



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™
EL PASO

Graduate School of Biomedical Sciences

2020-2021 Catalog

**Texas Tech University Health Sciences Center El Paso
Graduate School of Biomedical Sciences**

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Administration



Rajkumar Lakshmanaswamy, Ph.D., Dean



Jazmin Carrera-Blas, M.B.A., Director



Michele Grajeda Ponce, M.B.A., Lead Analyst



Jacqueline Espino, Analyst II

Preface

The purpose of this publication is to assemble a set of guidelines and requirements that all students are subject to at the time of admission into the Texas Tech University Health Sciences Center El Paso (TTUHSC El Paso) Graduate School of Biomedical Sciences (GSBS).

The TTUHSC El Paso GSBS reserves the right to make changes to this catalog as necessary, with or without notice. Every effort will be made to notify all faculty and students when changes are made.

The TTUHSC El Paso GSBS reserves the right to institute, after due notice and during the course of a student's work toward a degree or certificate, any new ruling that may be necessary for the good of the university and therefore, ultimately, of recipients of its degrees and certificates. Normally, a student may graduate under the provisions of the catalog in effect at the time of enrollment in the TTUHSC El Paso GSBS.

The TTUHSC El Paso GSBS also reserves the right to make changes to courses as needed. The right to make changes to tuition and fees is reserved as regulated by the Board of Regents.

All students are subject to the requirements listed in the TTUHSC El Paso Institutional Student Handbook Code of Professional and Academic Conduct, the Graduate School of Biomedical Sciences Student Handbook, and the Graduate School of Biomedical Sciences Student Handbook.

Any student seeking accommodations on the basis of disability should contact the [Office of Academic and Disability Support](#).

Statement of Accreditation

Texas Tech University Health Sciences Center El Paso is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, and doctoral degrees. Contact the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Texas Tech University Health Sciences Center El Paso.

Mission Statement

The mission of TTUHSC El Paso is to improve the lives of people in our State and our community by focusing on the unique health care needs of socially and culturally diverse border populations through excellence in integrated education, research, and patient care. In order to support the institutional mission, the GSBS provides superior graduate education as well as leadership by increasing knowledge and understanding through scholarship and research.

The **mission of the TTUHSC El Paso GSBS** is to educate the next generation of scientists and health-related professionals by providing a dynamic research environment oriented to satisfy the learning needs of a multicultural group of students by fostering creativity and discovery.

The faculty and staff of the GSBS are committed to align with the [TTUHSC El Paso strategic goals](#) including:

- Goal 1. Excellence in Academics
- Goal 2. Excellence in Clinical Affairs
- Goal 3. Excellence in Research
- Goal 4. Excellence in Outreach and Engagement
- Goal 5. Excellence in Stewardship
- Goal 6. Excellence in Culture

Expected Student Learning Outcomes

GSBS student learning outcomes are described below:

Biomedical Knowledge

Students will understand and demonstrate basic concepts and theories in the fields of Biomedical Sciences.

Biomedical Practices

Students will apply the knowledge and skills to examine and design biomedical research.

Communication and Interpersonal Skills

Students will communicate effectively with peers, professors, and the scientific community through both oral presentations and written discourse.

Professionalism

Students will demonstrate behavior consistent with professional responsibilities of conducting biomedical research.

Academic Programs

The TTUHSC El Paso GSBS offers two programs: a Master of Science (M.S.) in Biomedical Sciences and a Post-Baccalaureate Certificate Program.

M.S. in Biomedical Sciences

The M.S. in Biomedical Sciences is a two year program structured around a core curriculum in biomedical sciences that provides foundational coursework in the areas of biochemistry, cell biology, genetics, laboratory methodology, and biomedical research. Beyond providing the necessary coursework, the program emphasizes on fostering a superior and competitive training environment in diverse state-of-the-art research laboratories where students engage in a mentored research project.

Along with engaging in a mentored research project, during the second year, students have the opportunity to take elective courses where they explore specialized topics, recent advances, and current literature within the biomedical sciences field. Instruction in these areas is provided by expert researchers and educators affiliated with both the Graduate School of Biomedical Sciences (GSBS) and the Paul L. Foster School of Medicine (PLFSOM).

Post-Baccalaureate Certificate Program

The post-baccalaureate certificate program is a one year program intended to meet the supplemental educational needs of professionals. The certificate program encompasses a set of courses that provide the knowledge base and in-depth expertise in the biomedical sciences field. To take any graduate-level course, certificate program applicants must have completed all prerequisite courses (including undergraduate courses). Therefore, applicants interested in the post-baccalaureate certificate program are required to have a bachelor's degree related to the biomedical science field.

Admissions Process

Admission to the GSBS is granted by the dean, upon the recommendation of the admissions committee. Applicants considered for admission must be in good standing with the last school attended.

Even though the admission process encompasses a holistic review; there are three main criteria used to evaluate all applicants for admission:

- **Academic records:** All academic records may be considered.
- **Test scores:** Official Graduate Record Examination (GRE) scores or the Medical College Admission Test (MCAT) scores depending on the program.
- **Individual profile:** Profiles may include recommendations and/or information on the student's research background, motivation, multilingual proficiency, undergraduate institution(s), presentations, portfolios, and the admission interview. The admission committee may also consider work experience, demonstrated commitment to a particular field or study, and community involvement.

All applicants should allow ample time for required support documents to be received and added to the application file. Only students who have completed application packages will be considered for review.

A completed application package consists of the following:

1. **Online application**
 - a. All sections of the online application must be completed and submitted prior to the application closing date.
 - b. The GSBS office reviews all applications for completion.
 - c. Completed applications are reviewed by the admissions committee.

- d. Offers are made in accordance with the committee's recommendation and final approval by the dean.
- e. Any offer of admission made under falsified information will be immediately voided.

Any exceptions to these guidelines are made on a case-by-case basis with support of the admissions committee, and approval by the dean.

2. Official Graduate Record Examination (GRE) scores

- a. To be considered for admission into the M.S. in Biomedical Sciences program, applicants should submit a GRE score report that is no more than five years old.
 - i. Official MCAT scores may be used in lieu of GRE scores upon approval by the dean. Applicants should contact the GSBS office for further information.
- b. All test scores should be sent through the Educational Testing Service.
- c. The GRE Designated Institution (DI) Code for the GSBS is **7452**.
- d. Photocopies or scanned copies of GRE scores will not be accepted.
 - i. Information about the GRE may be obtained at gre.org.

3. Official Medical College Admission Test (MCAT) scores

- a. To be considered for admission into the post-baccalaureate certificate program, applicants should submit an MCAT score report that is no more than five years old.
- b. Applicant should designate the **Texas Tech University Health Sciences Center El Paso** as recipient.
- c. Applicants should provide the GSBS office their **AAMC ID**.
- d. Photocopies or scanned copies of MCAT scores will not be accepted.
 - i. Information about the MCAT may be obtained at aamc.org.

4. Official transcripts

- a. Applicants should have earned a bachelor's degree from a regionally accredited institution in the United States or the equivalent of a U.S. bachelor's degree from a foreign institution, which typically requires **at least 120 U.S. equivalent credit hours**.
- b. Applicants should submit an official transcript from each college or university attended.
- c. All degrees earned must appear on official transcripts.
 - i. Any applicant whose current enrollment prevents them from submitting a final transcript should submit the most recent transcript reflecting all current coursework.
 - ii. Consideration for admission may be granted on the condition that a final official transcript will be provided no later than the first day of classes.
 - iii. Failure to submit a final official transcript before the first day of classes will result in the revocation of the acceptance offer.
- d. Applicants who attended an institution outside the U.S. must provide a course-by-course evaluation of all coursework taken at any degree-granting institution(s) recognized by the country's government/governmental ministry.

- i. Any applicant whose current enrollment prevents them from submitting a final transcript must submit a course-by-course transcript evaluation of all completed coursework.
- ii. Consideration for admission may be granted on the condition that a final official course-by-course evaluation is provided no later than the first day of classes.
- iii. Failure to submit a final official course-by-course evaluation before the first day of classes will result in the revocation of the acceptance offer.
- iv. If the course-by-course evaluation states that an applicant has less than 120 U.S. equivalent credit hours and lacks the equivalent of a U.S. bachelor's degree, then the applicant has the option to seek an alternative evaluation from another TTUHSC El Paso approved evaluation company.

5. Letters of recommendation

- a. A minimum of two letters of recommendation are required.
- b. All letters of recommendation should be submitted either through the online application system or emailed to GSBSEP@ttuhsc.edu.
- c. Emailed letters should be sent directly from the recommender's institutional or work email address.
- d. Letters of recommendation submitted by the applicant will not be accepted unless the original hard copy is submitted in a sealed envelope.

6. Essay

- a. All applicants must submit a written essay through the online application system stating the reason(s) for applying to the program(s).

7. Application fee

- a. A one-time, non-refundable application fee of \$45 is required per application.
 - i. Applicants that participated in the TTUHSC El Paso SABR program and wish to apply to one of our academic programs may be eligible for an application fee waiver at the discretion of the dean.
 - ii. Applicants that participated in the TTUHSC El Paso post-baccalaureate certificate program and wish to apply to the TTUHSC El Paso M.S. in Biomedical Sciences may be eligible for an application fee waiver at the discretion of the dean.
- b. Contact the GSBS office for further information.

In accordance with [Texas Education Code §51.842](#), (b) "An applicant's performance on a standardized test may not be used in the admissions or competitive scholarship process for a graduate or professional program as the sole criterion for consideration of the applicant or as the primary criterion to end consideration of the applicant."

Enrollment

Admission Offer

Once the applicant is recommended for admission and approved by the dean, an email will be sent to the email address on file requesting the applicant to log into the application system and accept the admission offer.

Placement Fee

A one-time, non-refundable \$50 placement fee is required upon admission acceptance that secures the student's seat for matriculation.

Initial Matriculation

Initial matriculation takes place in the fall semester. Failure to register in the term for which admission is granted requires a readmission process. Graduate students are permitted to register at any time beginning the first day of advance registration.

Upon admission, all GSBS students are subject to the requirements listed in the TTUHSC El Paso Institutional Student Handbook: Code of Professional and Academic Conduct, the GSBS Student Handbook, and the GSBS Catalog.

Once the placement fee is received, the GSBS office sends the incoming student the following information:

- Official letter of admission including the mandatory student orientation session date and fall semester start date.
- List of mandatory trainings; such as, Safety Training Education Program for Students (STEPS), Laboratory Safety Trainings, and HIPAA Privacy & Security Training.
- Immunization requirements.

Required Immunizations

In order to protect the health of our community, the [TTUHSC El Paso Institutional Health and Infection Control Program](#) requires all entering students to provide proof of the following, regardless of whether they have had any history of the disease.

- Hepatitis B
- Measles (Rubeola)
- Mumps
- Rubella (German Measles)
- Varicella
- Tuberculosis
- Tetanus/Diphtheria/Pertussis
- Influenza (Annual Flu campaign)

Immunization requirements are based on regulations, guidelines and recommendations available as of November, 2013 from the Texas Administrative Code (TAC), Texas Department of State Health Services (DSHS), the U.S. Centers for Disease Control and Prevention (CDC), and the U.S. Advisory Committee for Immunization Practices (ACIP). See attached CDC Healthcare Worker Vaccination Recommendations (2013). [HSCEP OP 75.11 – Health Surveillance Program for TTUHSC El Paso Institutional Health and Infection Control Program, Attachment A-Health Surveillance Program for Students.](#)

General Information

Registration

Students are required to register for the appropriate courses in every semester in which they expect to receive assistance, use the facilities of the university, or take comprehensive examinations. The number of credit hours for which a student must enroll is 9 credit hours per semester.

Dropping a Course

Any student who wishes to drop from a course must initiate such action with the GSBS office. Students should follow the [academic calendar](#) for deadlines associated with dropping classes.

- It is important for students who receive financial aid or a GSBS scholarship to be aware of the **refund policies** and to understand the impact on the aid released, continued financial aid, and scholarship eligibility.

Visit the [TTUHSC El Paso Student Business Services Office](#) for specific details regarding refund policies as well as the [Institutional Student Handbook: Code of Professional and Academic Conduct 2020-2021](#).

For further details relating to grading procedures and academic regulations, please refer to the [HSCEP OP 77.19, Grading Procedures and Academic Regulations](#).

Withdrawal from All Classes (Dropping to Zero Hours)

The GSBS office is committed to support and help students complete their education. If a GSBS student finds it necessary to withdraw from the TTUHSC El Paso prior to the end of an academic term, the process should be initiated with the GSBS office. Students should submit an online withdrawal request to the Office of the Registrar; the last date of attendance must be documented. Students must clear all administrative holds from various academic or administrative departments prior to withdrawing officially from the university. The notation of “W” (withdraw) will be recorded for each class.

Leave of Absence

Leave of absence and its length is granted by the dean upon recommendation of the GSBS graduate council. Leave of absence may be granted only in cases of serious medical conditions or other exceptional reasons.

- a. Leave of absence within a semester.
 - i. The student is responsible for contacting the GSBS office to initiate the process.
 - ii. Once the GSBS office is notified, the student must submit a Leave of Absence form.
 - iii. The Leave of Absence form must be approved and fully signed by the required parties in order to be considered official.
 - iv. The GSBS graduate council may approve or reject the leave of absence.
 - v. The student is responsible for contacting professors regarding the material covered, assignments due, and any other requirements needed to complete the semester successfully.
- b. Leave of absence (consecutive semesters – 12 months)
 - i. The student is responsible for contacting the GSBS office to initiate the process.
 - ii. Once the GSBS main office is notified, the student must submit a Leave of Absence form.
 - iii. The Leave of Absence form must be approved and fully signed by the required parties in order to be considered official.
 - iv. The GSBS graduate council may approve or reject the leave of absence.
 - v. If the GSBS Graduate Council approves the leave of absence, the GSBS office will submit a memo to the Registrar's office.
- c. The student is responsible for providing ample time to the GSBS office to process the paperwork in a timely manner.
- d. Students who do not have an official leave of absence are subject to review for readmission by the standards in effect at the time of reconsideration

Full-Time Study

GSBS semesters are 16 weeks-long, 15 weeks of instruction plus one week for final examinations. Full-time enrollment is considered 9 credit hours for students during a regular semester. Students receiving (a) scholarship(s) must meet full-time enrollment requirements each semester.

Academic Probation and Dismissal

All students enrolled in the GSBS are required to maintain a high level of academic performance, professionalism, and comply fully with the policies and procedures of the TTUHSC El Paso and GSBS. The GSBS reserves the right to place on academic probation or dismiss any graduate student who does not maintain satisfactory academic standing or who fails to conform to the policies and procedures of the TTUHSC El Paso.

Academic probation

Applies for a designated period of time and may lead to more severe disciplinary sanctions if the student is found to be in violation of any policies and procedures of the GSBS, such as:

- a. If a student's grade point average (GPA) for a particular semester falls below 3.0, the student will be placed on academic probation. The student must make a 3.0 GPA or better in the next semester enrolled. Failure to obtain and maintain a 3.0 GPA or higher in each succeeding semester may result in academic dismissal from the GSBS. Regulations governing academic probation are based on a semester base GPA and apply regardless of overall GPA.
- b. Students who receive a grade of C or below in two or more core courses are subject to academic probation.
- c. Students are expected to follow the TTUHSC El Paso Institutional Student Handbook Code of Professional and Academic Conduct, the GSBS Student Handbook, and the GSBS Catalog. Failure to do so may be grounds for academic probation or dismissal.

Attendance

Attendance is **mandatory**. In case of non-attendance, it is the responsibility of the student to inform the course director or the GSBS office right away of their absence. More than three (3) unjustified absences may result on dismissal; tardiness is disruptive and will be monitored. The GSBS course directors provide the students with explicit written information within the course syllabus with regard to the penalty incurred for each absence and the means, if any, to compensate for the absence. It should be recognized that there may be certain situations where the student may not be permitted to make up the absence(s). Excused absences are determined by the course director.

Extracurricular Activities

Graduate students may participate in extracurricular activities within the guidelines TTUHSC El Paso policies. The Graduate Student Association (GSA) and the Student Government Association (SGA) offer many opportunities for participation. Second year master students are required to participate in the TTUHSC El Paso's Annual Research Symposium which takes place during the spring semester so that all graduating students can gain experience presenting their research.

English Language Proficiency

A student found deficient in English may be required to satisfactorily complete certain English language courses (without graduate credit) before being considered for candidacy for a graduate degree.

Students' Responsibilities

Every student is expected to become thoroughly familiar with TTUHSC El Paso regulations, guidelines, GSBS regulations, and degree requirements. Failure to follow the regulations and requirements almost inevitably results in complications for which the GSBS cannot assume responsibility.

TTUHSC El Paso Email

To facilitate communications, the GSBS communicates exclusively through the student's assigned TTUHSC El Paso email account (i.e., first.last@ttuhsc.edu). It is the student's responsibility to check the TTUHSC El Paso email account for important information and notifications. Communication through personal email occurs only before admission to the GSBS or in unforeseen cases.

Laptops

Majority of the GSBS courses require the use of a laptop; therefore, it is strongly recommended that all incoming students possess and maintain a laptop computer that meets the technical specifications of TTUHSC El Paso and the GSBS. For further information about technical specifications, students should contact the IT Help Desk at 915-215-4111 or ELP.HelpDesk@ttuhsc.edu. The following are the main systems the GSBS students will use:

a. **Canvas**

[Canvas](#) is the TTUHSC El Paso online course management system. The GSBS uses Canvas to organize course material and assignments; therefore, it is the students' responsibility to constantly check Canvas for any update or material available.

b. **ExamSoft**

The GSBS uses ExamSoft as the software to deliver assessments. Students are responsible for familiarizing themselves with the software and downloading course assessments in a promptly manner. Information about ExamSoft and other IT resources can be found in Canvas.

Scholarships

The GSBS seeks to continually recruit and retain the best quality students. In support of that goal, the GSBS offers scholarships to **master's students**. In order to maintain the GSBS scholarship, master students must maintain a minimum 3.0 GPA or better **per semester**.

- **Failure to maintain a 3.0 GPA or higher in each semester will result in losing the GSBS scholarship for the succeeding semester.**

Transfer Credit

Work completed at another graduate school is not transferred to the GSBS programs. Graduate credit is not granted for courses taken by correspondence.

Waiving Requirements

There is no automatic waiving of requirements at the GSBS.

Tutoring

Group and one-on-one tutoring is available. It is the responsibility of the student to contact the course director and faculty when tutoring is needed.

Graduation

A student becomes a candidate to graduate as soon as all of the following requirements have been met:

- a. All hours of required graduate work has been completed.
- b. A cumulative grade point average (GPA) of 3.0 or better has been maintained by the end of the program.
- c. Work to date is acceptable to the faculty concerned.
- d. The Intent to graduate application form has been submitted and approved.
- e. The student's degree plan conforms to the general requirements of the GSBS and of the particular program.

GPA Requirement for Graduation

For the master's program and the post-baccalaureate certificate program the minimum cumulative GPA required for graduation is a 3.0 GPA including all courses taken at the GSBS.

Semester of Graduation

The official graduation date is in May. Every candidate for a graduate degree and certificate of completion must be registered at the GSBS in the semester of graduation. Failure to graduate at the expected time requires additional registrations, as necessary, until graduation. Any student who does not complete all requirements for a graduate degree within the time limit will be dismissed.

Time Limit

Students seeking advanced degrees are expected to graduate within a specified period of time. GSBS students whose graduate study is interrupted by military service are granted an extension for the period of their military duty (not to exceed 5 years). Per reporting guidelines from the [Texas Higher Education Coordinating Board \(THECB\)](#), **students seeking master's degrees are expected to graduate within 5 years.**

Graduation Fee

Early in the semester of graduation, candidates for graduation must pay a one-time non-refundable \$75 graduation fee to cover the cost of printing the diploma. If the candidate for graduation does not graduate in the semester in which the fee was paid the graduation fee must be paid again for any subsequent intended graduation dates.

Intent to Graduate Application Form

Candidates for graduation must submit an intent to graduate application form at the beginning of the semester of intended graduation. No candidate's name will be placed on a tentative list for graduation unless the intent to graduate application has been submitted by the specified deadline. Any candidate who fails to graduate at the expected time is required to submit a new intent to graduate application form for any subsequent intended graduation dates.

Master's Degree Core Curriculum

Master's Program

The master's program is a 2 year program comprised of 36 semester credit hours of graduate work.

Core Curriculum

The core curriculum is designed to give all students a unified and coordinated foundation that serves as the basis for further study in individual disciplines within the biomedical sciences.

- a. Students may not drop a core course for academic reasons. Core curriculum coursework includes:
 - GSBE 5301 – Core I: Biochemistry
 - GSBE 5302 – Core II: Cell Biology
 - GSBE 5303 – Core III: Genetics
 - GSBE 5201 – Core IV: Laboratory Methods in Biomedical Sciences
 - GSBE 5640 – Core V: Introduction to Biomedical Research
 - GSBE 7000 – Core VI: Research in Biomedical Sciences
- b. Students who receive a grade of C or below in a core course are required to repeat the course and pay the associated fees.
- c. Students who receive a grade of C or below in core courses already retaken are subject to academic probation.
- d. Students who receive a grade of C or below in two or more core courses are subject to academic probation.
- e. Students must maintain a minimum 3.0 GPA or better per semester in order to maintain the GSBS scholarship.

Post-Baccalaureate Certificate Core Curriculum

Post-Baccalaureate Certificate Program

The post-baccalaureate certificate program is a 1 year program comprised of 18 semester credit hours of graduate work.

Core Curriculum

The core curriculum is designed to give all students a unified and coordinated foundation that serves as the basis for further study in individual disciplines within the biomedical sciences.

- a. Students may not drop a core course for academic reasons. Core curriculum coursework includes:
 - GSBE 5301 – Core I: Biochemistry

GSBE 5302 – Core II: Cell Biology

GSBE 5303 – Core III: Genetics

GSBE 5201 – Core IV: Laboratory Methods in Biomedical Sciences

- b. Students who receive a grade of C or below in a core course are required to repeat the course and pay the associated fees.
- c. Students who receive a grade of C or below in core courses already retaken are subject to academic probation.
- d. Students who receive a grade of C or below in two or more core courses are subject to academic probation.
- e. Students must maintain a minimum 3.0 GPA or better per semester to receive the certificate of completion.

Grading Policies

Grades

The GSBS office uses a letter grade system from A to F. All grades are converted to points in computing grade point averages (GPA). The GSBS office does not add a plus or a minus to the grade. Substituting another course for one completed with a low grade is not permitted. Work completed at another graduate school is not transferrable to the GSBS.

Grade Point Chart

Grade	Point	Grade Interpretations
A	4	Well above the passing standard; meets program requirements.
B	3	Above the passing standard; meets program requirements.
C	2	Fails to meet requirements for <u>core courses</u>. <ul style="list-style-type: none">• Core course must be retaken. Passing standard; meets requirements for elective courses and non-core courses.
D	1	Below the passing standard; does not meet program requirements. <ul style="list-style-type: none">• Course must be retaken.
F	0	Well below the passing standard; does not meet degree requirements. <ul style="list-style-type: none">• Course must be retaken

Grading Scale

The following scale applies to all courses at the GSBS.

1. 100-90 = A
2. 89-80 = B
3. 79-70 = C
4. 69-60 = D
5. 59 and below = F

Further information about the TTUHSC El Paso Grading Policies, please refer to [HSCEP OP: 59.05, Grading Procedures and Academic Regulations](#)

Students Covered By This Policy

These grading policies apply to students enrolled in the courses necessary to complete the requirements for the Master of Science in Biomedical Sciences and the Post-Baccalaureate Certificate at the TTUHSC El Paso GSBS. These policies do not cover the course work done for other degree programs in which the student may be enrolled.

Student Performance Assessment

Student Performance Assessment

The responsibility of assessing student performance rests within the faculty of the GSBS. Faculty have an obligation to the students, TTUHSC El Paso, GSBS, and society to award passing grades only to those students who have demonstrated mastery of the course material. In addition to assessing students' knowledge and skills, the faculty has the obligation to determine whether students' behavior or conduct is suitable to represent the scientific community. It is inappropriate to allow a student to progress or graduate when unacceptable behavior or unprofessional conduct have occurred, such as, cheating or plagiarism.

Refer to the [GSBS student handbook](#) and the [TTUHSC El Paso Institutional Student Handbook Code of Professional and Academic Conduct](#) for further information regarding unacceptable and unprofessional conduct.

Every attempt will be made to apply the principles of fairness and due process when considering the actions of the faculty or administration that might adversely affect the students.

Monitoring Student Progress

The dean of the GSBS, the Graduate Council, and course directors are responsible for monitoring the progress of GSBS students during their course of study in order to provide or refer students to the appropriate academic or personal counseling services, if applicable. The Office of Student Affairs will provide support to the GSBS students as requested. Student progress will be reviewed by the GSBS office by the end of each semester in the context of all course work, student's professionalism, evidence of progressive improvement, and personal circumstances.

Responsibilities of the Dean

The dean, as the chief academic officer, has the power to make final decisions concerning students. During a student hearing procedure, the decision of the dean regarding the hearing committee's findings and recommendations is final.

Student Considered “At Risk”:

- If course work is incomplete.
- If several courses have been failed.
- If course directors or faculty identify poor performance on given assignments or low test scores.
- Also, if there are concerns about professionalism regarding the student’s behavior.

If a student is considered “at risk” they will be placed on academic probation. A proposed learning plan will be devised in order to strengthen identified deficiencies. It is the responsibility of the student to follow the learning plan and to follow up with the dean regarding progress.

Remediation is recommended by the course director and agreed on by the dean. However, students may be dismissed without academic watch or warning ever being designated. The dean may also choose to remove “Good Standing” as a disciplinary action. Remedial work will not be counted as elective time in satisfying the conditions for graduation.

Transcript Notation Fail (F)

When a student receives a final failing grade in a course and it is not required for the student to repeat the course, then a grade of “F” (Fail) will be entered on the transcript.

Documentation of Student Academic Performance

All grades will be recorded in WebRaider and will be available in the student’s electronic portfolio. The TTUHSC El Paso Registrar Office maintains the official transcript of all students.

General Issues

Progress is not bound by categorical or arithmetic assessment of student performance but rather reviewed based on each student in the context of his/her academic achievement and any other circumstances that may influence performance. If a student exhibits conduct or behavior inconsistent with ethical standards and professionalism, a grade of F may be given.

Conduct or Behavior

Conduct and behavior that occurs beyond the boundaries of a classroom or laboratory may also be considered. In that case, the student will be referred for disposition of the cases described under the [TTUHSC El Paso Institutional Student Handbook Code of Professional and Academic Conduct](#).

Challenging Student Records or Grades

Students have the right to challenge records, grades, and information directly relating to them. A student who wishes to appeal a grade must file a formal, written grade appeal within five business days of the beginning of the next semester.

A grade can be formally appealed only when there is demonstrable evidence that prejudice, or arbitrary or capricious action on the part of the instructor has influenced the grade. The burden

of proof that such an unfair influence has affected a grade rests with the student who appeals the grade.

Course Listings

Reading Catalog Course Descriptions

Courses are listed by program. Not all courses listed in this catalog are offered every year. The GSBS reserves the right to cancel any scheduled course or withdraw any program from the list of offerings when the best interests of the institution require such action.

Example of Course Description

GSBE 5101 — Responsible Conduct of Research **(1:1:0)**: This course addresses the regulatory and ethical environment of today's biomedical research, as well as topics such as authorship and data management. **(F)**

Subject Prefix: GSBE

Indicates the course subject = Graduate School of Biomedical Sciences El Paso

First Digit in Course Number: GSBE 5101

Indicates the academic level of the course. Graduate courses are within the 5000 series or above. Any coursework credited toward a graduate degree must, except in rare instances and with prior approval from the GSBS dean, be of graduate level (5000 series or above).

Second Digit in Course Number: GSBE 5101

Indicates the semester credit-hour value of the course. This example is a 1 credit-hour course.

Last Two Digits of Course Number: GSBE 5101

Are the distinguishing numbers of the course.

Numbers in Parentheses **(1:1:0)**: The first number denotes the total credit hour value of the course, the second number represents lecture hours, and the third number represents laboratory hours.

When the letter V precedes the numbers (e.g., V1-6), this indicates that the class is a variable credit course. Such courses are ordinarily research courses and permit enrollment for any number of hours, up to the limit indicated by the second number in parentheses.

Prerequisites

Some courses have specific prerequisites that must be met before a student is eligible to enroll.

Instructional Method

Information in parenthesis after the course description describes the course instructional method, defined as:

- (F)** Traditional face-to-face course
- (H)** Hybrid course with a combination of face-to-face and significant web-based instruction
- (O)** Online course with most, if not all, web-based instruction
- (IVC)** Course in which synchronous instruction is delivered via two-way transmission between an instructor and student who are not in the same physical location

More than one instructional method (e.g., F/IVC) indicates that the instructional method varies by course section.

Master's Degree Curriculum

Master's Degree Curriculum

The GBSS recognizes that advanced scientific knowledge is the foundation for both basic and translational research; therefore, full-time research is preceded by a curriculum that introduces scientific facts and provides opportunities for the development of critical thinking, synthesis of information, development of factual knowledge, and the ability to read and comprehend original literature.

Curriculum Design and Courses

Core curriculum courses (Core I-VI) must be passed with a final grade of B or better. Obtaining a C as a final grade will require the student to retake the course. Expected graduation date will be delayed by this.

First Year

Fall Semester

GSBE 5104 — Biomedical Sciences Seminar (1:1:0)

This course offers presentations, journal articles, and related material in biomedical sciences presented by faculty and special guests for group discussion. **(F)**

GSBE 5201 — Core IV: Laboratory Methods in Biomedical Sciences I (2:2:0)

This course introduces first-year graduate students to the fundamental principles and techniques in basic science research. **(F)**

GSBE 5301 — Core I: Biochemistry (3:3:0)

This course teaches structure, biosynthesis, and functions of the major classes of organic compounds with particular reference to organic molecules and their relationship to polymers, such as carbohydrates, lipids, proteins, and nucleic acids. **(F)**

GSBE 5302 — Core II: Cell Biology (3:3:0)

This course teaches the structural details and molecular functions of the different parts of the cell. The course also deals with the signal transduction processes and cellular functions required for cell growth and death. **(F)**

Spring Semester**GSBE 5101 — Responsible Conduct of Research (1:1:0)**

This course addresses the regulatory and ethical environment of today's biomedical research, as well as topics such as authorship and data management. **(F)**

GSBE 5102 — Laboratory Methods in Biomedical Sciences II (1:1:0)

This course provides an integrated approach to modern biochemical techniques in biochemistry, cell and molecular biology, and genetics, including RNA interference and recombinant DNA techniques. **(F)**

GSBE 5104 — Biomedical Sciences Seminar (1:1:0)

Students are required to attend all seminars sponsored by the biomedical studies program. Students who wish to deviate from the yearly seminar requirement must obtain approval from the graduate program committee. **(F)**

GSBE 5303 — Core III: Genetics (3:3:0)

This course teaches the principles of molecular genetics. The main topics covered in this course include gene structure and function at the molecular level, regulation of gene expression, organization of genetic information in prokaryotes and eukaryotes, genetic rearrangements, and genetic engineering. **(F)**

GSBE 5310 — Biostatistics (3:3:0)

This course introduces the basic concepts and methods for presenting and analyzing biomedical data. Topics include concepts of estimation and testing, experiment design, an introduction to randomized clinical trials, sample size and power calculation, curve fitting, ROC analysis, and statistics for genetic data. **(F)**

Second Year**Fall Semester****GSBE 5104 — Biomedical Sciences Seminar (1:1:0)**

Students are required to attend all seminars sponsored by the biomedical studies program. Students who wish to deviate from the yearly seminar requirement must obtain approval from the graduate program committee. **(F)**

GSBE 5220 — Cancer Biology and Therapeutics (2:2:0)

Students in this course will emerge with an advanced understanding of the molecular and cellular basis of cancer. The principles of cancer biology — from the origin of cancer to therapeutic interventions — are addressed. **(F)**

GSBE 5222 — Advanced Human Genetics (2:2:0)

This course covers, in detail, population genetics, cytogenetics, molecular biology, and biochemistry as they relate to human heredity and genetic disorders. It includes discussion of current research literature. **(F)**

GSBE 5224 — Cellular and Molecular Neuroscience (2:2:0)

This course addresses molecular mechanisms of neuro-degeneration associated with neurodegenerative disorders, including spinal muscular atrophy, Parkinson's disease, Alzheimer's disease, Amyotrophic Lateral Sclerosis and Huntington's disease. The course consists of lectures and critical discussions of recent research papers. **(F)**

GSBE 5226 — Principles of Virology (2:2:0)

This course covers material relating to the principals of virology. Students will learn about the molecular biology of viruses, mechanisms of viral pathogenesis and methods of host control. **(F)**

GSBE 5640 — Core V: Introduction to Biomedical Research (6:0:18)

This course offers a hands-on introduction to the laboratories in which students may wish to conduct their thesis or non-thesis research. **(F)**

Spring Semester

GSBE 5104 — Biomedical Sciences Seminar (1:1:0)

Students are required to attend all seminars sponsored by the biomedical studies program. Students who wish to deviate from the yearly seminar requirement must obtain approval from the graduate program committee. **(F)**

GSBE 5221 — Microbiology (2:2:0)

This course covers current techniques in genetic analysis, molecular biology, and gene regulation in microorganisms, with an emphasis on bacteria and bacteriophages. **(F)**

GSBE 5223 — Nutrition, Epigenetics, and Human Diseases (2:2:0)

This course will teach Pathogenesis of diabetes, Genetic variants and risk of diabetes and obesity with Breast Cancer, Molecular basis of Diet supplementation, Insulin resistance, Diet-gene interactions in the development of diabetes, Parental nutrition and Epigenetics. **(F)**

GSBE 5225 — Immunology (2:2:0)

This course teaches basic and advanced concepts in immunology, including a survey of immunology as a host response to foreign agents, the nature of antigens and antibodies,

effector and memory T cell responses, innate and adaptive immunity to microbial infections, allergic reactions, and tumor immunology. **(F)**

GSBE 5227 — Medical Physiology (2:2:0)

This course lays the basis for understanding how cells, tissues, organs, and organ systems function together to create one organism. Students will learn from biomedical professors in graduate-level courses, expanding their knowledge of advance human physiological principles. **(F)**

GSBE 7000 — Core VI: Research in Biomedical Studies (6:0:18)

In this course, students engage in full-time laboratory research in a TTUHSC El Paso laboratory, under the direct supervision of a graduate faculty member. Emphasis is placed on experimental methods and independent research on projects related to biomedical studies. After a student is well-established in his/her research, additional rotations may be done to gain expertise in techniques specific to the student's research (if not available in the faculty advisor's laboratory). The course is repeatable if different methods are covered for each registration. **(F)**

Final Written Research Report

While master students are not required to present a research thesis, **students are expected to submit a final research report as part of the requirements for GSBE 7000 — Core VI: Research in Biomedical Studies prior graduation.**

The master's final written research report represents independent student work, conducted under the supervision of a GSBS faculty mentor, and is expected to be written clearly and concisely. Students must earn a grade of B or better on the research report to qualify for graduation. A copy of the research report must be uploaded to Canvas as indicated by the syllabus.

Laboratory Research

Laboratory research is conducted during the second year of the master's program. Laboratory work is incorporated into **GSBE 5640 — Core V: Introduction to Biomedical Research** and **GSBE 7000 — Core VI: Research in Biomedical Studies.**

The goal of these courses and the laboratory research is to formally introduce students to research and to determine if the student has an interest in a particular research area. Laboratory works is performed under the supervision of a GSBS faculty member.

The GSBS faculty member becomes a mentor and is required to perform a written evaluation of the student's performance at the end of the semester. The signed evaluation form is included in the student's program file and it is considered into the grading process for each class.

Post-Baccalaureate Curriculum

First Year

Fall Semester

GSBE 5104 — Biomedical Sciences Seminar (1:1:0)

This course offers presentations, journal articles, and related material in biomedical sciences presented by faculty and special guests for group discussion. **(F)**

GSBE 5201 — Core IV: Laboratory Methods in Biomedical Sciences I (2:2:0)

This course introduces first-year graduate students to the fundamental principles and techniques in basic science research. **(F)**

GSBE 5301 — Core I: Biochemistry (3:3:0)

This course teaches structure, biosynthesis, and functions of the major classes of organic compounds with particular reference to organic molecules and their relationship to polymers, such as carbohydrates, lipids, proteins, and nucleic acids. **(F)**

GSBE 5302 — Core II: Cell Biology (3:3:0)

This course teaches the structural details and molecular functions of the different parts of the cell. The course also deals with the signal transduction processes and cellular functions required for cell growth and death. **(F)**

Spring Semester

GSBE 5101 — Responsible Conduct of Research (1:1:0)

This course addresses the regulatory and ethical environment of today's biomedical research, as well as topics such as authorship and data management. **(F)**

GSBE 5102 — Laboratory Methods in Biomedical Sciences II (1:1:0)

This course provides an integrated approach to modern biochemical techniques in biochemistry, cell and molecular biology, and genetics, including RNA interference and recombinant DNA techniques. **(F)**

GSBE 5104 — Biomedical Sciences Seminar (1:1:0)

Students are required to attend all seminars sponsored by the biomedical studies program. Students who wish to deviate from the yearly seminar requirement must obtain approval from the graduate program committee. **(F)**

GSBE 5303 — Core III: Genetics (3:3:0)

This course teaches the principles of molecular genetics. The main topics covered in this course include gene structure and function at the molecular level, regulation of gene expression, organization of genetic information in prokaryotes and eukaryotes, genetic rearrangements, and genetic engineering. **(F)**

GSBE 5310 — Biostatistics (3:3:0)

This course introduces the basic concepts and methods for presenting and analyzing biomedical data. Topics include concepts of estimation and testing, experiment design, an introduction to randomized clinical trials, sample size and power calculation, curve fitting, ROC analysis, and statistics for genetic data. **(F)**

Academic Misconduct

Academic misconduct refers to any activity that compromises the academic integrity of the university or subverts the educational process, including, but not limited to, cheating, plagiarism, falsifying academic records, misrepresenting facts, or any act designed to give unfair academic advantage to the student or attempt to commit such an act. Refer to the [TTUHSC El Paso Institutional Student Handbook Code of Professional and Academic Conduct](#) for more information.

Research Misconduct

Allegations of research misconduct (fraud, dishonesty, or any kind of misconduct in research) will be investigated by the university's research integrity officer as outlined in [HSCEP OP 73.07 Honesty in Research & Allegations of Scientific Misconduct-Attachment A](#).

Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results; or other practices that materially deviate from those that are commonly accepted within the scientific and academic communities for proposing, conducting, or reporting research. It also includes other material deviations from accepted scientific practices, such as failure to report unethical research practices, obstruction of another's research, violation of confidentiality; intentional deception, omission, or research dishonesty; repeated incidents of regulatory noncompliance and misuse of research funds. It does not include honest errors or honest differences in interpretations or judgments of data.

- Fabrication refers to making up data or results and recording or reporting them.
- Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results, such that the research is not accurately represented in the research record.
- Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.
- Research misconduct does not include honest error or differences of opinion.

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a federal law that protects the privacy of students' educational records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he/she reaches the age of 18 or attends a school beyond the high school level. Students to whom the rights have transferred are "eligible students."

- Parents or eligible students have the right to inspect and review the student's educational records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for parents or eligible students to review the records. Schools may charge a fee for copies.
- Parents or eligible students have the right to request that a school correct records that they believe to be inaccurate or misleading. If the school decides not to amend the record, the parent or eligible student then has the right to a formal hearing. After the hearing, if the school still decides not to amend the record, the parent or eligible student has the right to place a statement with the record setting forth his/her view about the contested information.
- Generally, schools must have written permission from the parent or eligible student in order to release any information from a student's educational record. However, FERPA allows schools to disclose those records, without consent, to the following parties under the following conditions (34 CFR § 99.31):
 - School officials with legitimate educational interest
 - Another school to which the student is transferring
 - Specified officials for audit or evaluation purposes
 - Appropriate parties in connection to the student's financial aid
 - Organizations conducting certain studies for or on behalf of the school
 - Accrediting organizations
 - In compliance with a judicial order or lawfully issued subpoena
 - Appropriate officials in cases of health or safety emergencies
 - State and local authorities, within a juvenile justice system, pursuant to specific state law(s)

Directory Information

Schools may disclose, without consent, directory information, such as a student's name, address, telephone number, date and place of birth, honors and awards, and dates of attendance. However, schools must tell parents and eligible students about directory

information and allow parents and eligible students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify parents and eligible students annually of their rights under FERPA. The actual means of notification (a special letter or inclusion in a PTA bulletin, student handbook, or newspaper article) is left to the discretion of the school.

For additional information or technical assistance, call 202-260-3887 (voice). Individuals who use TDD may call the Federal Information Relay Service at 800-877-8339.

Or you may contact the U.S. Department of Education's [Family Policy Compliance Office \(FPCO\)](#), which is responsible for the administration of FERPA.

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920

Health Insurance Portability and Accountability Act (HIPAA)

All students receive training on [Health Insurance Portability and Accountability Act \(HIPAA\)](#) of 1996. This will be a live presentation during new student orientation, but it is required to complete an online training each subsequent year while a student.

HIPAA requires that covered entities train all members of its students, workforce, volunteers, trainees, and anyone else who represents the organization in privacy and security policies and procedures.

The U.S. Department of Health and Human Services states that organizations are required to create and utilize "appropriate sanctions against workforce members who violate policies and procedures." Should a breach occur, TTUHSC El Paso must conduct a confidential and timely investigation of the matter in accordance with TTUHSC El Paso policies to lessen the harmful effect to wronged party to the maximum extent practical.

TTUHSC El Paso Title IX

The University does not tolerate discrimination or harassment based on or related to sex, race, national origin, religion, age, disability, protected veteran status, genetic information, or other protected categories, classes, or characteristics. While sexual orientation and gender identity are not explicitly protected categories under state or federal law, it is the University's policy not to discriminate in employment, admission, or use of programs, activities, facilities, or services on these bases.

The University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex and other types of Sexual Misconduct.

The University will not take any disciplinary action against a student enrolled at the University who in good faith reports to the University being the victim of, or a witness to, an incident of Sexual Harassment, Sexual Assault, Dating Violence, or Stalking for a violation by the student of the TTUHSC Student Handbook, Code of Professional Conduct, occurring at or near the time of the incident, regardless of the location at which the incident occurred or the outcome of the University's disciplinary process regarding the incident, if any.

The University reserves the right to investigate to determine whether a report of an incident of Sexual Harassment, Sexual Assault, Dating Violence, or Stalking was made in good faith. After such investigation, the Title IX Coordinator or his/her designee will make a determination as to whether a student is entitled to amnesty. Once a determination is made regarding amnesty for a student, such determination is final and may not be revoked.

Notwithstanding the forgoing, amnesty does not apply to a student who reports the student's own commission or assistance in the commission of Sexual Harassment, Sexual Assault, Dating Violence, or staling.

Although students eligible for amnesty may avoid formal disciplinary action under these amnesty provisions, amnesty does not preclude the University from requiring students to participate in directives such as counseling or educational opportunities relating to the conduct students were engaged in.

Abuse of these amnesty provisions by a student may result in a violation of the TTUHSC Student Handbook, Code of Professional Conduct. The amnesty provisions do not impact criminal proceedings or charges, mandatory reporting to state licensing boards, legal actions, or actions required to comply with professional ethic requirements.

Refer to the [HSCEP OP 51.03, Sexual Harassment, Sexual Assault, Sexual Misconduct, and Title IX Policy and Complaint Procedure](#).

Who to contact:

Linda S. Ellis, MD, MJ, MA, FABP
Associate Dean of Student Affairs, PLFSOM
TTUHSC El Paso, Title IX Coordinator
linda.s.ellis@ttuhsc.edu
915-215-5439

Valerie Paton, Ph.D.
Interim Assistant, Vice President for Student Affairs
TTUHSC El Paso, Title IX Deputy Coordinator for Students
valerie.paton@ttuhsc.edu
915-215-4370