

## FOURTH YEAR

PHYS 3304 Optics  
 PHYS 3301 Electromagnetic Theory I  
 PHYS 4303 Quantum Mechanics I  
 PHYS 4300 Undergraduate Research  
 PHYS 4392 Research Methods  
 UTCH 4101 Apprentice Teaching Seminar  
 UTCH 4601 Apprentice Teaching

## THIRD YEAR

PHYS 3305 Classical Mechanics  
 PHYS 3411 Math Methods for Physicist I  
 PHYS 3303 Thermodynamics  
 UTCH 3302 Classroom Interactions  
 X3XX Free Elective  
 X3XX Free Elective  
 PHYS 4305 Statistical Mechanics  
 PHYS 4101 Senior Laboratory Research  
 READ 4305 Content Area Literacy  
 UTCH 3303 Project-Based Instruction

## SECOND YEAR

MATH 2415 Calculus III  
 MATH 3341 Differential Equations  
 MATE 3317 Perspective in Math & Science  
 PHYS 3402 Modern Physics  
 UTCH 3301 Knowing & Learning in Math & Science  
 Choose 1 Government/Political Science  
 Choose 1 Integrative/Experiential Learning  
 Choose 1 Language, Philosophy & Culture  
 PHYS 2426 Physics for Scientists & Engr. II  
 Choose 1 Government/Political Science  
 PHYS 3330 Functions and Modeling

## FIRST YEAR

Choose 1 Communication  
 MATH 2413 Calculus I  
 Choose 1 American History  
 Choose 1 Social and Behavioral Sciences  
 Choose 1 Creative Arts  
 UTCH 1101 Inquiry Approaches to Teaching  
 UNIV 1301 Learning Framework  
 Choose 1 Communication  
 MATH 2414 Calculus II  
 PHYS 2425 Physics for Scientists & Engr. I  
 Choose 1 American History (Core)  
 CSCI 1380 Computer Science I  
 UTCH 1102 Inquiry-Based Lesson Design

### 2018-2019 ACADEMIC PLAN

"Choose 1" Indicates course options. If options are not listed, please review the 2018-19 General Education Core or the degree plan for this major: [www.utrgv.edu/degreepians](http://www.utrgv.edu/degreepians).

Courses in red are part of the General Education Core Curriculum (GEC).

### Additional Info

You must apply to the UTeach program. Students must fulfill the General Education Core requirements. Within the General Education Core the students are required to take:

**Life and Physical Sciences – 6 hours**

- PHYS 2425 Physics for Scientists and Engineers I (three-hour lecture)
- PHYS 2426 Physics for Scientists and Engineers II (three-hour lecture)

**Mathematics – 3 hours**

- MATH 2413 Calculus I (three hour lecture)

**Integrative/Experiential Learning Option – 6 hours**

- CSCI 1380 Computer Science I
- PHYS 2425 Physics for Scientists and Engineers I (one-hour lab)
- PHYS 2426 Physics for Scientists and Engineers II (one-hour lab)
- Any additional course of 1 credit or more that satisfies General Education Core "Integrative/Experiential Learning Option" Requirements.

### Contact Info

Department Chair  
**Dr. Soma Mukherjee**  
[soma.mukherjee@utrgv.edu](mailto:soma.mukherjee@utrgv.edu)

#### Department Locations:

**Edinburg**  
 EPHYS 1.128  
 Phone: 956-665-2531

**Brownsville**  
 BLHSB 2.226  
 Phone: (956) 882-6679

UTRio Grande Valley

**BLUE  
 PRINT**

**PHYSICS (BS)**  
 \*7<sup>th</sup>-12<sup>th</sup> UTeach Certification  
**Catalog: 2018-19**  
 COLLEGE OF SCIENCES

### Degree Info

A Physicist has a solid understanding of fundamental laws, which in turn can be applied to a wide area of scientific and engineering fields. It is an exciting career that requires discipline and significant amount of work. It also requires development of mathematical, experimental, theoretical, and computational skills. As a result of the Physicist's solid and broad background, Physicists can apply to a wide range of job opportunities, including National Laboratories and Research Centers, Industry, and Academia.

# BLUEPRINT EXPERIENCES

## FIRST YEAR

## SECOND YEAR

## THIRD YEAR

## FOURTH YEAR AND BEYOND

## CAREERS

### MILESTONES

- UTRGV has a Writing Center and a Learning Center. Make it a point to visit them!
- Complete your core English classes (section 010) during your first year.
- Complete 30 credit hours every year in order to graduate in 4 years.
- Shoot for a GPA of 3.5 or higher.
- Take MATH 2413 in your first year.

### ADVICE & SUPPORT

- Meet with your academic advisor and bring your orientation folder with you to every session!
- Choose a major with confidence- Visit my.UTRGV.edu and check out MyMajors.
- Visit a faculty member during their office hours and ask a question about class.
- Classes fill up fast. When registration opens, be sure to register on the first day for your group.
- Cold or flu getting you down? We have Student Health Services on campus with free office visits.

### APPLY WHAT YOU LEARN

- Look for a service-learning course! For guidance, visit Engaged Scholarship & Learning Office.
- Participate in a campus-sponsored community service project.
- Ask a student in class to study with you.

### GLOBAL, CAMPUS & COMMUNITY ENGAGEMENT

- Set up your profile on the Engagement Zone through My.UTRGV.edu.
- Attend a diversity based campus or community event (e.g. MLK Day of Service).
- Attend a departmental programs such as the weekly seminars.
- Join a student organization! Consider looking into the SPS (Society of Physics Students) and/or Astronomy Club.

### LIFE AFTER GRADUATION

- Create a résumé and set up your profile on the Handshake icon: (My.UTRGV.edu).
- Got summer plans? Visit Career Center and ask about places to do some job shadowing.
- Research shows that students who work on campus perform better than those who work off campus. Look for a job on Handshake!
- Check your UTRGV email for the daily Messenger- locate and attend one student workshop.

- Shoot for a GPA of 3.5 or higher.
- Complete major foundation classes, such as PHYS 3402, UTCH 3301, PHYS 3330, and MATE 3317.
- Complete 30 credit hours.
- Apply to the UTeach program. For more information visit [www.utrgv.edu/cep](http://www.utrgv.edu/cep).

- Want to explore different careers? Check out MyMajors!
- Come ready with course suggestions and questions when you visit your academic advisor.
- Visit the Communication Hauser Lab for help with your speeches.
- Trouble making your tuition payment? The Financial Aid Office can help. Payment plans and emergency loans are also available

- To find undergraduate research opportunities, visit the Engaged Scholarship & Learning Office.
- Consider attending the LeaderShape Institute or attend the Engaged Scholar Symposium.

- Look at study abroad opportunities!
- Check out a cultural campus or community event such as HESTEC or FESTIBA.
- Join another student organization.
- Check out a campus event that offers free lunch- bring a friend!

- Update your resume in Handshake and have it reviewed.
- Visit the Career Center site to find a job fair to attend. At the event, approach a recruiter and discuss internships.
- Will a minor expand your career options? We recommend the Astronomy Minor.
- Explain to someone how your academic program aligns with your strengths and interests.

- Shoot for a GPA of 3.5 or higher.
- Complete 30 credit hours.
- Have you landed an internship or acquired research experience? This is the year to make it happen.

- Seek out research opportunities within your major and join a professional organization such as the APS (American Physical Society) or the AAS (American Astronomical Society).
- Check DegreeWorks to make sure you are on track for graduation next year.
- Apply for internship and/or job shadowing opportunities. Discuss this with your advisor, faculty mentor, or Career Center.

- Go show off your research, service-learning or creative works at the Engaged Scholar Symposium!
- Sharpen your writing skills!

- Consider serving on a campus life/community committee or become a student leader and make a difference. Visit VLink or speak with your Student Government Association for more information!
- Travel the world! Look into study abroad opportunities at Office for International Programs & Partnerships.

- Check out the Physics & Astronomy department website for postings on career/graduate school.
- Think about three people you can ask for letters of recommendation (professors, mentors, advisors, supervisors, etc.). Give them at least two weeks' advance notice!
- When is the deadline for your graduate school application? Visiting the program admissions webpage. Most do not accept late applicants!

- Shoot for a GPA of 3.5 or higher.
- "I have a plan for after graduation." If this describes you, great! If not, visit your Faculty Advisor or Career Center!
- Register for your Capstone/senior/portfolio project: PHYS 4300.
- Complete at least 30 credit hours to graduate.
- Submit your application(s) for graduate school, an apprenticeship, or for fulltime employment.

- Engage in an independent study project or an academic internship to complement your major, such as an Educational Physics research project.
- Discuss future plans with your faculty mentor or advisor that includes employment, finances, and other life goals.
- Apply for graduation one semester prior to your anticipated date. Visit the Academic Advising Center to ensure you are on track.

- Continue to present research or creative works at the Engaged Scholar Symposium or at Physics and/or Astronomy and/or Educational conferences.
- Set up an informational interview with an individual (especially an alumnus) currently in the field you aspire to work in.

- Identify employers of interest and seek them out at job fairs, online, at on-campus information sessions, staffing agencies, etc. The Career Center can help.
- Before a job interview, schedule a mock interview with the Career Center or speech coaching with the Communication Hauser Lab.

- Have you received your acceptance for graduate school or an employment offer? If not, network: talk to faculty, the Career Center, and get on LinkedIn.
- Formulate and implement a strategy for life after graduation: attend career fairs, graduate fairs, apply to fellowships, etc.
- Update your information with Alumni Relations. Enjoy alumni mixers, events and continued access to Career Center services!
- Remember to do your exit loan counseling on studentloans.gov.

- Teaching
- Computer software development
- Educational research
- Writing and editing
- Library and information Sciences
- Public school systems
- Private schools
- Publishing companies:
  - Books
  - Magazines
  - Videos
- Software developers
- Libraries

For additional info, visit the Career Center website and check out "What Can I Do With This Major?" [www.utrgv.edu/careercenter](http://www.utrgv.edu/careercenter)