PRE-PROFESSIONAL GRADUATE CERTIFICATE PROGRAM

UT HEALTH SAN ANTONIO

Pre-Professional
Graduate Certificate Program

Post-baccalaureate program

Cell Systems & Anatomy

2021-2022

PROGRAM POLICIES & GUIDELINES

UT Health
San Antonio

For information, contact:

Pre-Professional Graduate Certificate Program
Cell Systems & Anatomy, MC 7762
UT Health San Antonio
7703 Floyd Curl Drive
San Antonio, TX 78229
Tel: (210) 567 5075
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Website: https://lsom.uthscsa.edu/dcsa/education/postbac/

Use the QR code below to access the website:

1. Program Goals

The **Pre-Professional Graduate Certificate Program** is a one-year full-time post-baccalaureate program designed to offer qualified individuals with baccalaureate degrees and aspiring to be admitted to medical school an opportunity to enhance their academic credentials. The program is intended for two types of students: those that have a non-pre-med, science undergraduate degree who wish to switch focus from a previous major and transition to medical school (career-changers) and/or those with a pre-med background who require grade and/or Medical College Admission Test® (MCAT®) enhancement of their competitiveness for admission to these schools (career-enhancers). The program allows qualified individuals to start a *gap year program* immediately after spring term graduation and, upon completion, become ready for applying to medical or osteopathic schools as desired the following year.

The program is designed to strengthen the biomedical knowledge of participants via a structured core curriculum that includes human gross and microscopic anatomy, biochemistry, cell biology, microbiology, physiology, and pharmacology, develop professionalism skills, and improve qualifications for future application to, and competitiveness for, admission to medical school. Also, because of the similarity of the coursework in this proposed program to the preclinical coursework in medical school, the program is intended to enhance performance in medical school once students gain admission and enroll. Courses are taught by the same outstanding faculty who teach medical, dental and other health professional students. Because students in the program take classes together and belong to a single cohort, camaraderie is encouraged as a stepping stone to working as part of a medical team.

The program also provides extensive academic support to students, including access to faculty advisors and mentors who offer personalized guidance for improving medical school applications.

2. Admission and Application Documentation Requirements

Admission to the Pre-Professional program will be selective, and applicants' prior records will be evaluated in the light of the program's requirements. Applicants must hold U.S. citizenship or have U.S. permanent resident status. All applicants must submit the following information for their application to be considered by the program admissions committee:

- A completed online application.
- Transcripts from all colleges and universities attended. At the time of matriculation

into the program, applicants must have a baccalaureate degree in a relevant discipline (e.g. chemistry, physics, psychology, biomedical engineering), one year each of General Biology, General Chemistry, Organic Chemistry and Physics, with accompanying labs, with a grade "B" or better, and a minimum overall grade point average (GPA) of 3.0 on a 4.0 scale for the last 60 hours of major coursework completed. College seniors may apply and be offered admission to the program before they have earned their degrees. However, a final transcript must be submitted to the program upon graduation before any student can matriculate into the program. Unofficial PDF copies of transcripts can be submitted with the application; however, official copies are required for registration in the program. Transcripts from institutions outside the United States must be submitted in the original language and must be accompanied by an acceptable evaluation agency translation for each course from NACES® members.

- Official Medical College Admission Test® (MCAT®) scores, taken within 3 years preceding submission of an application to the program. While no minimum MCAT score is prescribed, scores of 500 or above are considered to be competitive.
- A curriculum vitae/resumé documenting educational background, volunteering, and work experience.
- A Statement of Purpose (Personal Statement) (1-2 pages) submitted with the on-line application that includes a brief description of the applicant's background, motivation for becoming a physician, and how this program fits into the applicant's career objectives. Any relevant past activities such as volunteering or shadowing and their effect on the applicant may be mentioned in this statement.
- Three essays as stated on the online application form, each up to 2500 characters with spaces.
- Three Letters of Recommendation from science or math college-level faculty qualified to judge the student's academic and professional potential and who are knowledgeable about the quality of the applicant's scholarly activities and/or work experiences. The letters must attest to the applicant's readiness for graduate-level studies. Recommenders must have taught the applicant for at least one semester-long didactic undergraduate/graduate-level course. All letters should be uploaded directly by the recommenders using the link sent by the on-line application system (EMBARK) upon student request before the deadline.

In addition, competitive applicants will have demonstrated motivation to apply to and attend medical school evidenced by past activities, e.g. volunteering or shadowing in a health-care-related setting. The applicant must be willing to submit additional information or other materials about themselves if requested by the program.

On a case-by-case basis, specific admission requirements may be waived by the Graduate Faculty Council.

Official test scores, transcripts, and foreign transcript translations, mentioned above, should be sent to:

Office of the Registrar
UT Health San Antonio
7703 Floyd Curl Drive, MC 7702
San Antonio, Texas 78229-3900
registrars@uthscsa.edu
Phone: 210-567-2667
gsprospect@uthscsa.edu

All of the above documentation must be received for consideration of the application by the admissions committee. The priority date for submission of the application is February 15; the final application deadline date is May 1. It is the responsibility of the applicants to ensure timely submission of documentation during the application process, and, after acceptance, to the Registrar's office.

3. Application Review

After receipt of the application and all documentation, the admissions committee will review all applicants and interview selected applicants. Based on admissions committte recommendations, the most highly qualified applicants will be recommended for admission to the Dean of the Graduate School of Biomedical Sciences. The Dean's office will send out the acceptance letters after performing required background checks.

4. Curriculum

The Pre-Professional program follows a structured cohort model, with each cohort matriculating and taking all required classes together. Students are required to attend 12 twice-weekly, instructor-led, core MCAT prep sessions of 3 hours each from July-August, offered by Kaplan and organized by the program, and complete a practice test each weekend.

Students will take courses in the Fall and Spring semesters as outlined in the table below. Courses are not repeatable for grade improvement.

Course Prefix and Number	Required Courses	SCH
SUMMER	**MCAT Prep**	
FALL TERM		
PHYL 5028	Fundamentals of Physiology	2
CSAT 5045	Pre-medical Biochemistry	2.5
CSAT 6077	Eukaryotic Cell Biology	2
CSAT 5041	Pre-medical Neuro-anatomy	2
MICR 5031	Pathogenic Microbiology	3
SPRING TERM		
CSAT 5060	Human Histology	3
PHAR 6021	Pharmacological Basis of Therapeutics	1
CSAT 5022	Inter-Professional Human Gross Anatomy	5.5

Note: SCH = Semester Credit Hours.

Description of Required (Core) Courses

Fundamentals of Physiology *2.0 SCH (**PHYL 5028**) Fall Semester*

This course is designed to provide students with a basic understanding of mammalian physiology. Students will be exposed to overarching concepts and contemporary perspectives regarding the normal function (physiology) of various organs and systems of the human body. The course will focus on fundamental functions of the cardiovascular, renal, respiratory, gastrointestinal and endocrine systems and how dysfunction in any of these can lead to human diseases e.g. hypertension resulting from cardiovascular and/or renal dysfunction

Pre-medical Biochemistry *2.5 SCH* (***CSAT 5045***) *Fall Semester*

This course will introduce students to fundamental concepts in biochemistry and, importantly, discuss the application of biochemical principles in the clinical context. Students will learn about the structure of DNA, its various conformations and processes involved in synthesis, repair and recombination, the structure of RNA, transcription and processing, translation of proteins, post-translational modification, enzyme kinetics and controls, processes involved in oxidative metabolism including tricarboxylic acid cycle and oxidative phosphorylation, processes involved in carbon, lipid, amino acid, purine and pyrimidine metabolism, the biochemistry of polypeptide and

steroid hormones, the processes involved in iron and heme metabolism, the structure of biological membranes, and the structure and function of the cytochromes P450.

Eukaryotic Cell Biology *2.0 SCH (**CSAT 6077**) Fall Semester*

This didactic course introduces students to the fundamentals of the structure and function of human cells at the microscopic and molecular levels, familiarize the student with current techniques used to manipulate cells, describe the higher order integration of cells to tissues and organs and thereby the development of multicellular organisms.

Pre-medical Neuroanatomy *2.0 SCH (**CSAT 5041**) Fall Semester*

This course provides students with a practical working knowledge of the structure of both peripheral and central nervous systems. Emphasis will be on organization of the human brain, although the brains of other species may also be included for comparison if appropriate for aspecific brain region. The course will look at each of the individual components of the central nervous system in some depth but will also emphasize the complex integration of these various components into a functional organ system. The course will be didactic with digital images, models, and wet specimens included.

Pathogenic Microbiology *3.0 SCH (**MICR 5031**) Fall Semester*

This course integrates different disciplines (immunology, cell biology, genetics, biochemistry, molecular biology, physiology, and medical microbiology) with a central theme focused on molecular mechanisms of microbial pathogenesis in human. Specifically, it introduces students to basic microbial structure, physiology, genetics and mechanisms by which bacterial, fungal and parasitic pathogens interact with the immune system and cause disease.

Human Histology *3.0 SCH (**CSAT 5060**) Spring Semester*

This course will examine the microscopic architecture of the human body, beginning with tissues, and then organs and their higher level organization into systems performing specific functions. Topics covered will include basic tissues, the integumentary, cardiovascular, the lymphatic, respiratory, gastrointestinal, endocrine, urinary and male and female reproductive systems. The goal of this course is to enable students acquire knowledge of normal histological structure of organs and organ systems using light and electron microscopy, thereby providing a strong basis for the sound understanding of cell and tissue morphology in health and disease.

Pharmacological Basis of Therapeutics *1.0 SCH (**PHAR 6021**) Spring Semester*

Pharmacological Basis of Therapeutics is a 1.0 credit hour course that provides students with an understanding of how pharmacological knowledge is applied in rational therapeutics. The course begins with principles of drug effect and disposition that apply to all medications, so that student will be able to develop an understanding of the pharmacological basis of therapeutics. Using specific disease states as examples, the course will address major classes of pharmacological agents affecting the cardiovascular and the central nervous systems. Other pharmacological areas covered include medications affecting the autonomic nervous system and treating cancer. Classical (adverse drug reactions) and more recent (pharmacogenomics) pharmacological topics will also be covered.

Inter-Professional Human Gross Anatomy 5.5 SCH (CSAT 5022) *Spring Semester*

This comprehensive lecture- and lab-based course teaches structural and functional anatomy of the normal human body. Lectures will serve as introductory information for the laboratory dissections to follow and to clarify the interactions of the various anatomical components to accomplish the function of the body. The course will cover central and peripheral nervous systems, vertebral column and back, the upper and lower extremities, head and neck, body wall, thorax, abdomen, pelvis, and perineum. Special emphasis will be placed on the laboratory experience in which the learner will perform a detailed dissection of the entire human body in order to achieve an understanding of the three-dimensional relationships and thus the interactive function of the body. The cadaveric dissections will enable students understand the anatomical basis of many human diseases and dysfunction in organ systems and their applications to clinical practice. The dissections will be supplemented by the study of prosected specimens where possible, models skeletons, and other demonstration materials such as plastinated models.

5. Academic Advising and Workshops

Besides regular course work and MCAT preparation, students will be provided individualized advising, information on medical volunteering, career guidance and counseling, assistance with resume preparation and essay-writing, and mock medical school interviews. Practicing health care professionals will meet with the students to discuss their specialities. Finally, students will receive guidance for the medical school application process, although the program is not guaranteeing an interview or admission to any participant in the program. One-on-one advisement will be provided to all students in the program to monitor progress and encourage timely completion of the certificate program. Students enrolled in the program will also be encouraged to attend recruitment events offered on campus by the Long School of Medicine

and workshops/seminars offered by the Graduate School on topics relevant to aspiring healthcare professionals.

6. Certificate requirements and completion of the program

Students must satisfactorily complete all 21 semester credit hours (SCH) of required coursework at UT Health San Antonio and earn a cumulative GPA of 3.0 (grade of 'B') or above to earn a certificate; there are no electives and no course will be exempted. Students earning less than a grade of 'B' in the first semester may be recommended for dismissal from the program to the Dean of the Graduate School of Biomedical Sciences (GSBS) by the POC unless an appeal by the student is approved by the POC. If approved, the student will be placed on academic probation by the GSBS. While on probation, a student must maintain a "B" average in all courses in which he/she is enrolled. Please visit GSBS and University catalogs for academic policies.

There will be no remediation for any course.While it may be possible for a student to retake a course as a non-degree seeking student, he/she will not be eligible for the graduate certificate as they would no longer be a part of the Pre-Professional Program.

When all the coursework and MCAT prep has been satisfactorily completed, the student will need to submit a Request for Certification form to the POC for conferral in June as outlined by the Graduate School of Biomedical Sciences. Once approved, the Chair of the POC will notify GSBS for granting of the certificate.

7. Program Oversight Committee (POC)

The Pre-Professional program will be overseen by the POC, chaired by the Program Director and consisting of the following members of the faculty who will all be voting members except otherwise specified:

- Program Director - appointed by the Chair of Cell Systems & Anatomy in consultation with the Dean of the Joe R. and Teresa Lozano Long School of Medicine (LSOM)
- Program Co-Director - appointed by the Chair of Cell Systems & Anatomy in consultation with the Dean of the LSOM
- Representative of the LSOM Office of Undergraduate Medical Education (UME), e.g. Module Director or Discipline Coordinator in the UME (CIRCLE) Curriculum - to provide expertise on medical school curricular content and evolving nature of the curriculum
- Current (or immediate past) member of the LSOM Admissions Committee - who is familiar with the population of prospective applicants. A current member of the Admissions Committee

will serve on an ad-hoc basis and be recused from voting

- Two faculty members drawn from the Program Faculty (each from a different basic science department) each of who serves no more than two consecutive 2-year terms before rotating off)
- One faculty member from a clinical department in the LSOM (nominated by the Chair of Cell Systems & Anatomy in consultation with the Dean of the LSOM)
- Chair, Cell Systems & Anatomy (ex-officio, non-voting member)

The POC will review program evaluation data and reports and use these to improve the program. The POC will also serve as the de facto Curriculum Committee for the program and be responsible for monitoring the academic progress of all participants as well as other extracurricular programmatic activities. The POC will handle all grade appeals and recommend dismissal of a student who obtains less than a grade of 'B' in any course to the Dean of the Graduate School of Biomedical Sciences. Policies related to scholastic dishonesty are as specified in the University catalog. Such activities may lead to dismissal from the program.

The POC will meet regularly every month, with specially called meetings as needed. The Program Director will represent the program on the Graduate Faculty Council as a voting member. The LSOM UME Office will be advisory to the Pre-Professional program. All members will be counted in determining presence or absence of a quorum at meetings; a quorum is defined as the presence of four of seven voting members at the meeting. Where necessary, decisions will be made by a simple majority vote of all members of the POC.

8. Student Communication

Programmatic announcements and information will be conveyed to the student via their University e-mail address. Therefore, it is the responsibility of students to check their University e-mail frequently and use it to communicate with CSA faculty/POC.

APPENDIX:

A. Program Oversight Committee
B. Certification Request Form

APPENDIX A: PROGRAM OVERSIGHT COMMITTEE

Program Director
Program Co-Director
Undergraduate Medical Education Curriculum Representative
LSOM Admissions Committee Representative
Basic Science Program Faculty (2)
Clinical Department Program Faculty
Chair, Cell Systems & Anatomy (ex-officio, non-voting)

PRE-PROFESSIONAL PROGRAM
Certification Request Form

Student Name_____

last name *first name* *middle initial*

Student ID#:_____

Matriculation Date:_____

Date of Request:_____

Courses Completed towards the Pre-Professional Program Certificate

Course #	Course	Semester Credit Hours (SCH)	Semester & Year of Course Completion
PHYL 5028	Fundamentals of Physiology	2.0	
MICR 5031	Pathogenic Microbiology	3.0	
CSAT 6077	Eucaryotic Cell Biology	2.0	
CSAT 5045	Premedical Biochemistry	2.5	
CSAT 5041	Premedical Neuroanatomy	2.0	
CSAT 5060	Human Histology	3.0	
PHAR 6021	Pharmacological Basis of Therapeutics	1.0	
CSAT 5022	Inter-Professional Human Gross Anatomy	5.5	

Student Signature (confirming all information listed is correct): _____ **Date**_____

Academic Program Coordinator Signature_____ **Date**_____

Program Director Signature_____ **Date**_____