on the delivery of health services. The purpose of the course is to enable the student to more effectively participate in health care related policy and political deliberations.

289 Practice Experience (Special Topics) 1 Credit, The Practice Experience is a fieldwork project or activity that immerses the student in one or more aspects of public health operations under the guidance of a preceptor for 30 or more hours. One fieldwork experience is required; a second experience may be pursued in another semester for an additional credit of independent study.

300 Research/Capstone. 6 Credits, Subject matter of the thesis must include elements of at least three of the five core disciplines of public health. The student must complete a research project, developing a research question or hypothesis, applying skills and knowledge acquired through the student's course of study to write an original thesis suitable for submission to a peer-reviewed journal.

Master of Public Health Degree Other School of Graduate Studies Programs Course Descriptions

INT 221 Biostatistics I. 3 Credits, The course presents the statistical background to operate at least one major statistical software program and to support the issues addressed in Principles of Epidemiology. Topics include hypothesis formation and testing, estimation, t-test, confidence intervals, analysis of variance, linear regression analysis, correlation and chi-square analysis of categorical data.

INT 222 Biostatistics II. 3 Credits, This course is designed to be a continuation of Biostatistics I. Topics include multiple regression and other forms of multivariate statistics. Additional topics include factor analysis, profile analysis, analysis of covariance, concepts of confounding, interaction and multicollinearity. Prerequisites: INT 221.

BIOM/PH&PM 242 Design of Experiments. 3 Credits, An introduction to the principle of experimental design used in clinical trials and other experimental and quasi-experimental investigation. Topics include randomized designs, controlled designs, factorial designs, Latin squares, crossover designs, and other miscellaneous experimental designs. Prerequisites: INT 221.

BIOM/PH&PM 245 Introduction to Measurement and Evaluation. 3 Credits, Topics in this course include theories of measurement and common scaling methods, evidence based medicine, meta-analysis, qualitative methods, building evaluation into program design and the use of planning and evaluation in a continuous cycle. Decision-making techniques such as decision trees, cost-effectiveness and cost benefit analysis are also studied.

NEURO 420 Comprehensive Pain Management. 3 Credits, This course is an in-depth exploration of the mechanisms, assessment and management of human pain from a population-based, disease management perspective. Topics include the under-treatment of pain, analgesic dependency and addiction, cancer and geriatric pain.

Master of Public Health Degree / University of New Orleans Course Descriptions

The following courses are taught as part of the LSUHSC MPH Program Partnership with the University of New Orleans and require cross-registration at the UNO School of Business.

ACCT 6131 Accounting for Health Care Managers. 3 Credits, The course presents an analysis of major issues that distinguish accounting in the health care sector from other industries.

BA 6011 Human Resource Management in Health Care Settings. 3 Credits, This course is a broad study of the theories, techniques, and legal environment pertaining to modern personnel management in health care settings.

BA 6012 Culture and Behavior in Health Care Settings. 3 Credits, The focus of the course is upon individual and small group behavior and communication among employers, employees, hospitals, clinics, academic medical centers, insurance companies, HMOs and PPOs. The topics addressed in classes pertain to issues of management within the changing health care market. This course may be substituted for MPH/PH&PM 248.

BA 6013 Strategic Issues in Health Care Organizations. 3 Credits, The course is a survey of strategic management and situational analysis.

BA 6014 Business Topics in Health Care. 3 Credits, This course is a survey of various topics in accounting, finance and marketing relevant to students who do not have a business background.

BA 6780 Survey of Decision Making Tools. 3 Credits, This course is a survey of decision making tools for business managers and students. Emphasis is on applying basic analytical quantitative and qualitative tools in the decision making process.

ECON 4250 Health Care Economics. 3 Credits, Students analyze major issues that distinguish economic theories in the health care sector from other industries

FIN 6350 Health Care Financial Management. 3 Credits, This course covers traditional finance topics tailored to the specifics of the health care environment.

BA 6010 Health Care Management. 3 Credits, This course focuses on organizational development, strategic planning, accreditation and licensing, policy development, negotiation, leadership and the political process.

MKT 4536 Health Care Marketing. 3 Credits, The course presents a survey of the concepts, principles, and methods of marketing in a diverse health care environment.

For More Information Contact:

LSU Health Sciences Center
School of Medicine in New Orleans
Department of Public Health and Preventive Medicine
1600 Canal Street, Suite 800
New Orleans, LA 70112
(504) 599 - 1299

**MASTER OF SCIENCE DEGREE PROGRAM
LSU Health Sciences Center School of
Dentistry and the LSU Health Sciences
Center School of Graduate Studies in New
Orleans**

A Master of Science Degree in collaboration with LSU School of Dentistry is flexible and designed to meet the needs of individual students. Thesis research can be done in any basic science or clinical science Department participating in the program. The thesis committee will be comprised of five graduate faculty, at least two will be from the participating MS degree program.

Although this program will require dual enrollment in the School of Dentistry and the School of Graduate Studies, students will pay tuition to the School of Dentistry. Prospective students must first apply to and be accepted by the School of Dentistry. Students should state their desire to enter the M.S./Advanced Dental Education Program, preferably at the time of application, but no later than the end of the Fall semester, first year.

In addition to the requirements for entering the Advanced Dental Education Program, the criteria for admission to the Master of Science Degree Program for the School of Graduate Studies must be met. In lieu of the baccalaureate degree requirement, students must have earned a D.D.S. or D.M.D. degree, or equivalent, from an accredited dental program. A minimum of two years of full-time study will generally be required for completing course work and thesis requirements for this collaborative MS/Advanced Dental Education Program.

The Program for obtaining the M.S. can be tailored to the requirement of each individual student. Curriculum design and course selection must be approved by the student's committee using the following guidelines. The minimum requirement is 33 semester hours of graduate work to include:

Advanced Dental Core Course Requirements -----	9 credits
Basic Science Courses Minimum Requirements -----	9 credits
Advanced Dental Education Specialty Courses Minimum Requirements -----	9 credits
Thesis Research Requirements -----	6 credits
Minimum Total -----	33 credits

**MASTER OF SCIENCE IN ORAL BIOLOGY
LSU Health Sciences Center School of
Dentistry and the LSU Health Sciences
Center School of Graduate Studies in New
Orleans**

This program allows students already enrolled in an advanced dental education program as well as individuals who have a specialized interest in dentistry or the allied dental sciences to earn the degree, Master of Science in Oral Biology. This program is offered through the School of Graduate Studies and administered by the School of Dentistry and the Center of Excellence in Oral and Craniofacial Biology.

The Master of Science Program in Oral Biology is an option for students with superior academic records and research potential. The criteria for admission to the School of Graduate Studies must be met. A minimum score of 1,000 on the Graduate Record Examination (combined verbal and quantitative) is required. Students must have earned a Bachelor of Science degree, D.D.S. or D.M.D. degree, or equivalent, from an accredited program.

The program can be tailored to the requirement of individual students. The thesis committee will be comprised of three graduate faculty of the Center of Excellence in Oral and Craniofacial Biology, and at least one must be from a Basic Science department. Curriculum design and course selection must be approved by the student's committee using the following guidelines. The minimum requirement is 33 semester hours of graduate work to include:

Advanced Dental Core Course Requirements -----	9 credits
Basic Science Courses Minimum Requirements -----	9 credits
Advanced Dental Education Specialty Courses Minimum Requirements -----	9 credits
Thesis Research Requirements -----	6 credits
Minimum Total -----	33 credits

**MASTER OF SCIENCE DEGREE PROGRAM
ADVANCED DENTAL CORE COURSE
REQUIREMENTS AND DESCRIPTIONS**

ANAT 255 Advanced Head and Neck Anatomy. 3 Credits, This course is designed as an advanced course in head and neck anatomy and includes segments on basic gross anatomy, neuro-anatomy and neuro-physiology. Special emphasis on functional considerations and clinical correlations is given in the course. (ANAT 255 is equivalent to ANAT 5407 - LSUSD Adv. Ed.)

BIOM 221 Statistical Methods in Health Sciences. 3 Credits, This course is designed to present statistical techniques for analysis of dental data. It prepares the advanced education student for: analyzing research results; presenting analyses to an audience; and understanding of analyses that appear in dental literature. (This course is equivalent to BIOM 5419 - LSUSD Adv. Ed.)

ODIAG 5509 Research Methodology. 1 Credits, This course is designed to enhance the advanced education dental student's comprehension of the research process from initiation of a research project to presentation of findings. Traditional as well as innovative approaches to oral health research are presented.

OPATH 5600 Advanced Oral Biophysiology. 2 Credits, The objective of this course is to provide the student with a contemporary view of cell biology and relate this to developmental, structural, functional, and pathologic events associated with the craniofacial complex.

**MASTER OF SCIENCE DEGREE PROGRAM
BASIC SCIENCE COURSE REQUIREMENTS
AND DESCRIPTIONS**

Basic Science Collaborative Program

All students are required to successfully complete a minimum of 9 credit hours from an appropriate M.S. Program in the School of Graduate Studies. The student, under the direction of his/her committee, will select those courses from the curriculum of the collaborative Basic Science department that will facilitate the student's research and academic interests and needs.

Oral Biology

All students are required to complete a minimum of 9 credit hours from the Basic Science departments in the School of Graduate Studies. The courses may be from only one or from several departments. The student, under the direction of his/her committee, will select those basic science courses that will facilitate the student's research and academic interests and needs.

MASTER OF SCIENCE DEGREE PROGRAM ADVANCED DENTAL EDUCATION SPECIALTY COURSE REQUIREMENTS AND DESCRIPTIONS

All students are required to successfully complete a minimum of 9 credit hours from the following:

ENDO 5407 Pulpal and Periodontal Biology. 2 Credits, This course provides the students the experience of reviewing, consolidating, and enhancing their knowledge of the biology and pathology of the pulp and periodontium, and of treatment materials and methods in order to allow precise and accurate diagnosis and appropriate treatment of disease of these tissues.

PROS 5505 TMJ Dysfunction, Occlusion, and Facial Pain. 2 Credits, Advanced instruction is provided in the differential diagnosis of pain and dysfunction, with an awareness of the available methods for management of these disorders. Emphasis is placed on the precautions that should be taken in any dental specialty practice when caring for patients suffering from temporomandibular disorders. Special emphasis is placed on the masticatory system as similar to other musculoskeletal systems.

MICRO 241 Microbiology and Oral Disease. 1 Credit, This course provides a review of fundamentals and survey of current literature in oral microbiology. Topics include: contemporary methods in oral microbiology; oral microbial ecology; microbiology of dental plaque; microbiology of caries and periodontal diseases; microbiology of endodontic and periapical infections; antibiotics; viruses of oral importance. Lectures, term paper, and student presentations are included.

MICRO 242 Advanced Dental Immunology. 1 Credit, This course is designed as an advanced course in the immunology of oral disease with special reference to the biology, in both health and disease, of the oral cavity. Host microbial interactions important in caries and periodontal diseases are examined in detail. Experiments in immunology are designed to illustrate basic principles of immunobiology.

ODIAG 5507 Advanced Radiology. 1 Credit, This course is designed to advance the student's understanding of the clinical and research aspects of dental radiology. Topics include: Image formation, localization of foreign bodies in jaws; differential diagnosis; salivary gland disease; sialography.

ODIAG 5407 Oral Medicine and Clinical Diagnosis. 2 Credits, This course is intended to expand the advanced education dental student's understanding of current concepts in Oral Medicine and Clinical Diagnosis. Special emphasis is given to specific areas of disease which might significantly influence treatment modalities by dental specialists. The course also provides a current overview of diagnostic laboratory procedures, their interpretation, and appropriate utilization.

OPATH 5100. Differential Diagnosis of Oral Lesions. 2 Credits, The purpose of this course is to educate the advanced education dental student in the methodology of diagnosing oral diseases. Each session is organized around a clinicopathologic conference format during which students are presented with selected oral pathology cases via projected slides and asked to derive a differential diagnosis.

OPATH 5501 Pediatric Oral Pathology. 2 Credits, The purpose of this course is to educate the advanced education dental students concerning diseases which may affect the child or adolescent patient. Emphasis is placed on oral and systemic diseases occurring in the pediatric population, focusing on systemic diseases with oral manifestations and of oral diseases with systemic manifestations.

PHARM 5400 Advanced Dental Pharmacology. 1 Credit, This course provides the student with advanced instruction in dental pharmacology. Recent advances in pharmacologic agents used in dentistry, functional considerations, and clinical correlations are emphasized.

Selected Topics in Dentistry. Topic and credit arranged by Department and declared at time of enrollment. Course number assigned by Department.

Thesis Research. 1-6 Credits, Registration by consent and permission of the major professor. Amount of credit to be stated at the time of registration. Course number assigned by Department.

FACULTY ROSTER

EMERITI

ALLISON, FRED, JR. - M.D., Vanderbilt University, 1946
Emeritus Professor of Medicine

BARKER, LOUIS A. - Ph.D., Tulane University, 1968
Emeritus Professor of Pharmacology and Experimental Therapeutics

BEELEER, MYRTON F. - M.D., New York Medical College, 1949
Emeritus Professor of Pathology

CARVEL, ROSA I. - D.D.S., Loyola University (Louisiana), 1967
Emeritus Professor of Oral Pathology

COULSON, ROLAND A. - Ph.D., University of London (England), 1944
Emeritus Professor of Biochemistry and Molecular Biology

DASCOMB, HARRY E. - M.D., University of Rochester, 1943
Emeritus Professor of Medicine

DAVIS, GEORGE D. - Ph.D., Yale University, 1951
Emeritus Professor of Physiology

DESSAUER, HERBERT C. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1952
Emeritus Professor of Biochemistry and Molecular Biology

DYER, ROBERT F. - Ph.D., University of Pittsburgh, 1966
Emeritus Professor of Cell Biology and Anatomy

GUZMAN, MIGUEL A. - Ph.D., North Carolina State University, 1961
Emeritus Professor of Biometry and Genetics and Pathology

HARRIS, A. SIDNEY - Ph.D., Washington University, 1934
Emeritus Professor of Physiology

HERNANDEZ, THOMAS - Ph.D., University of Iowa, 1942
Emeritus Professor of Pharmacology and Experimental Therapeutics

KASTEN, FREDERICK - Ph.D., University of Texas, 1954
Emeritus Professor of Cell Biology and Anatomy

KOKATNUR, MOHAN G., PH.D., University of Illinois, 1958
Professor of Pathology

MALCOM, GRAY T. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1978
Professor of Pathology

MAYO, JOHN A. - Ph.D., University of New Mexico, 1970
Emeritus Professor of Microbiology, Immunology, and Parasitology

MILLER, JOSEPH H. - Ph.D., New York University, 1953
Emeritus Professor of Microbiology, Immunology, and Parasitology

MORGAN, LEE R., JR. - Ph.D., Tulane University, 1960
Emeritus Professor of Pharmacology and Experimental Therapeutics

NANCE, F. CARTER - M.D., University of Tennessee, 1959
Emeritus Professor of Physiology, and Surgery

NARAYANAN, CHANDRASEKARAPURANH - Ph.D., University of Kansas, 1963
Emeritus Professor of Cell Biology and Anatomy

TOTH, LOUIS A. - Ph.D., University of Rochester, 1936
Emeritus Professor of Physiology

WARREN, LIONEL G. - Sc.D., Johns Hopkins University, 1957
Emeritus Professor of Microbiology, Immunology, and Parasitology

WILSON, LAWRENCE A. - Ph.D.,
University of North Carolina at Chapel Hill, 1969
Emeritus Professor of Microbiology, Immunology and Parasitology

ZIMNY, MARILYN L. - Ph.D., Loyola University (Illinois), 1954
*Emeritus Professor of Cell Biology and Anatomy
Dean, and Vice Chancellor for Academic Affairs*

ASSOCIATE MEMBERSHIP

BARKEMEYER, BRIAN M. - M.D., Louisiana State University School of Medicine, 1987
Associate Professor of Pediatrics

BLACKWELL, TERRY - ED.D., University of Northern Colorado, 1980
Clinical Associate Professor of Rehabilitation Counseling

CORK, JOHN - PH.D., University of Leeds, 1980
Assistant Professor of Cell Biology and Anatomy

COULTER, W. ALAN - Ph.D., University of Texas, 1991
Assistant Professor of Interdisciplinary Human Studies

CROW, ROBERT E. - Ph.D., Utah State University, 1972
Professor of Interdisciplinary Human Studies

DALY, THERESA C. - Ph.D., Tulane University, 1995
Assistant Professor of Interdisciplinary Human Studies

DOLAN, JOHN - Rh.D., Southern Illinois University, 1983
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EASON, JANE - PH.D., University of Florida, 1996
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Assistant Professor of Communication and Disorders

FELDBAUM, CRAIG L. - Ph.D., Tulane University, 1979
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GOULD, HARRY - M.D., LSU Medical School, 1990
Associate Professor of Neurology

HARRISON, JAMES D. - D.D.S., St. Louis University, 1951
Professor of Prosthodontics

HUNT, JOHN P. - M.D., University of North Carolina, 1998
Assistant Professor of Surgery

LEIGH, JANET - M.D., University of Pennsylvania, 1991
Associate Professor of General Dentistry

MARIER, JOANNE, J.D., Tulane University, 1981
Associate Professor of Clinical Physical Therapy

MCCARTHY, HENRY - Ph.D., University of Kansas, 1977
Associate Professor of Rehabilitation Counseling

MANDAL, DIPTASRI - Ph.D., LSU Medical Center, 1992
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MOSELEY, KERA - Dr. P.H.; Tulane University, 1999
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PARISER, GINA - PH.D., University of Tennessee, 1989
Assistant Professor of Physical Therapy

PARKINS, CHARLES W. - M.D., University of Rochester Medical School, 1963
Professor of Otolaryngology

PELLETT, ANDREW - Ph.D., LSU Medical Center School of Graduate Studies, 1991
Associate Professor of Cardiopulmonary Science

RAIGRODSKI, ARIEL J., - DMD; Hebrew University and Hadassah School of Dental Medicine, 1991
Assistant Professor of Prosthodontics

SIMONSEN, NEAL R., - Ph.D., University of North Carolina - Chapel Hill, 1993
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SU, L JOSEPH - Ph.D., University of North Carolina at Chapel Hill, 1998
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TAYLOR, EVE - PH.D., Tulane University, 1984
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THOMPSON, HILLARY - Ph.D., Louisiana State University, Baton Rouge, 1986
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TURNER, ROBERT G. - Ph.D., University of Florida, 1975
Professor of Communication Disorders

VENUTI, JUDITH - Ph.D., State University of New York at Buffalo, 1985
Associate Professor of Microbiology

WANG, GUOSHUN - Ph.D., Peking University of China, 1992
Assistant Professor of Medicine and Genetics

WILSON, PHILIP G. - Ph.D., University of Illinois at Urbana-Champaign, 1991
Associate Professor of Interdisciplinary Human Studies

WINKLER, MARK M. - Ph.D., Northwestern University, 1991
Associate Professor of Operative Dentistry and Biomaterials

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AFFILIATE MEMBERSHIP

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BLATZ, Markus B., D.M.D., Ph.D., Albert Ludwigs University, Germany 1998
Assistant Professor of Prosthodontics

BREXLER, JAMES L. - MPA, North Carolina State University, Raleigh, 1980
Professor of Public Health and Preventive Medicine

CORRIVEAU, RODERICK - Ph.D., University of California at San Diego, 1994,
Assistant Professor of Cell Biology and Anatomy

CUI, YAN - Ph.D., University of Alberta, Canada, 1995
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ROBERTS, ELLIOTT, M.A., George Washington University, 1963
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ROSS, KAREN, Ph.D., LSU Medical Center,

AICHELMANN-REIDY, Mary Beth - D.D.S., SUNY at Suny Brook, 1987
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ALAM, JAWED - Ph.D., Purdue University, 1983
Associate Professor of Biochemistry and Molecular Biology

ALDRIDGE, KENNETH E. - Ph.D., University of Mississippi, 1974
Professor of Medicine, Obstetrics and Gynecology, and Pathology

ALLIEGRO, MARK C. - Ph.D., State University of New York, Buffalo, 1986

Associate Professor of Cell Biology and Anatomy

AMEDEE, ANGELA M., Ph.D., LSUHSC, 1992

Assistant professor of Microbiology, Immunology and Parasitology

BACKES, WAYNE L. - Ph.D., West Virginia University, 1979

Professor of Pharmacology and Experimental Therapeutics

BAGBY, GREGORY J. - Ph.D., Washington State University, 1976

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BARATTA, RICHARD V., Ph.D., Tulane University, 1989

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BAZAN, HAYDEE E. P. - Ph.D., Universidad Nacional del Sur (Argentina), 1975

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BEURMAN, ROGER W. - Ph.D., Florida State University, 1973

Professor of Anatomy, and Ophthalmology

BHATTACHARYYA, ASHIM K. - Ph.D., Calcutta University (India), 1965

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BOBBIN, RICHARD P. - Ph.D., Tulane University, 1969

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CAIRO, JIMMY M. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1986

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CARR, RONALD F. - D.D.S., Loyola University (Louisiana), 1964

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CHEN, CHU, Ph.D., Tulane University, 1993

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CHICHE, GERALD - D.D.S., University of Paris (France), 1977

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CLAYCOMB, WILLIAM C. - Ph.D., Indiana University, 1969

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De BENEDETTI, ARRIGO, Ph.D., SUNY, Albany, 1985

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EVANS, GERALD H. - D.D.S., LSU School of Dentistry, 1979

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FINGER, ISRAEL M. - B.D.S., University of Witwatersr and (Republic of South Africa), 1969

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FONTHAM, ELIZABETH T. - Dr. P.H., Tulane University, 1983

Department Head of Public Health and Preventive Medicine

FREISTADT, MARION S. - Ph.D., The Rockefeller University, 1985

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FROHLICH, EDWARD D. - M.D., University of Maryland, 1956

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GALLAHER, WILLIAM R. - Ph.D., Harvard University, 1971

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GARDINER, DIANA L. - Ph.D., University of Alabama, 1979

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GNARRA, JAMES. - Ph.D., University of Virginia, 1987

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Assistant Professor of Genetics
- GREEN, JEFFREY D. - Ph.D., State University of New York, 1981
Professor of Cell Biology and Anatomy
- GUIDO, WILLIAM - Ph.D., University of North Carolina, Greensboro, 1985
Associate Professor of Cell Biology and Anatomy and Neuroscience Center
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- HAPPEL, LEO T. JR. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1972
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- HAYCOCK, JOHN W. - Ph.D., University of California, 1975
Professor of Biochemistry and Molecular Biology
- HEMPE, JAMES - Ph.D., University of Missouri, 1987
Assistant Professor of Pediatrics
- HERBERT, JACK D. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1967
Associate Professor of Biochemistry and Molecular Biology
- HILL, JAMES M. - Ph.D., Baylor College of Medicine, 1971
Professor of Microbiology, Immunology and Parasitology; Ophthalmology; and Pharmacology and Experimental Therapeutics
- HOCHSTEDLER, J. L. - D.D.S., University of Tennessee, 1976
Assistant Professor of Prosthodontics
- HOOD, LINDA, Ph.D., University of Maryland, 1983
Associate Professor of Otorhinolaryngology
- HORNICK, CONRAD A. - Ph.D., University of Hawaii, 1980
Professor of Physiology and Pathology
- HOVLAND, ERIC J. - D.D.S., Baltimore College of Dental Surgery, Dental School University of Maryland
Dean, LSU School of Dentistry; Professor of Endodontics
- HUNT, JAY D. III - Ph.D., University of Tennessee, 1990
Associate Professor of Biochemistry and Molecular Biology
- JACOB, JEAN T., Ph.D., Tulane University, 1988
Associate Professor of Ophthalmology
- JAZWINSKI, STANISLAW. M. - Ph.D., Stanford University, 1975
Professor of Biochemistry and Molecular Biology
- JEANSONNE, BILLIE GAIL - D.D.S.; Loyola University (Louisiana), 1968
Associate Professor of Endodontics
- JOHNSTON, KENNETH H. - Ph.D., McMaster University (Canada), 1972
Professor of Microbiology, Immunology and Parasitology
- KHAN, IMTIAZ A., PH.D., B.H.U., India 1983
Professor of Microbiology
- KAPUSTA, DANIEL R. - Ph.D. L.S.U. Medical Center School of Graduate Studies, 1986
Professor of Pharmacology and Experimental Therapeutics
- KAUFMAN, HERBERT E. - M.D., Harvard University, 1956
Boyd Professor of Ophthalmology, and Pharmacology and Experimental Therapeutics
- KEATS, BRONYA - Ph.D., Australian National University (Australia), 1976
Professor of Biometry and Genetics, Neuroscience, Otorhinolaryngology and Communication and Pathology
- KENT, JOHN N. - D.D.S., University of Nebraska, 1963
Boyd Professor of Oral and Maxillofacial Surgery
- KIRKENDOL, PAUL L. - Ph.D., University of Tennessee, 1971
Associate Professor of Pharmacology and Experimental Therapeutics
- KISSINGER, PATRICIA – Ph.D., Tulane University School of Public Health and Tropical Medicine,
- KLYCE, STEPHEN D. - Ph.D., Yale University, 1971
Professor of Ophthalmology
- KOLLS, JAY E. – M.D., University of Maryland, 1981
Professor of Medicine and Pediatrics
- Koochekpour, Shahriar - Ph.D., King's College School of Medicine, University of London, 1995
Assistant Professor of Biochemistry and Molecular Biology
- KRATZ, KENNETH E. - Ph.D., Kansas State University, 1975
Professor of Cell Biology and Anatomy and Neuroscience Center
- LALLIER, THOMAS E. - Ph.D., University of California (Irvine), 1990
Assistant Professor of Cell Biology and Anatomy
- Stephen M. Lanier, Ph.D. - Ph.D., University of Tennessee Center for Health Sciences, 1982
Lederle Laboratories/David R. Bethune Professor of Pharmacology and Head of Department of Pharmacology and Experimental Therapeutics
- LAWRENCE, LOUANN - Dr. P.H., University of Texas School of Public Health, 1994
Associate Professor of Medical Technology
- LAYMAN, DON L. - Ph.D., George Washington University, 1970
Associate Professor of Cell Biology and Anatomy
- LEIERER, STEPHEN J. - Ph.D., Florida State University, 1993
Assistant Professor of Rehabilitation Counseling
- LEVINE, EDWARD - M.D., Chicago Medical School, 1985
Assistant Professor of Surgery
- LEVITZKY, MICHAEL G. - Ph.D., Albany Medical College, 1975
Professor of Physiology and Anesthesiology
- LILES, SAMUEL L. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1968
Associate Professor of Physiology and Neuroscience
- LINDBERG, IRIS - Ph.D., University of Wisconsin, 1980
Professor of Biochemistry and Molecular Biology
- LUFTIG, RONALD B. - Ph.D., University of Chicago, 196
Professor of Microbiology, Immunology, and Parasitology
- MAGEE, JEFFERY C. – Ph.D., Tulane University School of Medicine, 1992
Associate Professor of Cell Biology And Anatomy
- MALLOY, RANDOLPH - Ph.D., L.S.U. School of Graduate Studies of the Medicine, 1975
Clinical Assistant Professor of Cell Biology and Anatomy
- MARTIN, DAVID – M.D., Harvard Medical School, 1969
Chief, Section of Infectious Disease, Dept. of Medicine
- MARTINEZ, I. RICARDO, JR. - M.D., LSU School of Medicine in New Orleans, 1965
Ph.D., Boston University, 1971
Associate Professor of Cell Biology and Anatomy, and Dermatology, Part Time
- MC CLUGAGE, SAMUEL G. JR. - Ph.D., University of Cincinnati, 1970
Professor of Cell Biology and Anatomy
- MCCULLOCH, JOSEPH M. - Ph.D., University of New Orleans, 1981
Professor of Physical Therapy
- MC DONOUGH, KATHLEEN H. - Ph.D., University of Missouri, 1979
Professor of Physiology
- MENDEZ, ARTURO J. - D.D.S., National Autonomous University of Mexico (Mexico), 1974
Professor of Prosthodontics
- MENERAY, MICHELE A. - Ph.D., Colorado State University, 1979
Professor of Physiology and Neuroscience
- MERCANTE, DONALD E. - Ph.D., Virginia Polytechnic Institute, 1990
Associate Professor of Public Health and Preventive Medicine
- MILLER, HARVEY - Ph.D., Hahnemann Medical College, 1961
Professor of Physiology
- MILLINGTON, MICHAEL J. - Ph.D., University of Wisconsin, 1993
Assistant Professor of Rehabilitation Counseling
- MIZE, R. RANNEY - Ph.D., University of Chicago, 1975
Julius H. Mullins Professor, Head of the Department of Cell Biology and Anatomy, Ophthalmology and Neuroscience Center
- MOERSCHBAECHER, JOSEPH M., III - Ph.D., American University, 1976
Dean, School of Graduate Studies, Professor of Pharmacology and Experimental Therapeutics
- MOHAMED, SHAWKY E. - D.D.S., University of Iowa, 1970
Professor of Fixed Prosthodontics
- MOHANAKRISHNAN, PAREKKAT., - Ph.D., Indian Institute of Science, 1976
Assistant Professor of Radiology
- MOLINA, PATRICIA – M.D., PH.D.
Associate Professor of Physiology
- MOSES, RANDY L. - Ph.D., University of Texas, 1976
Professor of Cell Biology and Anatomy
- MUSSELMAN, ROBERT J. - D.D.S., Indiana University, 1964
Professor and Head of Pediatric Dentistry
- MUZYKA, BRIAN C. - D. M.D., Temple University, School of Dentistry, 1990
Assistant Professor of Oral Diagnosis/Medicine/Radiology

- NAKAMOTO, TETSUO - D.D.S., Nihon University (Japan), 1964
Ph.D. Massachusetts Institute of Technology, 1978
Professor of Physiology
- NELSON, STEVE - M.D., McGill University, 1978
Professor of Medicine and Physiology
- NEWMAN, WILLIAM P., III - M.D., LSU School of Medicine in New Orleans, 1967
Professor of Pathology and Medical Technology
- O'CALLAGHAN, RICHARD J. - Ph.D., University of Mississippi, 1970
Professor of Microbiology, Immunology, and Parasitology
- OESCHGER, MAX P. - Ph.D., Johns Hopkins University, 1964
Associate Professor of Microbiology, Immunology, and Parasitology
- PALKAMA, ARTO K., Ph.D., University of Helsinki, 1962
Research Professor of Ophthalmology
- PATEL, YOGESH C. - Ph.D., University of Georgia, 1972
Assistant Professor of Biometry and Genetics
- PAUL, DENNIS J. - Ph.D., University of British Columbia, 1988
Associate Professor of Pharmacology and Experimental Therapeutics
- PELIAS, MARY K. - Ph.D., Tulane University, 1970
J.D., Loyola University (Louisiana), 1989
Professor of Biometry and Genetics
- PELON, WILLIAM - Ph.D., Kansas State University, 1954
Professor of Microbiology, Immunology, and Parasitology
- PINCUS, SETH - M.D., New York University, 1973
Professor/Vice Chairman of Pediatrics and Professor of Microbiology
- PORCHE, DEMETRIUS - PH.D., LSU Health Sciences Center, New Orleans, 1995
Professor of Public Health and Preventive Medicine
- POWELL, THOMAS - Ph.D., Indiana University, 1989
Associate Professor of Communication Disorders
- PORTER, J. R. - Ph.D., LSU School of Graduate Studies of the Medical Center, 1973
Professor of Physiology, Medicine, Neuroscience and Pharmacology
- POTTER, B. J. - Ph.D., University of London, 1975.
Research Associate Professor of Physiology
- PRAKASH, OM - Ph.D., University of Poona (India), 1972
Adjunct Associate Professor of Microbiology, Immunology and Parasitology, and Biochemistry and Molecular Biology
- QUAYLE, ALISON J. - PH.D., University of Edinburgh Medical School, Scotland, 1988
Associate Professor of Microbiology, Immunology and Parasitology
- RAGAN, FRANCIS A., JR. - Ph.D., University of Alabama, 1977
Associate Professor of Pathology
- RAJ, MADHWA H. G. - Ph.D., Indian Institute of Science, India, 1969
Professor of Obstetrics and Gynecology and Biochemistry and Molecular Biology
- RAMSAY, ALISTAIR - Ph.D., University of Otago, New Zealand, 1985
Professor of Medicine and Gene Therapy
- RAO, JAYARMAN - M.B.B.S., University of Mysore (India), 1969
Professor of Neurology, Otorhinolaryngology and Biocommunication and Cell Biology and Anatomy
- REDDIX, RHODA - Ph.D., Indiana University, 1990
Assistant Professor of Pharmacology
- REID, DENNIS H. - Ph.D., Florida State University
Associate Professor of Interdisciplinary Human Studies
- REISER, JAKOB - Ph.D., University of Basel, 1976
Associate Professor of Medicine and Microbiology
- ROHEIM, PAUL S. - M.D., Medical College of Budapest (Hungary), 1951
Kai and Earl Rozas Professor of Physiology
Professor of Medicine and Pathology
- ROSKOSKI, ROBERT, JR. - M.D., University of Chicago, 1964
Ph.D., University of Chicago, 1968
Fred G. Brazda Professor of Biochemistry and Molecular Biology
- RUIZ, BERNARDO - M.D., Universidad del Valle School of Medicine (Columbia), 1983
Ph.D., LSU School of Graduate Studies of the Medical Center, New Orleans, 1995
Assistant Professor of Pathology
- SAMUELS, MONROE S. - M.D., LSU School of Medicine in New Orleans, 1950
Professor of Medical Technology, Medicine, and Pathology
- SARKAR, NIKHIL K. - Ph.D., Northwestern University, 1973
Professor of Biomaterials
- SARPHIE, THEODORE G. - Ph.D., University of Mississippi, 1972
Associate Professor of Cell Biology and Anatomy
- SCHEER, W. DOUGLAS - Ph.D., LSU School of Graduate Studies of the Medical Center, 1976
Professor of Pathology, Biometry and Genetics, and Medical Technology
- SCHNEIDER, BARBARA G. - Ph.D., University of Texas Health Science Center, San Antonio, 1989
Assistant Professor of Pathology
- SCHNEIDER, PAUL E. - D.D.S., Indiana University, 1968
Professor of Pediatric Dentistry
- SCOTT, DONALD K. - Ph.D., Saint Louis University School of Medicine, 1991
Assistant Professor of Biochemistry and Molecular Biology
- SCRIBNER, RICHARD - M.D., University of Southern California, Los Angeles, 1984
Assistant Professor of Public Health and Preventive Medicine
- SHEPHERD, RAYMOND E. - Ph.D., Washington State University., 1974
Associate Professor of Physiology
- SLOOP, CHARLES H. - Ph.D., Wake Forest University, 1974
Professor of Physiology
- SLOOP, GREGORY D. - M.D., LSU School of Medicine in New Orleans, 1989
Assistant Professor of Pathology
- SMITH, DIANE E. - Ph.D., University of Pennsylvania, 1968
Professor of Cell Biology and Anatomy and Neuroscience Center
- SNYDER, JOHN R. - Ph.D., University of Nebraska, 1982
Professor of Medical Technology and Dean, School of Allied Health Professions
- SNYDER, PATRICIA - Ph.D., University of New Orleans, 1992
Associate Professor of Occupational Therapy
- SOLOMONOW, MOSHE, - Ph.D., M.D. (hon), University of California - L.A., 1976
I. Cahen Professor of Orthopaedic Surgery, Physiology and Kinesiology
- SONGU-MIZE, EMEL - Ph.D., University of Pennsylvania, 1979
Professor of Pharmacology and Experimental Therapeutics
- SPENCE, H. ADELE - Ph.D., LSU School of Graduate Studies of the Medical Center, 1971
Zimmy Professor of Graduate Studies
Professor of Microbiology, Immunology and Parasitology
- SPRIGGS, LOUAINE - Ph.D., Tulane University, 1990,
Associate Professor of Cell Biology And Anatomy - Research
- STARY, HERBERT C. - M.D., Heidelberg University, 1958
Professor of Pathology
- STRONG, JACK P. - M.D., LSU School of Medicine in New Orleans, 1951
Boyd Professor of Pathology
- STROHMER, DOUGLAS C. - Ph.D., Michigan State University, 1979
Professor of Rehabilitation Counseling
- SVEC, FRANK - M.D., Case Western Reserve University, 1974
Ph.D., Case Western Reserve University, 1974
Professor of Medicine
- SWARTZ, WILLIAM J. - Ph.D., Loyola University (Illinois), 1971
Professor of Cell Biology and Anatomy
- THOMPSON, JAMES J. - Ph.D., University of Iowa, 1970
Professor of Microbiology, Immunology, and Parasitology
- THUNTHY, KAVAS H. - B.D.S., University of Bombay (India), 1969
Professor of Oral Diagnosis/Medicine/Radiology
Professor of Oral and Maxillofacial Radiology
- TRACY, RICHARD E. - M.D., University of Chicago, 1961
Ph.D., University of Chicago, 1961
Professor of Pathology
- TULLEY, RICHARD T. - Ph.D.,
LSU School of Graduate Studies of the Medical Center, 1979
Associate Professor of Pathology
- VARNER, KURT J. - Ph.D., Michigan State University, 1987
Professor of Pharmacology and Experimental Therapeutics
- VEDECKIS, WAYNE V. - Ph.D., Northwestern University, 1974
Professor of Biochemistry and Molecular Biology
- VENUTI, JUDITH - Ph.D. - The State University of New York at Buffalo, 1986,
Associate Professor of Cell Biology And Anatomy
- VIJAYAGOPAL, PARAKAT - Ph.D., University of Kerle (India), 1973

Associate Professor of Medicine and Cell Biology and Anatomy
 WEINBERG, ROGER - Ph.D., University of Texas, 1954
 Ph.D., University of Michigan, 1970
Professor of Biometry and Genetics
 WEIR, JIM C. D.D.S., - University of Tennessee, 1974
Professor of Oral Pathology
 WEYAND, THEODORE G. - Ph.D., University of Connecticut, 1983
Associate Professor of Cell Biology and Anatomy and Neuroscience Center

WHITWORTH, RICHARD H., JR. - Ph.D., West Virginia University, 1981
Associate Professor of Cell Biology and Anatomy
 WINSAUER, PETER J. - Ph.D., American University, 1989
Associate Professor of Pharmacology and Experimental Therapeutics
 WOLTERING, EUGENE, M.D., Ohio State University College of Medicine, 1975
James D. Rives, M.D., Professor of Surgery
 WONG, LAURENCE - Ph.D., McGill University (Canada), 1979
Research Professor of Physiology
 YUKNA, RAYMOND A. - D.M.D., Tufts University, 1968
Professor of Periodontics

RECAPITULATION OF FACULTY

Below are listed the nine New Orleans basic science Departments of the Health Sciences Center in which degrees may be earned through the School of Graduate Studies, and the respective graduate faculty with primary appointment of each, in alphabetical order by rank:

Biochemistry and Molecular Biology

PROFESSOR: Gross; Jain; Rhoads, Tatchell
 ASSOCIATE PROFESSOR: Aamodt; Davis; DeBenedetti; First; Meyers; Reed; Robinson; Smith; Williams; Witt
 ASSISTANT PROFESSOR: Koochekpour; Mathias
 RESEARCH PROFESSOR: Grimes

Biometry

PROFESSOR: Fisher
 ASSOCIATE PROFESSOR: Mercante; Thompson
 ASSISTANT PROFESSOR: Patel

Cell Biology and Anatomy

PROFESSOR: Beuerman; Erzurumlu, Gasser; Green; Lo; Mize; Moses; Smith; Swartz;
 ASSOCIATE PROFESSOR: Alliegro; Cserjesi; Guido; Layman; Magee; Sarphie; Spriggs; Venuti; Weyand; Whitworth
 ASSISTANT PROFESSOR: Bruck; Cork; Corriveau; Lallier; Malloy
 INSTRUCTOR: Landry

Genetics

PROFESSOR: Cohen; Fisher; Keats; Kolls; Pelias; Ramsay; Scheer
 ASSOCIATE PROFESSOR: Mercante; Reiser; Schwarzenberger
 ASSISTANT PROFESSOR: Cui; Grabczyk; Mandal; Park; Wang

Microbiology, Immunology, and Parasitology

PROFESSOR: Cutler; Fidel, Jr.; Gallaher; Johnston; Khan; Luftig; O Callaghan; Pelon;
 Pincus; Spence; Thompson
 ASSOCIATE PROFESSOR: Freistadt; Oeschger, Quayle; Reiser
 ASSISTANT PROFESSOR: Amedee;

Neuroscience

PROFESSOR: Bazan, H.; Bazan, N.; Berlin, Beuerman, Bobbin, Deining; Erzurumlu; Haycock; Hill; Hornby; Jazwinski; Kapusta; Kaufman; Keats; Kratz; Lindberg; Luftig; Mize; Moerschbaecher; Porter; Rao; Roskoski; Smith; Updyke; Varner; Webster
 ASSOCIATE PROFESSOR: Alliegro; Carr; Freistadt; Guido; Happel; Magee; Liles; Paul; Weill; Weyand
 ASSISTANT PROFESSOR: Anand; Corriveau; Reddix; Thompson; Su

Pathology

PROFESSOR: Batzer; Bhattacharyya; Boudreau; Carr; Chen; Correa; Fontham; Greer;
 Newman; Samuels; Scheer; Stary; Strong; Tracy
 ASSOCIATE PROFESSOR: Gaumer; Ragan; Ruiz; Schneider; Sloop; Tulley
 ASSISTANT PROFESSOR: Ross

Pharmacology and Experimental Therapeutics

PROFESSOR: Backes; Barbee; Bobbin; Kapusta; Lanier; Moerschbaecher; Porter; Songu-Mize; Kolls,; Varner
 ASSOCIATE PROFESSOR: Erickson; Kirkendol; Paul; Winsauer
 ASSISTANT PROFESSOR: Park; Reddix ; Wu

Physiology

PROFESSOR: Bagby; Cairo; Happel; Hornick; Levitzky; McDonough; Meneray; Miller; Nakamoto; Nelson; Porter; Shepherd; Sloop;
 ASSOCIATE PROFESSOR: Liles; Molina; Potter

Public Health and Preventive Medicine

PROFESSOR: Brexler; Chen; Diaz; Fisher; Fontham; Porche; Roberts; Simonsen
 ASSOCIATE PROFESSOR: Cohen; Kissinger, Marier, Mercante; Scribner
 ASSISTANT PROFESSOR: Bedimo; Karabatsos; Moseley; Su



SHREVEPORT DIVISION

ADVISORY COUNCIL

SANDRA C. ROERIG, Ph.D.
Associate Dean for Research and Graduate Studies, Chairman

LEONARD SEELIG, Ph.D.
Cellular Biology and Anatomy, appointed

STEPHEN PRUETT, Ph.D.,
Cellular Biology and Anatomy, elected

ROBERT E. RHOADS, Ph.D.,
Biochemistry and Molecular Biology, appointed

NATHAN DAVIS, Ph.D.,
Biochemistry and Molecular Biology, elected

DENNIS J. O'CALLAGHAN, Ph.D.,
Microbiology and Immunology, appointed

MARTIN I. MUGGERIDGE, Ph.D.,
Microbiology and Immunology, elected

ADRIAN J. DUNN, Ph.D.,
Pharmacology and Therapeutics, appointed

KENNETH MCMARTIN, Ph.D.,
Pharmacology and Therapeutics, elected

D. NEIL GRANGER, Ph.D.,
Molecular and Cellular Physiology, appointed

DAVID LEFER, Ph.D.,
Molecular and Cellular Physiology, elected

NANCY LEIDENHEIMER, Ph.D.,
Pharmacology and Therapeutics, elected at large

RONALD L. KORTTHIS, Ph.D.,
Molecular and Cellular Physiology, elected at large

DALTON GOSSETT, Ph.D.,
Biological Sciences, LSU-S representative

PEYTON MYERS, B.S.
Cellular Biology and Anatomy, student member



CALENDAR 2002 – 2003

August, 2002 (Fall Semester)

Wednesday 7 - Registration.
Monday 12 - Classes begin.

September, 2002

Monday 2 - Labor Day.
Tuesday 3 - Last day to add class.
Tuesday 10 - Last day to drop class.

October, 2002

Monday 14 - Columbus Day.

November, 2002

Thursday 28 - Thanksgiving Holiday.
Friday 29 - Thanksgiving Holiday.

December, 2002

Friday 6 - Classes end.
Thursday 12 - Commencement (New Orleans).

December, 2002 (Spring Semester)

Monday 16 - Registration.

January, 2003

Monday 6 - Classes begin.
Monday 20 - Martin Luther King, Jr. holiday.
Tuesday 28 - Last day to add a class.
Friday 31 - Last day to drop a class.

March, 2003

Wednesday 3 - Mardi Gras holiday.

April, 2003

Friday 18 - Spring break begins.
Monday 21 - Classes resume.

May, 2003

Friday 16 - Classes end.
Monday 26 - Memorial day holiday.
Saturday 31 - Commencement (Shreveport)

May, 2003 (Summer Semester)

Monday 19 - Registration.
Tuesday 27 - Classes begin.

June, 2003

Monday 9 - Last day to add a class.
Monday 23 - Last day to drop a class.

July, 2003

Friday 4 - 4th of July Holiday.

August, 2003

Friday 1 - Classes end.
Monday 4 - Final exams (4th - 8th).
Saturday 16 - Commencement (Shreveport)

CALENDAR 2003 – 2004**August, 2003 (Fall Semester)**

Wednesday 6 - Registration.
Monday 11 - Class begin.

September, 2003

Monday 1 - Labor Day.
Monday 8 - Last day to add or drop a class.

October, 2003

Monday 13 - Columbus Day holiday.

November, 2003

Thursday 27 - Thanksgiving Holiday.
Friday 28 - Thanksgiving Holiday.

December, 2003

Friday 5 - Classes end.
Thursday 11 - Commencement (New Orleans).

December, 2003 (Spring Semester)

Monday 15 - Registration.

January, 2004

Monday 5 - Classes begin.
Monday 19 - Martin Luther King, Jr. holiday.
Monday 26 - Last day to add or drop a class.

February, 2004

Monday 23 - Mardi Gras holiday.

April, 2004

Friday 9 - Spring break begins.
Monday 12 - Classes resume.

May, 2004

Friday 14 - Classes end.
Saturday 29 - Commencement (Shreveport).

May, 2004 (Summer Semester)

Monday 17 - Registration.
Monday 24 - Classes begin.

June, 2004

Monday 7 - Last day to add or drop class.

July, 2004

Monday 5 - Independence Day holiday.

August, 2004

Friday 6 - Classes end.
Saturday 21 - Commencement (Shreveport).

COURSE DESCRIPTIONS

Below are listed the courses of instruction carrying graduate credit which are offered by the Departments of the Shreveport Division. No credit is given for any course unless the student has been duly registered in that course.

The amount of credit given for the completion of a course is based on the number of lectures or recitations a week for one semester of seventeen weeks; for example, one credit represents one hour of lecture or recitation a week for one semester. Two hours of laboratory work (in certain courses, three hours) is considered the equivalent of one lecture or recitation hour. When a course consists entirely or partly of laboratory, that fact is stated in the description of the course. When not otherwise specified, the course consists of lectures or recitations.

If the number of credits listed for a course is variable (for example, "24 cr."), the credit hours to be obtained by a student must be determined and recorded at the time of the student's registration. Any subsequent increase in the amount of credit will be equivalent to adding a new course, and this will not be permitted after the expiration of the period during which course changes may be made.

Graduate courses may be offered only when required by a minimal number of students enrolled for degrees.

BIOCHEMISTRY AND MOLECULAR BIOLOGY M.S., PH.D.

The goal of graduate education in biochemistry is to provide the foundation necessary to design and execute biochemical experiments and to communicate the findings to others. Highly developed skills in the use of the scientific methods enable the graduate to pursue a career in biomedical science at a university, research institute, hospital or in industry. The program is flexible and individually designed to meet the needs of the student. Concepts and principles are stressed in teaching and research. Laboratory research and investigation are vigorously emphasized at all stages in the program. Basic introductory and advanced courses are offered.

Before registering for any course, a student should consult the course director to determine adequacy of preparation for the course.

Core Requirements

The Program for obtaining the Ph.D. is tailored to the requirements of individual students, but the core requirements for all students are:

IDSP 111	Proteins, Enzymes and Generation of Metabolic Energy	2 credits
IDSP 112	Metabolism/ Genetics -----	2 credits
IDSP 113	Molecular Biology -----	2 credits
IDSP 114	Gene Expression and the Cell Cycle -----	2 credits
IDSP 115	Cell Biology -----	2 credits
IDSP 116	Biochemical and Molecular Methods	3 credits
IDSP 117	Biostatistics and Recombinant DNA	1 credits
IDSP 118	General Cell Biology Methods --	1 credits
IDSP 211	General Principles of Physiology and Pharmacology ---	1 credits
BCHM 223	Physical Biochemistry -----	2 credits
BCHM 282	Protein Structure/Function ----	1 credits
BCHM 288	Scientific Writing -----	1 credits

Non-Departmental Elective Courses ----- ≤ 6 credits

Departmental Elective Courses ----- ≥ 4 credits

BIOCHEMISTRY AND MOLECULAR BIOLOGY COURSE DESCRIPTIONS

207 Introduction to Special Methods of Research. 1-6 Credits, (Credit to be specified at time of registration.) Theoretical discussions and laboratory work in an area of research methodology, directed by an expert in the use of the method.

223 Physical Biochemistry. 2 Credits, Discussions of physical and chemical techniques used to study macromolecular architecture and interactions.

281 Molecular Mechanisms of Posttranscriptional Control. 1 Credit, A literature-based course on the molecular mechanisms associated with posttranscriptional control. Course material will be derived from the current literature and will focus on the most recent findings concerning splicing, polyadenylation, mRNA stability, translation, and protein targeting.

282 Topics in Biochemistry and Molecular Biology: Current Topics in Protein Chemistry. 1 Credit, A series of lectures on state-of-the-art approaches to studying proteins and their functions. This will include protein structure, protein folding and protein-ligand interactions.

283 Topics in Biochemistry and Molecular Biology: Molecular Mechanisms of Transcriptional Control. 1 Credit, A literature-based course covering the role of promoter-specific activators and repressors, the nature and role of the general transcriptional machinery, and the role of nucleosomes and higher-order chromatin structures in regulating transcription.

284 Topics in Biochemistry and Molecular Biology: Mechanisms of Genetic Control. 1 Credit, A series of lectures on the molecular mechanisms of genetic control in prokaryotes.

285 Topics in Biochemistry and Molecular Biology: Eukaryotic Developmental Biology. 1 Credit, A literature-based course that is focused on developmental regulatory mechanisms in higher animals. Topics include cell fate specification, differentiation, and pattern formation.

286 Topics in Biochemistry and Molecular Biology: Classical and Molecular Genetics. 1 Credit, This course will emphasize classical genetic methods as they apply to modern molecular biology. The course content will rely on yeast as an experimental organism, although the intent is to teach genetic principles as they apply to eukaryotic organisms in general.

287 Topics in Biochemistry and Molecular Biology: Applications of Spectroscopic Techniques to Biochemical Problems. 1 Credit, Lectures cover the use of state-of-the-art spectroscopic techniques to deduce kinetic and mechanistic aspects of proteins and nucleic acids.

288 Scientific Writing. 1 Credit, A course designed to teach the fundamentals of writing and critiquing scientific papers and grant proposals. This includes the identification of topics and laboratory approaches suitable for development in grant proposals.

298 Seminar. 1 Credit, Reports on research progress and on the current scientific literature in biochemistry and molecular biology.

299 Seminar. 1 Credit, Reports on research progress and on the current scientific literature in biochemistry and molecular biology.

300 Thesis Research. 1-6 Credits, Registration by permission of the major professor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits, Registration by permission of the major professor. Amount of credit must be stated at time of registration.

CELLULAR BIOLOGY AND ANATOMY M.S., PH.D.

The goal of graduate education in the Department of Cellular Biology and Anatomy is to provide a broad-based foundation in the anatomical sciences, including anatomy, cell biology, neuroscience, developmental biology, and pathology while providing students with the necessary background to design and perform experiments in the modern biomedical sciences. Programs leading to either an M.S. or Ph.D. degree in Cellular Biology and Anatomy are flexible and individually designed to meet the needs of a student who may wish to pursue a career in biomedical research in an academic or industrial environment or to pursue a teaching career in the biomedical or allied health professions. Concepts and principles of biomedical research are stressed in both the classroom and the laboratory. Competitive laboratory research and investigation are stressed from the beginning of the student's career. Basic introductory and advanced courses are offered in various disciplines, but particularly in the areas of neuroscience, cell biology, cancer biology, immunology, and pathology. Permission from the course director is required for registration in any advanced course.

The Department offers programs of study in cell biology, immunobiology, neuroscience, pathology, and cancer research which are tailored for individual students. Students generally complete the core curriculum and two advanced courses in their research areas before beginning full-time research to complete a thesis (M.S.) or a dissertation (Ph.D.).

Core Curriculum

The first year of the core curriculum is an integrated set of courses covering biochemistry, molecular biology, cellular biology, laboratory methods, philosophical and ethical issues in science. A concurrent series of courses cover the major organ systems, including descriptions of their anatomy, histology, physiology, and pharmacology. This is a multidisciplinary curriculum designed to provide students with a foundation in modern biomedical sciences. The first year of the curriculum also includes a laboratory-based course in methods in cellular biology. The core curriculum also includes at least two advanced courses. Courses offered by the Department of Cellular Biology and Anatomy are described below. Descriptions of the courses listed below for the first year are located in the general description of the Ph.D. program at LSUHSC-Shreveport.

Year 1 Courses

IDSP 111, 112, 113, 114, 115, 116, 117, and 118

IDSP 211, 212, 213, 214, 215, 216, 217, 218, and 219

Cebio 240-Philosophical and Ethical Issues of Science

Cebio 230-Experimental Cell Biology

CELLULAR BIOLOGY AND ANATOMY COURSE DESCRIPTIONS

200A Integrative Structural Biology. 2-5 Credits,

An introduction to the structure and function of the human body. The course consists of 17 hours of lecture and 34 hours of computer assisted laboratory experience (2 hours per lecture). There will be two written examinations based on the topics covered and will consist of short answers, cross-section identification, or essay questions.

200B Integrative Structural Biology. 2 Credits,

An introductory course in the study of eukaryotic cell biology. Emphasis is placed on the structure and function of cellular organelles and on signaling mechanisms.

200C Integrative Structural Biology. 2-5 Credits,

An introduction to the microscopic anatomy and function of human tissues.

200D Integrative Structural Biology. 2-5 Credits,

An introduction to human nervous system structure and function consisting of lectures on basic neurophysiological and neuropharmacological mechanisms, the overall morphology of the brain, spinal cord, and autonomic nervous system, and more detailed descriptions of specific cortical and subcortical systems, motor and sensory systems.

230 Experimental Cell Biology 1. 3 Credits,

Lecture and laboratory course for the design and implementation of experiments in cell biology. Includes instruction in animal handling and care, morphologic tissue preparation, computerized image-analysis, experimental design, data management and prepublication preparation. The course involves extensive student involvement and a laboratory report.

231 Experimental Cell Biology 2. 3 Credits,

Continuation of Anat. #230. Lecture and laboratory course for the design and implementation of experiments in cell biology. Includes instructions in the handling of radioisotopes, experimental use of radioisotopes, scanning and transmission electron microscopy, freeze fracture, hybridoma theory, experimental design, data evaluation and prepublication preparation. The course involve extensive laboratory training and a final laboratory report.

235 Concepts in Developmental Biology. 2-3 Credits,

This course will initially cover basic concepts in modern eukaryotic developmental biology and then will explore selected current topics in developmental biology.

Topics will include early embryogenesis, regulation of gene expression in development, cellular interactions during development, mechanisms of pattern formation, and evolution of developmental patterns. Weekly sessions will include lectures and presentations by students and invited speakers.

240 Philosophical and Ethical Issues In Science.

1 Credits, The objective of this course is to provide an understanding to the underlying philosophy in scientific endeavors and the ethical issues that face scientists. The course will involve detailed discussions about the history of scientific thought, the scientific method, experimentation and data collection, and current ethical issues. Weekly sessions will include lectures and discussions by faculty, students and guest speakers.

250 Research Methods. 2-5 Credits,

A laboratory course in which students rotate through selected faculty-research laboratories and become acquainted with the research techniques and laboratory routines in each.

280-2 Special Topics In Anatomy. 2-4 Credits,

Two to four hours of lecture per week to be arranged appropriate to topic and credit. Lectures, discussions and/or laboratories on areas not adequately covered in other scheduled courses. In addition, this course is designed to permit graduate students to explore one or more areas of particular interest to the staff in detail. Examples of selected topics: Biological rhythms, connective tissue biology, cranial-nerve embryology, uterine biology, neuronal plasticity, central nervous system development in an altered environment, patterns of visual connectivity, etc.

289 Current Topics in Cell Biology. 1 Credits,

In the fall and spring semesters, students will participate in a course offered in the format of a journal club, in which significant recent contributions to the research literature are discussed. This course offers students an opportunity to keep abreast of current research and to develop public speaking skills. The interpretation of results and critical analysis of experimental data will be emphasized. May be repeated for credit.

290 Seminar. 1 Credits,

Students will attend and participate in the seminars conducted by the Department of Cellular Biology and Anatomy. Periodically, each student will prepare and present to the group a seminar on the subject topic under discussion at that particular period of time. Emphasis will be placed upon such subjects as fine structure, correlation of biochemical information with ultrastructure, and the cytophysiology of the various organ systems.

291 Graduate Colloquium. 1 Credits,

One hour lecture. Students will be assigned a particular topic to present to the class for critical discussion. Special emphasis will be placed on selection of topics which broaden the student's knowledge in cellular, molecular and neurobiology.

299 Research Proposal in Anatomy. 3 Credits,

A required course for all doctoral candidates in which the student prepares, in National Institutes of Health grant applications format, a written proposal on the candidate's doctoral problem. The proposal is comprised of sections on a) Background of the problems, b) specific aims, c) rationale of the experimental approach, (d) preliminary findings, e) experimental methods. This proposal will be reviewed by the student's major advisor and examining committee. After the proposal is approved, the student may continue dissertation research. Deviations from the program outlined in the proposal must be approved by the student's examining committee.

300 Thesis Research. 1-6 Credits,

Registration by permission of the Head of the Department. Amount of credit to be stated at time of registration. Laboratory investigation which the student conducts to acquire information for the presentation to the faculty of a thesis is a necessary part of graduate study.

400 Dissertation Research. 1-9 Credits,

Registration by permission of the Head of the Department. Amount of credit to be stated at the time of registration. Laboratory investigation of the problem selected by the student for the student's doctoral dissertation must be pursued by every candidate.

MICROBIOLOGY AND IMMUNOLOGY M.S., PH.D.

The Department of Microbiology and Immunology offers programs of study leading to the degree, doctor of philosophy. The research facilities include a variety of equipment such as ultracentrifuges, scintillation counters, a computerized spectrophotometer system and laser densitometer, as well as specialized suites designed for computing, DNA sequencing, high performance liquid chromatography, photographic processing, germ free animal research, monoclonal antibody production, virus cultivation and tissue culture work, isotope experimentation, polymerase chain reaction technology, flow cytometry and recombinant DNA-gene cloning research. The major research emphasis of the faculty currently involves: cell and molecular biology of prokaryotic and eukaryotic cells and animal viruses; cellular, tumor, and molecular immunology; pathogenesis of bacterial, viral, and parasitic diseases; and tumor virology; basic research on the development of vaccines for bacterial and viral diseases. Ongoing research includes investigation of agents related to bioterrorism. The curriculum is composed of courses in the areas of cell and molecular biology, bacterial structure/function, microbial and mammalian cell genetics, virology, immunology and pathogenesis. The primary emphasis of the doctoral program concerns, however, the training of graduate students to become independent researchers in the biomedical or university environment. In the seminar and journal club courses, emphasis is placed on training students how to organize and present scientific information and to develop skills in teaching. Students are required to write and to defend two major research proposals in order to obtain experience and skills in scientific writing and in composing grant applications that present a carefully crafted research plan. Collaborative research efforts are encouraged between members of the department and with faculty and students at LSUHSC and other research institutions.

Core Requirements

The Program for obtaining the Ph.D. can be tailored to the requirement of each individual student, but the core requirements for all students are:

IDSP 111 Proteins, Enzymes and the Generation of Metabolic Energy ---	2 credits
IDSP 112 Metabolism and Genetics -----	2 credits
IDSP 113 Molecular Biology -----	2 credits
IDSP 114 Gene Expression and the Cell Cycle -----	2 credits
IDSP 115 Cell Biology -----	2 credits
IDSP 116 Methods in the Biomedical Sciences: Biochemical and Molecular Methods -----	1 credits
IDSP 117 Methods in the Biomedical Sciences: Biostatistics and Recombinant DNA -----	1 credits
IDSP 118 Methods in the Biomedical Sciences: Recombinant DNA and Cell Biology -----	1 credits
Micro 291 Bacteriology and Molecular Pathogenesis of Infectious Diseases 1 -----	3 credits
Micro 297 Immunology -----	3 credits
Micro 276 General and Molecular Virology	3 credits
Micro 289 Molecular Pathogenesis of Infectious Diseases 2 -----	3 credits
Micro 298 Seminar -----	1 credits
Micro 400 Dissertation Research -----	6 credits
Journal Club Courses: (Participation Required Every Semester in at least one course)	
Micro 283 Cellular Microbiology	
Micro 292 Advanced Virology & Molecular Biology	
Micro 293 Advanced Immunology	
Micro 295 Bacteriology	
CB240 Philosophical and Ethical Issues in Science -----	1 credits
Elective (One Elective Advanced Course)	1-3 credits

MICROBIOLOGY AND IMMUNOLOGY COURSE DESCRIPTIONS

Part 1: Required Courses

IDSP 111 PROTEINS, ENZYMES, AND THE GENERATION OF METABOLIC ENERGY. 2 Credits,
This course provides an introduction to the basic biochemical properties of amino acids and proteins, a discussion of protein assembly and folding into the three dimensional structures required for function, and an introduction to basic principles of enzyme kinetics, examples of enzyme active site structure and mechanism of action. This is followed by a discussion of the important biochemical processes and enzymes that cells utilize to generate metabolic energy.

IDSP 112 METABOLISM AND GENETICS. 2 Credits,
Selected features of the metabolism of carbohydrates, lipids, amino acids, and nucleotides are presented with discussions of the important mechanisms cells utilize to regulate these processes. The course concludes with a basic introduction to prokaryotic and eukaryotic genetics, a discussion of model systems and their use in understanding basic cellular processes.

IDSP 113 MOLECULAR BIOLOGY. 2 Credits,
An introduction to the molecular biology of Prokaryotic/Eukaryotic cells: Emphasis is placed on the understanding in molecular detail the basic functions of living cells. The first half of the course will give the student a fundamental understanding of the biochemistry/molecular biology of nucleic acids and the basic biological functions involving DNA; replication, repair, recombination, and transposition. The second half of the course deals with mechanisms of transcriptional control, protein synthesis, genomics and proteomics. Attention is also focused on current techniques of molecular biology and recombinant DNA technology. Lectures, problem sets and discussion of the current literature.

IDSP 114 GENE EXPRESSION AND THE CELL CYCLE. 2 Credits, An introduction to the mechanisms underlying eukaryotic gene expression and cell cycle control. In the first half of the course, the synthesis and processing of RNA, the role of gene-specific transcription factors, chromatin structure and function, translational mechanisms, and model systems of eukaryotic gene expression will be discussed. The second half of the course will focus on the cell biology of the nucleus, mechanisms of cell division and cell cycle control, mitosis and cytokinesis, ubiquitin-mediated proteolysis, apoptotic mechanisms, and the role of ion channels/membrane potential. Lectures and discussions of the current literature.

IDSP 115 CELL BIOLOGY. 2 Credits,
A modern comprehensive course concerning the regulation of cellular signaling, the cytoskeleton, and adhesion-mediated processes in eukaryotic cells. Emphasis is placed on the molecular mechanisms involved and approaches used to understand receptor-mediated signaling and signal transduction pathways. Emphasis will be placed on the regulation of the cytoskeleton, the mechanisms involved in protein and membrane trafficking, endocytosis, the secretory system, and adhesion-mediated biology. Attention is also focused on current molecular and cellular biological techniques used today in the investigation of these important cellular processes.

IDSP 116 METHODS IN THE BIOMEDICAL SCIENCES – Biochemical and Molecular Methods. 1 Credit, The principles and application of common methods used for detection and analysis of macromolecular structure, function, and interaction will be discussed. This course covers biochemical methods of separation and detection of macromolecules as well as molecular analysis. Three hours of introductory biostatistics are also included. The goals of the course are: to develop an understanding of basic methods applied to the study of proteins and nucleic acids; to become familiar with the instrumentation used for these methods; familiar in the sense that students should be aware what instrumentation is required and have a basic idea how it is used; and to become aware of the ways that these methods and techniques are applied to study of macromolecules, i.e., have some idea what methods can/should be used to study a particular problem. There will be some form of out of class work for most lectures, including problems, literature reviews, and visits to core facilities and major equipment and use of some equipment.

IDSP 117 METHODS IN THE BIOMEDICAL SCIENCES - Biostatistics and Recombinant DNA. 1 Credit, Goals are the same as for IDSP 116. This course covers biostatistical analysis of data (continuing from IDSP 116) and a section on recombinant DNA methods, including cloning and gene expression, DNA sequencing, PCR, mutagenesis and nucleic acid and protein labeling.

IDSP 118 METHODS IN THE BIOMEDICAL SCIENCES: Recombinant DNA II and Cell Biology. 1 Credit, Goals are the same as for IDSP 116. This course covers analysis of nucleic acids and proteins, including interaction detection methods, genomics and proteomics and also covers direct observation methods of analysis and immunological methods, and principles and application of centrifugation methods for subcellular fractionation. There will be one exam at the end of the course.

Micro 297 IMMUNOLOGY. 3 Credits, An advanced course, employing both lecture and discussion formats, that is designed to cover many of the important aspects of modern cellular and molecular immunology. Strong emphasis is placed on understanding the myriad of molecular interactions involved in the development, function, and regulation of the cells responsible for immune phenomena. By the supplemental reading of crucial journal and review articles, students are encouraged to examine and interpret recent experimental findings.

Micro 276 GENERAL AND MOLECULAR VIROLOGY. 3 Credits, An introduction to the structure, replication, biology, and molecular biology of animal viruses. Emphasis is also given to virus-cell interactions at the molecular level, including the immune response to viral infections, and current research on mechanisms of viral replication and its effect on regulatory mechanisms of host cells. Lectures, discussions, and seminars.

Micro 291 BACTERIOLOGY AND MOLECULAR PATHOGENESIS OF INFECTIOUS DISEASES 1. 3 Credits, An advanced course of lectures, discussions, and student presentations in the areas of structure, function, and physiology of bacteria. In the first portion of the course, emphasis will be placed on bacterial structure and the functions of these structures, bacterial physiology, and the nature of antibiotics and their mechanisms of action. In the second portion, the mechanisms employed by bacteria to cause disease will be stressed, and lectures will cover the major types of bacterial infectious diseases. Lastly, basic information on the properties of fungi will be covered, and lectures will address topics in medical mycology.

Micro 289 MOLECULAR PATHOGENESIS OF INFECTIOUS DISEASES 2. 3 Credits, An advanced study of the mechanisms whereby parasites and viruses cause infectious disease. The interactions between these pathogens and the host will be examined in detail utilizing various animal and human models. Pathogenesis will be presented ecologically following the events of the pathogen's entry into the host, its encounters with the host, its encounters with the host's defense mechanisms, strategies employed by the parasite and virus to counteract host defenses and to spread throughout the host, mechanisms of cell and tissue damage, etc. Emphasis will be placed on the molecular aspects of virulence factors and host defenses.

CB 240 PHILOSOPHICAL AND ETHICAL ISSUES IN SCIENCE. 1 Credit, The objective of this course is to provide an understanding of the underlying philosophy in scientific endeavors and the ethical issues that face scientists. The course will involve detailed discussions about the history of scientific thought, the scientific method, experimentation and data collection, and current ethical issues. Weekly sessions will include lectures and discussions by faculty, students and guest speakers.

PART 2: Elective Courses

Micro 279A ADVANCED MOLECULAR VIROLOGY. 1 Credit, The lectures will concern the structure, molecular biology, biology, and immunology of a family or cluster of families of animals or plant viruses. The course will consider numerous aspects of each virus family and will emphasize how molecular techniques are employed to understand the replication of the virus and its effects on the host. Among the lecture topics for each virus family: classification, genomic structure, virion architecture, regulation of viral gene expression, virion assembly, mechanisms of cytopathology, the varied outcomes of infections, role of the host immune system in infection, and strategies for design of antiviral drugs/vaccines. Each student will make a presentation on an assigned topic. In the case of students who enroll for a letter grade, a written examination and the quality of the student's presentation will determine the letter grade.

Micro 279B VIRAL PATHOGENESIS. 1 Credit, This course will concern recent developments in viral pathogenesis. The lectures and discussions will consider the interactions between viruses and the host at the molecular, cellular, and host levels and the role that these interactions play in determining the overall outcome of infection. Emphasis will be given to mechanisms by which the virus evades the host immune system, establishes a persistent or latent infection, or transforms the cell.

Micro 279C AIDS AND HUMAN RETROVIRUSES. 1 Credit, Lectures are on the structure, molecular biology, immunology and pathogenesis of the human retroviruses, i.e. HIV, HTLV-I and HTLV-II. The course will emphasize how molecular techniques are employed to understand replication of these viruses and their effects on the host. Among the lecture topics are: virion architecture, genome structure, attachment and entry into the cells, regulation of viral gene expression, genome replication, role of the immune system in infection, HIV and the nervous system, clinical aspects, and strategies for the design of antiviral drugs and vaccines. Lectures will be given by the faculty. In addition, each student will make a presentation on an assigned topic. In the case of students who enroll for a letter grade, a written examination and the quality of the student's presentation will determine the letter grade.

Micro 280 TECHNIQUES IN MICROBIOLOGY. 1-3 Credits, A laboratory course designed to familiarize the student with modern technology of molecular biology, including analytical and preparative centrifugation, electrophoresis, spectrophotometry, column chromatography, etc. Emphasis is on applications to simple problems conducted at the laboratory bench.

Micro 281 SELECTED TOPICS IN MICROBIOLOGY.

1-3 Credits, This course is designed as a specialized course for advanced students to address the latest concepts and information in a discipline of microbiology such as bacterial structure, microbial genetics, gnotobiology, molecular pathogenesis, etc.

Micro 282 SELECTED TOPICS IN IMMUNOLOGY.

1-3 Credits, Topic and credits by arrangement. This course is designed as a specialized course for advanced students to address the latest concepts and research findings in one or more areas of immunology such as tumor immunology, cellular immunology, immunogenetics, monoclonal antibody research, etc.

Micro 284 CELL AND TISSUE CULTURE. 2-3 Credits, One-hour lecture and three hours laboratory. The structure and culture of animal cells and tissues are discussed and laboratory exercises are carried out so that the student may utilize these techniques in studying intracellular parasitism.

Micro 300 THESIS RESEARCH. 1-6 Credits, Registration by consent of the Head of the Department. Amount of credit to be stated at the time of registration.

At least 1 credit in a letter-grade Elective Course is also required.

A partial listing of these Elective Courses is below:

Advanced Molecular Virology: The Herpesviridae -----	1 Credits
Advanced Molecular Virology: Viral Pathogenesis -----	1 Credits
Aids and Human Retroviruses -----	1 Credits
Selected Topics in Microbiology -----	1-3 Credits
Selected Topics in Immunology -----	1-3 Credits
Physical Biochemistry -----	2 Credits
Molecular Mechanisms of Post-Transcriptional Control -----	1 Credits
Topics in Biochemistry-Protein Structure/Function -----	1 Credits
Molecular Mechanisms of Transcriptional Control -----	1 Credits
Genes and Development of Higher Eukaryotic Cells -----	1 Credits
Topics in Biochemistry: Classical and Molecular Genetics -----	1 Credits
Applications of Spectroscopic Techniques to Biochemical Problems ----	1 Credits
Biometric Methods in the Health Sciences	2 Credits

Part 3. Journal Club Courses

First year students rotate through Journal Clubs during the first semester. Every student must become a member of a Journal Club beginning in January of the first year.

Micro 292 DISCUSSIONS IN ADVANCED VIROLOGY AND MOLECULAR BIOLOGY. 1 Credit, A journal club format is used for students to present and discuss developing concepts and new information about techniques and research findings from the disciplines of molecular virology and cellular-molecular biology. Emphasis is given to teaching the student to develop the skills required for a critical assessment of the scientific literature and for understanding how new information can be applied to research problems.

Micro 293 DISCUSSIONS IN ADVANCED IMMUNOLOGY. 1 Credit, A journal club/research in progress format is used for the discussion of new findings in immunology and related fields. Experimental observations published in the literature as well as those from the student's own research activities are explored. Emphasis is placed on the development of communication skills as well as the ability to critically evaluate experimental data and improve experimental design.

Micro 295 DISCUSSIONS IN BACTERIOLOGY.

1 Credit, A journal club/research in progress format is used for discussion of recent published and unpublished research in the field of bacteriology. Emphasis is placed on critical evaluation of experimental design, data and conclusions as well as on the development of communication skills and knowledge of new developments in prokaryotic biology.

Micro 283 CELLULAR MICROBIOLOGY. 1 Credit, The journal club will focus on papers describing pathogen-host cell interactions. The journal club will be appropriate for bacteriologists, virologists and cell biologists interested in a multi-disciplinary area now termed cellular microbiology. The pathogens that will be covered will include bacterial, viral and protozoan. Papers to be presented will cover, but not be limited to, the following topics including: How do pathogens regulate internalization? How do pathogens manipulate phagosome maturation pathways? How do pathogens avoid or disable the immune system? How do infectious agents cause cancer? The Journal Club will meet once a week for one hour.

Part 4. Required Research And Seminar Courses

Micro 298 SEMINAR IN MICROBIOLOGY. 1 Credit, The student prepares and presents selected findings from either the current literature or his/her research in a 45-minute public seminar. The seminar consists of a brief and informative introduction, explanation of the experimental procedures and strategies employed, presentation and critical assessment of the findings, and a questions/discussion period. Prior to the seminar, the student must prepare and circulate a written abstract announcing the seminar and summarizing the key findings to be presented. One seminar each year must concern the research in progress by the student. The student is provided a written critique of the seminar by each faculty member and discusses these critiques with the faculty member responsible for the course.

Micro 400 DISSERTATION RESEARCH. Credit to be arranged, Research for the doctoral degree is conducted under the supervision of the student's Advisor in concert with the members of the student's Advisory Committee. Registration is by consent of the Head of the Department. The amount of credit is to be stated at the time of registration.



MOLECULAR AND CELLULAR PHYSIOLOGY M.S., PH.D.

The goal of the graduate training program in physiology is to provide the skills necessary for the graduate to pursue an independent career in biomedical research at a university, research institute, hospital, or in industry. The program provides graduate training through introductory and advanced courses, participation in seminars and national meetings, and preparation of grant proposals. Laboratory research is vigorously emphasized at all stages of the program. The major research emphasis of the faculty is focused on cardiovascular physiology, pathophysiology, and cell and molecular physiology. Current topics of investigation relate to the function of the microcirculation in health and disease, vascular biology of nitric oxide, ischemic heart disease and heart failure, the role of granulocytes and free radicals in inflammation and postischemic cellular injury, glutathione-dependent detoxification, and mitochondrial responses to ischemia and reperfusion. These problems are addressed at the subcellular, cellular, and organ levels.

Core Requirements

The Program for obtaining the Ph.D. can be tailored to the requirement of each individual student; but the core requirements for all students are:

Biochemistry/Molecular Biology I & II --	8 credits
Foundations of Biomed. Sciences I & II -	10 credits
Skills in Investigate Research -----	2 credits
Cell Pathophysiology -----	4 credits
Neurophysiology -----	1 credits
Cardiac Physiology -----	5 credits
Gastrointestinal Physiology -----	4 credits
Vascular Biology -----	5 credits
Methods in Biomed. Sciences mod I & II -	3 credits
Laboratory Rotations -----	1-4 credits
Physiology Seminar Series -----	1 credit
Journal Club -----	1 credit
Inflammation Journal Club -----	1 credit
Physiological Chemistry of Reactive Oxygen & Nitrogen -----	4 credits

MOLECULAR AND CELLULAR PHYSIOLOGY COURSE DESCRIPTIONS

201 and 203. Research. (Hours and credits by arrangement) Theory and application of specialized techniques and instrumentation used for studying various physiological phenomena. Emphasis is in one or more of the following areas: Gastrointestinal transport, cardiovascular dynamics, radioimmunoassay, blood gas analysis, and computer techniques applied to analysis of biological data.

202 Laboratory Rotations. 1-4 Credits,

This is a core first year course for graduate students that provides an overview of research activities that are ongoing in the department of physiology. Students will select 4 laboratories in the Dept. of Molecular & Cellular Physiology and participate in laboratory activities for a period of 2-6 weeks in each laboratory. Laboratory rotations must be approved by the Director of Graduate Studies and the Department Chairman.

210 Cell Pathophysiology. 4 Credits,

This is a core first year course for graduate students that provide a basic introduction to cell biology and physiology with an emphasis on the cell and molecular basis of disease. This course also serves to introduce new graduate students to the technologic approaches employed in the Department of Molecular and Cellular Physiology. The course is team taught by the departmental faculty and will consist of both lectures and labs. The grading is based on both written midterm and final exams.

211 Special Topics in Physiology

Skills in Investigative Research. 2 Credits,

This course will provide a practical introduction to first year graduate students to the basic oral and written skills that are fundamental in investigative research. Students will be instructed in the theory and practice of how to write a scientific paper, to present a scientific talk, to critique and present research papers, and grantsmanship. Student participation is a major emphasis.

Physiology Journal Club. 1 Credit,

An advanced course that introduces the student to current publications in many areas of physiology. This course will expose the student to the skills and techniques required to critically analyze the information and content of scientific publications. Students will be required to present physiology publications to a group and lead a discussion on the papers presented. The student will learn valuable skills required to become an independent scientist. Student participation is a major emphasis of this course.

Inflammation Journal Club. 1 Credit,

An advanced course that is identical to the Physiology Journal club except that all of the journal articles to be reviewed will focus on the pathophysiology of inflammatory disease states.

214 Neurophysiology. 1 Credit,

An introduction to the basics of neurophysiology including the organization of the nervous system, sensory receptors, pain perception, the optics of vision, the spinal cord and brain stem, control of muscle function, the cerebral cortex, behavioral functions of the brain, activation of the brain, and the autonomic nervous system. This class is offered in conjunction with the Allied Health Physiology course.

230 Physiological Chemistry of Reactive Oxygen

Metabolites. 4 Credits, This course is designed to introduce the student to the basic concepts of oxygen-derived free radical chemistry with particular emphasis on the physiological consequences of normal and/or aberrant free radical production in vivo.

277 Cardiac Physiology. 5 Credits,

A comprehensive summary of the physiological, biophysical, and biochemical basis of cardiac function. The major emphasis is on the relationship between the biochemical properties of individual organelles of the myocardial cell, the biophysics of cardiac muscle contraction, and the performance of the intact heart. Cardiac dysfunction associated with cardiovascular disease states is a major focus of the course.

278 Vascular Biology. 5 Credits,

A comprehensive summary of physiology of the peripheral circulation. The major emphasis is on the functions of various components of the microcirculation including a consideration of the biophysics of vascular smooth muscle contraction and its relation to the regulation of blood flow distribution within and among organs, substrate transport across the microcirculation, the endothelial cell as a metabolic barrier to substrate transport, regulation of blood flow in the various organs, and angiogenesis.

279 Gastrointestinal Physiology. 4 Credits,

A comprehensive summary of digestive system physiology using the organ systems approach in which the physiologic concepts relevant to individual organs are systematically presented. The approach lets the student track a bolus of food through the entire gastrointestinal tract, learning on the way each organ's physiologic junctions as the bolus directly or indirectly contracts it.

280-289 Special Topics in Physiology. (Hours, and lecture/laboratory time distribution to be independently arranged for each course as appropriate) An opportunity to explore, in an organized format and under supervision, specialized areas or specific subjects not adequately covered in other scheduled courses. By permission only.

298 Seminar. 1 Credit,

A maximum of two credits towards the M.S. or four credits toward the Ph.D. may be earned.

300 Thesis Research. 1-6 Credits,

Amount of credit to be stated at time of registration.

400 Dissertation Research. 1-9 Credits,

Amount of credit to be stated at time of registration.

PHARMACOLOGY AND THERAPEUTICS M.S., PH.D.

Training is available in diverse areas of pharmacology, toxicology, and therapeutics. The program is designed to provide graduate training through advanced courses, seminars, and laboratory research leading to the Doctor of Philosophy degree in Pharmacology. The Master of Science degree program is available to selected students at the discretion of the faculty. Special opportunities exist in the fields of neuropharmacology, molecular pharmacology and toxicology. Students enrolled in the doctoral program are required to take core courses that emphasize biochemistry, physiology, biometry, methods in pharmacology, principles of pharmacology, and general pharmacology. Other courses may be required depending upon the student's background and interests.

The area for dissertation research is chosen by the student in consultation with the faculty. Students may register for graduate courses only after consultation with the course director.

Core Requirements

The program for obtaining the Ph.D. can be tailored to the requirement of each individual student, but the core requirements for all students are:

IDSP 111-115 Biochemistry and Molecular and Cell Biology -----	10 credits
IDSP 215, 220 Foundations of Biomedical Sciences I and II -----	10 credits
203 Methods in Pharmacology -----	3 credits
233 Neuropharmacology -----	2-3 credits
260 Molecular Pharmacology -----	3 credits
245 Toxicology -----	2 credits
270, 271 or 272 Discussions in Neuropharmacology / Toxicology / Pharmacology -----	4 credits
298 Seminar -----	4 credits

PHARMACOLOGY AND THERAPEUTICS COURSE DESCRIPTIONS

200 Grant Writing. 1 Credit,

A review of the process of grant writing and submission. Lectures will review the structure of the major granting agencies and the mechanisms for submission, review and awarding of grants. The application form for NIH grants will be studied in detail, with discussions on the requirements for budgetary justification, the use of animals and humans, and other ethical considerations. The course will include a mock study section in which students will review and evaluate grant applications.

203 Methods in Pharmacology. 1-3 Credits,

Hours and credit by arrangement. Course consists of many of the classical methods used in investigating the action of drugs.

210 Methods in Pharmacology Demonstrations. 1 Credit,

Hands-on laboratory demonstrations of pharmacological research techniques employed in the department.

221-231 Advanced Topics in Pharmacology. 1-4 Credits,

Hours and credits as well as lecture and laboratory to be arranged depending upon the special topic. This course is designed for advanced studies of special groups of drugs such as steroids, antibiotics, antihistaminic, analgesics, etc.

233 Neuropharmacology. 2-3 Credits,

A study of chemical transmissions in the central nervous system with special emphasis on drug-modifications of transmitter action and neuronal function. The topics presented include: the biochemical basis of neuropharmacology, drug-modification of physiological function and behavioral pharmacology.

238 Cardiovascular Pharmacology. 2 Credits,

Two hours of lecture. The study of drugs used to treat cardiovascular disorders with primary emphasis on their fundamental mechanism of action.

240 Behavioral Pharmacology. 2 Credits,

Basic principles of the experimental analysis of behavior, including operant and classical conditioning, and schedules of reinforcement. Definition and scope of behavioral pharmacology. Behavioral mechanisms of drug action. Drug-environment interaction.

242 Pharmacology of Drugs of Abuse. 3 Credits, This

course will discuss the behavioral and physiological effects of drugs of abuse and the mechanisms of action of these substances. Topics will include the rewarding and additive properties, the teratogenic effects and the immunosuppressant effects of drugs of abuse. Specific classes of drugs to be discussed will include, but not limited to, stimulants, cannabinoids, opiates, alcohol, hallucinogens and depressants.

243 Environmental Toxicology. 2 Credits, Two hours of

lecture and classroom discussion. A study of the effects of industrial, agricultural and other human produced pollutants on the deterioration of the environment. The control of environmental problems will be illustrated in case histories.

245 Toxicology. 2 Credits, A study of the general principles of

toxicology, including the biochemical and physiological mechanisms by which injury is produced. Specific organ systems and toxic compounds will be discussed for illustration.

248 Neuroendocrinology. 3 Credits, The course in

Neuroendocrinology will examine basic features of the hypothalamo-pituitary unit and the fundamental mechanisms of neuroendocrine regulation. Specific topics will include in depth studies of the axes regulating stress responses, reproductive function, hunger/satiety, water balance, and other metabolic bases. The course will examine psychiatric aspects of neuroendocrine activity and will also include aspects of the bi-directional communications with the immune system.

250 Neurochemistry. 4 Credits, The biochemistry of nervous

tissue: the metabolism and function of carbohydrates, amino acids, nucleotides, lipids, proteins, glycoproteins, peptides, and nucleic acids. To include axoplasmic transport and functional aspects such as neurotransmission and neuroendocrinology, as well as the relationship of brain neurochemistry to function as expressed in physiology and behavior.

251-254 Research in Pharmacology. 1-8 Credits,

This course offers in-depth experience in research development, design, methodology and implementation. Students will undertake specific projects of limited scope and develop their findings under the guidance and direction of faculty preceptors.

260 Molecular Pharmacology. 3 Credits,

The course will study pharmacological principles from a molecular perspective. Lectures will focus on the study of receptors, enzyme systems, transmitters, growth factors, and ion channels in order to provide an understanding of the molecular components and processes involved in cellular events such as signal transduction. Finally, the molecular mechanisms of action of pharmacological agents that affect these systems will be discussed. Faculty lectures and student-led discussions.

270 Discussions in Neurochemistry and

Neuropharmacology. 1 Credit, A journal club/research presentation format in which students present and discuss new concepts and research findings in neurochemistry and neuropharmacology. Students will be taught critical assessment of research data and how new techniques can be applied to research problems. Grading will be by faculty on the basis of student presentations and participation in class discussions.

271 Discussions in Toxicology. 1 Credit,

A journal club/research presentation format in which students present and discuss new concept and research findings in all areas of toxicology, including biochemical, clinical and environmental. Students will be taught to critically assess research data and how to apply new techniques to research problems. Grading will be based on student presentations and participation in class discussions.

272 Discussions in Pharmacology. 1 Credit,

A journal club/research presentation format in which students present the content of new research publications and discuss the new concepts and research findings. A wide variety of topics relating to pharmacology will be covered. Students will learn the critical assessment of research data and how new techniques can be applied to research problems. Grading will be by faculty on the basis of student presentations and participation in class discussions.

298 Seminar. 1 Credit,

Students are required to attend and participate in oral presentations of research data and reviews of current topics of interest in pharmacology and toxicology. A maximum of two credits toward the M.S. or four credits toward the Ph.D. may be earned. Students are required to participate in seminar each semester regardless of credit earned.

299 Research Proposal in Pharmacology. 3 Credits,

A required course for all doctoral candidates. The student will write a proposal for his/her dissertation research in National Institutes of Health grant-application format. The proposal should contain sections on a) specific aims, b) background and significance, 3) preliminary studies, d) experimental methods, as well as detailed budget and justification, and rationale for the use of animals and/or humans if applicable. The proposal will be reviewed by the student's Research Advisory Committee, which will include an expert in the research field from outside the University, and presented by the student before this Committee. The grade will be assigned by the Advisory Committee based on the scientific quality of the written proposal and its verbal defense.

300 Thesis Research. 1-6 Credits,

Registration by permission of instructor. Amount of credit must be stated at time of registration.

400 Dissertation Research. 1-9 Credits,

Registration by permission of instructor. Amount of credit must be stated at time of registration.



MASTER OF SCIENCE DEGREE PROGRAM LSU-Shreveport in Cooperation with LSUHSC Shreveport School of Graduate Studies

A Master of Science Degree in cooperation with LSU-Shreveport (LSU-S) is designed to meet the needs of students who wish to pursue laboratory research based graduate training at the Master's level. The Program is flexible and designed to meet the needs of students wishing to pursue technical careers in both academic and industrial environments. Prospective students include graduates with Bachelor's degrees from area colleges and research associates currently employed at LSU Health Sciences Center-Shreveport (LSUHSC-S) or other science-based industries in the area.

Students will complete the required 30 hours with a maximum of 15 credit hours at LSU-S for transfer to LSUHSC-S. The remaining required nine hours would be taken on a space available basis from courses currently offered at the LSUHSC-S that are not part of the medical curriculum. Select LSU-S faculty are admitted to the graduate faculty at LSUHSC-S and can serve as thesis directors for an additional six hours of credit, or LSUHSC-S graduate faculty can serve if desired. Completion of the program is required before application to LSUHSC-S Medical School can be considered.

One academic year, two semesters or four summer terms in residence are required but two years' residence is a more realistic average. Students are required to register and pay tuition and fees at the campus that is offering the appropriate coursework. Students taking courses at both campuses must register at each campus.

The approval of both institutions is required to grant a student admission to the program. Each student's committee should include at least one member of the LSUHSC-S graduate faculty along with the appropriate LSU-S faculty.

Courses at LSU-Shreveport

Proposed for Inclusion in the Joint Degree

Required Course

BCHM 722 Instrumental Analysis and Experimental Design

Elective Courses

BCHM 610, 612 Biochemistry and Molecular Biology I, II
 BCHM 610L, 612L Biochemistry and Molecular Biology Laboratory I, II
 BCHM 630 Biophysical Chemistry
 BCHM 740 Plant Biochemistry
 BIOS 660 Microbial Genetics
 BIOS 665 Applied Biotechnology
 BIOS 670 Evolution
 BIOS 671 Biogeography
 BIOS 690, 785 Special Topics in Biology
 BIOS 745 Plant Molecular Biology
 BIOS 750 Ecotoxicology

Courses at LSUHSC-S for Incorporation ***IDSP INTERDISCIPLINARY COURSES**

IDSP 111 Proteins, Enzymes and Generation of Metabolic Energy
 IDSP 112 Metabolism/ Genetics
 IDSP 113 Molecular Biology
 IDSP 114 Gene Expression and the Cell Cycle
 IDSP 115 Cell Biology
 IDSP 116, 117, 118 Methods in Biomedical Sciences
 IDSP 211 Foundations of Biomedical Sciences:
 General Principles
 IDSP 212 Foundations of Biomedical Sciences:
 Cardiovascular System
 IDSP 213 Foundations of Biomedical Sciences:
 The Renal System
 IDSP 214 Foundations of Biomedical Sciences:
 Respiratory System
 IDSP 216 Foundations of Biomedical Sciences:
 Gastrointestinal System
 IDSP 217 Foundations of Biomedical Sciences:
 Endocrine System
 IDSP 218 Foundations of Biomedical Sciences:
 Nervous System
 IDSP 219 Foundations of Biomedical Sciences:
 Inflammation, Infection and Cancer

BIOCHEMISTRY

BCHM 223 Physical Biochemistry
 BCHM 281 Molecular Mechanisms of Post-transcriptional Control
 BCHM 282 Protein Structure/Function
 BCHM 283 Molecular Mechanisms of Transcriptional Control
 BCHM 284 Mechanisms of Genetic Control
 BCHM 285 Eukaryotic Developmental Biology
 BCHM 286 Classical and Molecular Genetics
 BCHM 287 Applications of Spectroscopic Techniques

CELL BIOLOGY AND ANATOMY

ANAT 216 Human Developmental Biology
 ANAT 262 Reproductive Biology
 ANAT 280-282 Special Topics in Anatomy

MICROBIOLOGY AND IMMUNOLOGY

MICRO 276 General Molecular Virology
 MICRO 291 Bacteriology and Molecular Pathogenesis I
 MICRO 289 Pathogenesis of Infectious Disease II
 MICRO 297 Immunology

PHARMACOLOGY AND THERAPEUTICS

PHARM 260 Molecular Pharmacology (required)
 PHARM 233 Neuropharmacology
 PHARM 238 Cardiovascular Pharmacology
 PHARM 240 Behavioral Pharmacology
 PHARM 242 Pharmacology of Drugs of Abuse
 PHARM 243 Environmental Toxicology
 PHARM 245 Toxicology
 PHARM 248 Neuroendocrinology
 PHARM 250 Neurochemistry

MOLECULAR AND CELLULAR PHYSIOLOGY

PHYS 230 Physiological Chemistry of Reactive Oxygen Metabolites
 PHYS 277 Cardiac Physiology
 PHYS 278 Vascular Biology
 PHYS 279 Advanced Gastrointestinal Physiology
 PHYS 280-289 Special Topics in Physiology
 PHYS 298 Physiology Seminar Series

* Other advanced courses may be available with permission of the appropriate instructors and department chairmen.

INTERDEPARTMENTAL**101 Principles of Radiation Safety. 1 Credit,**

This course is designed to present the principles necessary for understanding the chemistry and physics associated with radioactivity and its application in the research laboratory. The instrumentation utilized for qualitative and quantitative detection of radiation will also be discussed. Radiation safety directed toward an understanding of radiation hazards and protection from them will be emphasized.

201 Introduction to Human Cancer-Research, Treatment and Prevention. 3 Credits, Faculty Member in charge: James Cardelli, Ph.D., Department of Microbiology and Immunology.

This will be a three credit introductory course team taught by basic scientists and clinical scientists. Four topics will be covered including: 1) An introduction and overview of cancer; 2) cancer cell biology; 3) the diagnosis, treatment and prevention of cancer and 4) the molecular pathogenesis and treatment of specific cancers. The focus of this course will be to provide information concerning what is currently understood about the biochemical mechanisms operating during neoplasia and will include up to date information about oncogenes, tumor suppressor genes, metastasis, angiogenesis, tumor immunology, diagnostic approaches (conventional and molecular) and treatment modalities. The course will consist of lectures that stress the research approaches and finding that currently form the basis for our understanding of how neoplastic cells arise and form cancers. This course will form the basis for more advanced courses in the cell and molecular biology of cancer.

221 Biometric Methods in the Health Science I.

2 Credits, Faculty Member in charge: Gloria Caldito, Ph.D., Department of Biometry. Three hours of lecture per week. General introduction to descriptive and inferential statistics: The role of biometry in the health sciences, techniques and principles for summarizing data, estimation, hypothesis-testing and decision-making. Examples and problems from the health sciences are used.

222 Biometric Methods in Health Sciences II. 2 Credits,

Faculty Member in charge: Gloria Caldito, Ph.D., Department of Biometry. Three hours of lecture per week. Continuation of 221. Additional biometric techniques in health sciences: Hypothesis testing via the general-linear model, including analysis of variance and linear regression, methods of correlation-analysis, and multiple-regression techniques. Non-parametric techniques and curve fitting are also covered. Examples and problems from the health sciences are used.

IDSP 111 Proteins, Enzymes and Generation of

Metabolic Energy. 2 Credits, Faculty Member in charge: Brent Reed, Ph.D., Department of Biochemistry and Molecular Biology.

This course provides an introduction to the basic biochemical properties of amino acids and proteins, a discussion of protein assembly and folding into the three dimensional structures required for function and an introduction to basic principles of enzyme kinetics, examples of enzyme active site structure and mechanism of action. This is followed by a discussion of the important biochemical processes and enzymes that cells utilize to generate metabolic energy. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 112 Metabolism/Genetics. 2 Credits,

Faculty Member in charge: Brent Reed, Ph.D., Department of Biochemistry and Molecular Biology. Selected features of the metabolism of carbohydrates, lipids, amino acids and nucleotides are presented with discussions of the important mechanisms cells utilize to regulate these processes. The course concludes with a basic introduction to prokaryotic and eukaryotic genetics, a discussion of model systems and their use in understanding basic cellular processes. Course is offered: Fall, Annually. Prerequisites for course: IDSP 111.

IDSP 113 Molecular Biology. 2 Credits,

Faculty Member in charge: Kenneth M. Peterson, Ph.D., Department of Microbiology and Immunology. An introduction to the molecular biology of prokaryotic / eucaryotic cells. Emphasis is placed on the understanding in molecular detail of the basic functions of living cells. The first half of the course will give the student a fundamental understanding of the biochemistry/molecular biology of nucleic acids and the basic biological functions involving DNA; replication, repair, recombination and transposition. The second half of the course deals with mechanisms of transcriptional control, protein synthesis, genomics and proteomics. Attention is also focused on current techniques of molecular biology and recombinant DNA technology. Lectures, problem sets and discussion of the current literature will comprise the course. Course is offered: Fall, Annually. Prerequisites for course: IDSP 111,112.

IDSP 114 Gene Expression and the Cell Cycle.

2 Credits, Faculty Member in charge: David S. Gross, Ph.D., Department of Biochemistry and Molecular Biology. An introduction to the mechanisms underlying eukaryotic gene expression and cell cycle control. In the first half of the course, the synthesis and processing of RNA, the role of gene-specific transcription factors, chromatin structure and function, translational mechanisms, and model systems of eukaryotic gene expression will be discussed. The second half of the course will focus on the cell biology of the nucleus, mechanisms of cell division and cell cycle control, mitosis and cytokinesis, ubiquitin-mediated proteolysis, apoptotic mechanisms, and the role of ion channels/membrane potential. Lectures and discussions of the current literature. Course is offered: Spring, Annually. Prerequisites for course: IDSP 111,112, 113.

IDSP 115 Cell Biology. 2 Credits,

Faculty Member in charge: Andrew D. Yurochko, Ph.D., Department of Microbiology and Immunology. A modern, comprehensive course concerning the regulation of cellular signaling, the cytoskeleton and adhesion-mediated processes in eukaryotic cells. Emphasis will be placed on the molecular mechanisms involved and approaches used to understand receptor-mediated signaling and signal transduction pathways. Further emphasis will be placed on the regulation of the cytoskeleton, the mechanisms involved in protein and membrane trafficking, endocytosis, the secretory system and adhesion-mediated biology. Attention is also focused on the current molecular and cellular biological techniques used today in the investigation of these important cellular processes. Course is offered: Fall, Annually. Prerequisites for course: IDSP 111, 112, 113, 114.

IDSP 116 Methods in Biomedical Sciences:**Biochemical and Molecular Methods. 1 Credit,**

Faculty Member in charge: Lucy Robinson, Ph.D., Department of Biochemistry and Molecular Biology. The principles and application of common methods used for detection and analysis of macromolecular structure, function, and interaction will be discussed. This course covers biochemical methods of separation and detection of macromolecules as well as molecular analysis. Three hours of introductory biostatistics are also included. The goals of the course are: to develop an understanding of basic methods applied to the study of proteins and nucleic acids; to become familiar with the instrumentation used for these methods- familiar in the sense that students should be aware what instrumentation is required and have a basic idea how it is used; and to become aware of the ways that these methods and techniques are applied to study of macromolecules, i.e., have some idea what methods can/should be used to study a particular problem. There will be some form of out of class work for most lectures, including problems, literature reviews, and visits to core facilities and major equipment and use of some equipment. There will be one exam at the end of the course. Course is offered: Fall, Annually. Prerequisites for course: to be taken concurrently with IDSP 111, 112.

IDSP 117 Methods in Biomedical Sciences:**Biostatistics and Recombinant DNA I. 1 Credit,**

Faculty member in charge: Kenneth Peterson, Ph.D., Department of Microbiology and Immunology. Goals are the same as for IDSP 116. This course covers biostatistical analysis of data (continuing from IDSP 116) an recombinant DNA methods including cloning and gene expression, DNA sequencing, PCR, mutagenesis and nucleic acid and protein labeling. There will be one exam at the end of the course. Course is offered: Fall through Spring, Annually. Prerequisites for course: to be taken concurrently with IDSP 112, 113.

IDSP 118 Methods in Biomedical Sciences:**Recombinant DNA II and Cell Biology. 1 Credit,**

Faculty member in charge: James Cardelli, Ph.D., Department of Microbiology and Immunology. Goals are the same as for IDSP 116. This course covers analysis of nucleic acids and proteins, including interaction detection methods, genomics and proteomics and also covers direct observation methods of analysis and immunological methods, and principles and application of centrifugation methods for subcellular fractionation. There will be one exam at the end of the course. Course is offered: Spring, Annually. Prerequisites for course: to be taken concurrently with IDSP 114, 115.

IDSP 211 Foundations of Biomedical Sciences I

– **General Principles. 1 Credit,** Faculty member in charge: Kenneth McMartin, Ph.D., Department of Pharmacology and Therapeutics. An integrative introduction to cell physiology/anatomy and to the general principles of pharmacology. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 212 Foundations of Biomedical Sciences I

– **Cardiovascular System. 2 Credits,** Faculty member in charge: Steven Alexander, Ph.D., Department of Molecular and Cellular Physiology. An integrative approach to the physiology, anatomy, histology and pharmacology of the cardiovascular system. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 213 Foundations of Biomedical Sciences I

– **The Renal System. 1 Credit,** Faculty member in charge: Tomas Welbourne, Ph.D., Department of Molecular and Cellular Physiology. An integrative approach to understanding the kidney's role in maintaining homeostasis. Emphasis will be on global regulation of salt, water and acid/base balance seen from a traditional as well as molecular perspective. Where available "knockout" animals and functional expression analyses are incorporated. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 214 Foundations of Biomedical Sciences I

– **Respiratory System. 1 Credit,** Faculty member in charge: Ronald Korhuis, Ph.D., Department of Molecular and Cellular Physiology. In integrative course covering the physiology, anatomy/histology and pharmacology of the respiratory system. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 215 Foundations of Biomedical Sciences I.

5 Credits, Faculty Member in charge: Ronald J. Korhuis, Ph.D., Department of Molecular and Cellular Physiology. An integrative course covering the physiology, anatomy/histology and pharmacology of the cardiovascular, renal and respiratory systems together with an introduction to general principles. Contains IDSP 211, 212, 213 and 214. Course is offered: Fall, Annually. Prerequisites for course: None.

IDSP 216 Foundations of Biomedical Sciences II

– **Gastrointestinal System. 1 Credit,** Faculty member in charge: Matthew Grisham, Ph.D., Department of Molecular and Cellular Physiology. Integrative course in the anatomy, physiology and pharmacology of the gastrointestinal tract. Course is offered: Spring, Annually. Prerequisites for course: None.

IDSP 217 Foundations of Biomedical Sciences II

– **Endocrine System. 1 Credit**, Faculty member in charge: Nancy J. Leidenheimer, Ph.D., Department of Pharmacology and Therapeutics. An integrative course covering the physiology, anatomy, histology and pharmacology of the endocrine system. Course is offered: Spring, Annually. Prerequisites for course: None.

IDSP 218 Foundations of Biomedical Sciences II

– **Nervous System. 2 Credits**, Faculty member in charge: David Knight, Ph.D., Department of Cellular Biology and Anatomy. Integrative anatomical, physiological and pharmacological examination of the nervous system. Course is offered: Spring, Annually. Prerequisites for course: None.

IDSP 219 Foundations of Biomedical Sciences II

– **Inflammation, Infection and Cancer. 1 Credit**, Faculty member in charge: Stephen Pruett, Ph.D., Department of Cellular Biology and Anatomy. An integrative approach to the anatomy, histology, physiology and pharmacology of inflammation and immunity to include discussion of antimicrobial and anti-cancer therapy. Course is offered: Spring, Annually. Prerequisites for course: None.

IDSP 220 Foundations of Biomedical Sciences II.

5 Credits, Faculty Member in charge: Nancy J. Leidenheimer, Ph.D., Department of Pharmacology and Therapeutics. An integrative course covering the physiology, anatomy/histology and pharmacology of the gastrointestinal, endocrine, nervous and immune systems. Consists of IDSP 216, 217, 218 and 219. Course is offered: Spring, Annually. Prerequisites for course: Foundations of Biomedical Sciences I.

FACULTY ROSTER

AAMODT, ERIC J. - Ph.D., Vanderbilt University, 1984
Associate Professor of Biochemistry and Molecular Biology
ALEXANDER, J. STEVEN - Ph.D., Boston University, 1989
Associate Professor of Molecular and Cellular Physiology
AW, TAK YEE - Ph.D., Otago University, New Zealand, 1981
Professor of Molecular & Cellular Physiology
BATTARBEE, HAROLD D. - Ph.D., Baylor College of Medicine, 1970
Professor of Molecular and Cellular Physiology
BEAL, JOHN A., JR. - Ph.D., University of Cincinnati, 1971
Professor of Cellular Biology and Anatomy
BERG, RODNEY D. - Ph.D., University of Texas, 1973
Professor of Microbiology and Immunology
BRADLEY, RONALD J. - Ph.D., The University of Edinburgh, Scotland, 1967
Professor of Psychiatry and Pharmacology and Therapeutics
CARDELLI, JAMES A. - Ph.D., University of Wisconsin, 1977
Professor of Microbiology and Immunology
CARDEN, DONNA - M.D., Medical College of Ohio, 1979
Associate Professor of Medicine and Cellular and Molecular Physiology
CHERVENAK, ROBERT P. - Ph.D., University of Tennessee, 1980
Professor of Microbiology and Immunology
DAVIS, J. NATHAN - Ph.D., University of Texas, Austin, 1991
Associate Professor of Biochemistry and Molecular Biology
DeBENEDETTI, ARRIGO - Ph.D., SUNY Albany, 1985
Assistant Professor of Biochemistry and Molecular Biology
DUGAS, TAMMY R. - Ph.D., Louisiana State University A & M, 1996
Assistant Professor of Pharmacology and Therapeutics
DUNN, ADRIAN J. - Ph.D., University of Cambridge, England, 1968
Professor of Pharmacology and Therapeutics
DWYER, DONARD S. - Ph.D., University of Alabama (Birmingham), 1980
Associate Professor of Psychiatry and Pharmacology and Therapeutics
FEELISCH, MARTIN - Ph.D., Heinrich-Heine-University, Dusseldorf, Germany, 1988
Professor of Molecular and Cellular Physiology
FIRST, ERIC A. - Ph.D., University of California, San Diego, 1987
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FUSELER, JOHN W. - Ph.D., University of Pennsylvania, 1973
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GHAFOURIFAR, PEDRAM - Pharm.D., Ph.D., Tehran University, Iran 1996
Assistant Professor of Pharmacology and Therapeutics
GILLELAND, HARRY E., JR. - Ph.D., University of Georgia, 1973
Professor of Microbiology and Immunology
GLASS, JONATHAN - M.D., Harvard University, 1966
Professor of Medicine and Cellular Biology and Anatomy
GOEDERS, NICHOLAS E. - Ph.D., LSU Medical Center School of Graduate Studies, Shreveport 1984
Professor of Pharmacology and Therapeutics and Psychiatry
GRANGER, D. NEIL - Ph.D., University of Mississippi, 1977
Professor of Molecular and Cellular Physiology
GRIMES, SIDNEY R., JR. - Ph.D., University of North Carolina, 1973
Research Professor of Biochemistry and Molecular Biology
GRISHAM, MATTHEW B. - Ph.D., Texas Tech University, Health Sciences Center, 1982
Professor of Molecular and Cellular Physiology
GROSS, DAVID S. - Ph.D., University of Colorado, 1981
Professor of Biochemistry and Molecular Biology
HAMILTON, KATHRYN A. - Ph.D., University of California, Santa Barbara, 1980
Associate Professor of Cellular Biology and Anatomy
HARRISON, LYNN - Ph.D., University of Manchester, England, 1991
Assistant Professor of Molecular and Cellular Physiology
HERRERA, GUILLERMO - M.D., Medical School of Puerto Rico, 1975
Professor of Pathology and Cellular Biology and Anatomy
JAIN, SUSHIL K. - Ph.D., Institute of Medical Education and Research, 1976
Professor of Biochemistry and Molecular Biology
JAMISON, RICHARD M. - Ph.D., Baylor University, 1966
Professor of Pediatrics and Microbiology and Immunology
JENNINGS, STEPHEN R. - Ph.D., University of Melbourne, Australia 1982
Associate Professor of Microbiology and Immunology
KABLINGER, ANITA S. - M.D., The Chicago Medical School, 1993
Associate Professor of Psychiatry and Pharmacology and Therapeutics
KALOGERIS, THEODORE - Ph.D., University of California at Davis, 1988
Assistant Professor of Surgery and Molecular and Cellular Physiology
KEPLER, DANIEL - Ph.D., University Pierre and Marie Curie, Paris, France 1988
Assistant Professor of Cellular Biology and Anatomy
KLIMSTRA, WILLIAM B. - Ph.D., University of North Carolina, 1998
Assistant Professor of Microbiology and Immunology
KNIGHT, DAVID S. - Ph.D., Tulane University, 1976
Associate Professor of Cellular Biology and Anatomy
KORTHUIS, RONALD J. - Ph.D., Michigan State University, 1983
Professor of Molecular and Cellular Physiology
LEFER, DAVID - Ph.D., Wake Forest University, 1991
Associate Professor of Molecular and Cellular Physiology
LEIDENHEIMER, NANCY J. - Ph.D., Kent State University, 1988
Associate Professor of Pharmacology and Therapeutics
MARINO, ANDREW A. - Ph.D., Syracuse University, 1968
J.D., Syracuse University, 1974
Professor of Cellular Biology and Anatomy, and Orthopaedic Surgery
MATHIAS, P. NEAL, - Ph. D., University of Oxford, England, 1993
Assistant Professor of Biochemistry and Molecular Biology
MATHIS, J. MICHAEL - Ph.D., University of Texas Southwestern Medical Center, 1987
Associate Professor of Cellular Biology and Anatomy and Obstetrics and Gynecology
MC CARTHY, KEVIN - Ph.D., Albany Medical College, 1987
Associate Professor of Cellular Biology and Anatomy and Pathology
MC MARTIN, KENNETH E. - Ph.D., University of Iowa, 1977
Professor of Pharmacology and Therapeutics
MEYERS, SHARI - Ph.D., University of Texas, Austin, 1991
Associate Professor of Biochemistry and Molecular Biology
MUGGERIDGE, MARTIN I. - Ph.D., National Institute for Medical Research, England, 1983
Associate Professor of Microbiology and Immunology
O'CALLAGHAN, DENNIS J. - Ph.D., University of Mississippi Medical Center, 1968
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PARISH, ROY C., Jr. - PharmD., University of Florida, 1985
Associate Professor of Pharmacology and Therapeutics

PENNY, JOE E. - Ph.D., University of Oklahoma, 1973
Associate Professor of Cellular Biology and Anatomy

PETERSON, KENNETH M. - Ph.D., University of Texas, Health Science Center at San Antonio, 1984
Associate Professor of Microbiology and Immunology

PRUETT, STEPHEN B. - Ph.D., LSU Medical Center School of Graduate Studies in Shreveport, 1980
Professor of Cell Biology and Anatomy

QIAO, XIAOXI - Ph.D., Baylor College of Medicine, Houston, TX, 1993
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REED, BRENT - Ph.D., University of Utah, Salt Lake City, 1976
Associate Professor of Biochemistry and Molecular Biology

RHOADS, ROBERT E. - Ph.D., George Washington University, 1971
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ROBINSON, LUCY - Ph.D., University of Pennsylvania, 1989
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ROERIG, SANDRA C. - Ph.D., Medical College of Wisconsin, 1988
Professor of Pharmacology and Therapeutics

RYMAN, KATHERINE D. - Ph.D., University of Surrey, U.K., 1995.
Assistant Professor of Microbiology and Immunology

SEELIG, LEONARD L., JR. - Ph.D., University of Texas, 1975
Professor of Cellular Biology and Anatomy

SIXBEY, JOHN - M.D., University of Arkansas for Medical Sciences, 1977
Professor of Microbiology and Immunology

SMITH, ROBERT L. - Ph.D., University of Tennessee, 1966
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SPECIAN, ROBERT D. - Ph.D., Tulane University, 1980
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STACZEK, JOHN - Ph.D., Rensselaer Polytechnic Institute, 1976
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STEVEN, WILLIAM M. - Ph.D., University of North Dakota, 1970
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VAN DER HEYDE, HENRI - Ph.D., University of Alabama at Birmingham, 1993
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WELBOURNE, TOMAS C. - Ph.D., University of Tennessee, 1968
Professor of Molecular and Cellular Physiology

WILLIAMS, BRIANA JILL - Ph.D., Emory University, 1993
Associate Professor of Biochemistry and Molecular Biology

WITT, STEPHAN N. - Ph.D., California Institute of Technology, 1988
Associate Professor of Biochemistry and Molecular Biology

WOLCOTT, ROBERT M. - Ph.D., Vanderbilt University, 1969
Professor of Microbiology and Immunology

YUROCHKO, ANDREW D. - Ph.D., Virginia Polytechnic Institute and State University, 1990
Assistant Professor of Microbiology and Immunology

ZHANG, JOHN H. - Ph.D., M.D., Chongqing University of Medical Sciences, China, 1986
Professor of Neurosurgery and Molecular and Cellular Physiology and Pharmacology and Therapeutics

AFFILIATE MEMBERS

AAMODT, STEPHANIE – Ph.D., Vanderbilt University, 1984
Associate Professor and Chair of Biological Sciences, LSU-S

BANKS, STEPHEN W. – Ph.D., University of Nottingham, UK, 1982
Associate Professor of Biological Sciences, LSU-S

BRITTON, LYNDIA – Ph.D., Louisiana State University A&M, 1988
Associate Professor of Clinical Laboratory Sciences, School of Allied Health Professions

BURDEN, BEVERLY J. – Ph.D., University of Wisconsin-Madison, 1993
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COPPOLA, DAVID – Ph.D., North Carolina State University, 1985
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JUDD, DEBRA - Ph.D., L.O.T.R., University of Southern Mississippi, 1988
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RECAPITULATION OF FACULTY

Below are listed the five Shreveport basic science Departments of the Health Sciences Center in which degrees may be earned through the School of Graduate Studies, and the respective active faculty of each who are members of the graduate faculty, in alphabetical order by rank:

Biochemistry and Molecular Biology

PROFESSOR: Gross; Jain; Rhoads, Tatchell
 ASSOCIATE PROFESSOR: Aamodt; DeBenedetti; Reed; Robinson; Smith; Witt; Williams; Myers; First; Davis
 ASSISTANT PROFESSOR: Mathias
 RESEARCH PROFESSOR: Grimes

Cellular Biology and Anatomy

PROFESSOR: Beal; Glass; Herrera; Marino; Pruett; Seelig
 ASSOCIATE PROFESSOR: Hamilton; Knight; Mathis; McCarthy; Penny; Steven
 ASSISTANT PROFESSOR: Fuseler; Keppler; Qiao

Microbiology and Immunology

PROFESSOR: Berg; Cardelli; Chervenak; Gilleland; Jamison; O'Callaghan; Sixbey; Staczek, Wolcott
 ASSOCIATE PROFESSOR: Jennings; Muggeridge; Peterson
 ASSISTANT PROFESSOR: Klimstra; Ryman; van der Heyde; Yurochko

Molecular and Cellular Physiology

PROFESSOR: Aw; Batterbee; Feelisch; Granger; Grisham; Korthuis; Specian; Welbourne; Zhang
 ASSOCIATE PROFESSOR: Alexander, Carden; Lefer
 ASSISTANT PROFESSOR: Harrison; Kalogeris

Pharmacology and Therapeutics

PROFESSOR: Bradley; Dunn; Goeders; McMartin; Roerig; Zhang
 ASSOCIATE PROFESSOR: Dwyer; Kablinger; Leidenheimer; Parish
 ASSISTANT PROFESSOR: Dugas; Ghafourifar