

COURSE SYLLABUS  
PHYS 1406: "Physics of sound and music"  
Spring 2021

The course satisfies the 4-hour lab-science requirement in the Natural Science Core Curriculum.

**Instructor:** Joseph D. Romano

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**Office hours (remote):** TTh 2:00pm-3:30pm, and by appointment

**Lectures:** PHYS 1406: TTh 12:30-1:50pm (via zoom)

**Labs:** You must be signed up for one of the following lab sections

PHYS 1406-501: Thu 4:00-5:50pm

PHYS 1406-502: Thu 10:00-11:50am

PHYS 1406-503: Fri 10:00-11:50am

All lab sections will be held remotely (via zoom).

Attendance and turned in lab assignment are required. A minimum lab grade of 75% is needed for passing the course. See Course Calendar for lab dates.

**Required textbook:** *Physics of Sound and Music, PHYS 1406, Course Guide and Laboratory Manual, Spring 2021*, by Prof Walter L. Borst

This book contains the course topics. It also contains the lab manual and sample homework, quizzes, and exams from previous years. Bring the book with you to class; add your notes in the book. *The book is available at The CopyOutlet, 2402 Broadway, Lubbock, Tel. 744-7772.*

**Course Objectives and Outcomes:** Become familiar with some physical principles of sound, acoustics, and music. Enjoy music! No prior knowledge of sound and music is required. A general high school background in science and mathematics is assumed.

**Course Topics:** Distinguishing between general sound, music, and noise; harmonics, quality of sound; sound analysis and synthesis; the physics of oscillations and waves; production and perception of sound (instruments, voice, hearing); room acoustics and electrical recording and reproduction of sound. *Also, class demonstrations and experiments, and performances by students and guest musicians.*

**Grading:**

10 laboratories: 20%

Exams:  $3 \times 20\% = 60\%$

Final exam: 20%

**Grade Scale:** 100–A–86–B–72–C–58–D–44–F–0

**Exams:** There will be three exams plus a cumulative trial. Homework questions will not be graded, but you are encouraged to do past homework problems and sample quizzes and exams (from previous years) to help you do well on the exams. You are allowed to bring one handwritten page of notes to the exams. *A scientific calculator and ruler is required for the exams.*

**Make-ups:** Make-up exams and quizzes are not given without a *prior* valid excuse. In case of a serious emergency, please discuss with me how a missed grade can be made up.

**Recommendation:** Study 3-5 hours each week outside of class for a likely grade of A or B.

## **REQUIRED SYLLABUS LANGUAGE:**

**Academic Honesty (OP 34.12):** It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but it not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

The full policy is available at <http://www.depts.ttu.edu/opmanual/OP34.12.pdf>

**Special Accommodation for Students with Disabilities (OP 34.22):** Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor’s office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

The full policy is available at <http://www.depts.ttu.edu/opmanual/OP34.22.pdf>

## **Student Absence for Observance of a Religious Holy Day (OP 34.19):**

1. “Religious holy day” means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20.
2. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.
3. A student who is excused under section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

The full policy is available at <http://www.depts.ttu.edu/opmanual/OP34.19.pdf>

**TTU Resources for Discrimination, Harassment, and Sexual Violence:** Texas Tech University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other Title IX violations are not tolerated by the University.

Report any incidents to the Office of Student Rights & Resolution, 806-742-SAFE (7233) or file a report online at <http://www.depts.ttu.edu/titleix/>.

Faculty and staff members at TTU are committed to connecting you to resources on campus. Some of these available resources are:

- **TTU Student Counseling Center**  
 Phone: 806-742-3674  
 Website: <https://www.depts.ttu.edu/scc/>  
 (Provides confidential support on campus.)
- **TTU 24-hour Crisis Helpline**  
 Phone: 806-742-5555  
 (Assists students who are experiencing a mental health or interpersonal violence crisis. If you call the helpline, you will speak with a mental health counselor.)
- **Voice of Hope Lubbock Rape Crisis Center**  
 Phone: 806-742-7273  
 Website: <http://voiceofhopelubbock.org>  
 (24-hour hotline that provides support for survivors of sexual violence.)
- **The Risk, Intervention, Safety and Education (RISE) Office**  
 Phone: 806-742-2110  
 Website: <http://www.depts.ttu.edu/rise/>  
 (Provides a range of resources and support options focused on prevention, education, and student wellness.)
- **Texas Tech Police Department**  
 Phone: 806-742-3931  
 Website: <http://www.depts.ttu.edu/tttd/>  
 (To report criminal activity that occurs on or near Texas Tech campus.)
- **LGBTQIA:** Within the Center for Campus Life, the Office of LGBTQIA serves the Texas Tech community through facilitation and leadership of programming and advocacy efforts. This work is aimed at strengthening the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community and sustaining an inclusive campus that welcomes people of all sexual orientations, gender identities, and gender expressions.

## Syllabus Recommendations and Points for Considerations Regarding Expectations for Student Participation in Online Synchronous Courses

This course is designated as an online synchronous course. That means that we will meet in real time at a regularly scheduled class time via a video conferencing tool (e.g., Collaborate, Zoom, Teams, etc.).

To ensure that you are fully engaged in class discussions and account team meetings during class time, you are expected to do the following:

1. Maintain the same level of civility and professionalism that would be expected in a face-to-face classroom setting.
2. Attend all classes regularly.
3. Log into the video conference on time and remain logged in for the duration of the class period.
4. Activate your camera so that you are visible to the instructor and other students in the class. If you have concerns about leaving your camera on (such as childcare obligations, privacy issues, or a particular circumstance during a class period), please talk to the instructor.
5. Refrain from engaging in non-class related activities during class time that create a distraction for other students in the class and/or limit your ability to engage in the course.

Failure to meet these expectations may result in the following consequences:

1. Being counted as absent for the class meeting.
2. Not receiving credit for class participation for that class period.
3. Other consequences as stipulated in the syllabus, *Texas Tech Code of Student Conduct*, or other university policy.

Repeated failure to meet expectations (e.g., attendance, participation in class, etc.), in addition to the above consequences, may result in the one or more of the following consequences:

1. Referral to the appropriate Associate Dean.
2. Academic penalty, ranging from a warning to failure of the course.

## Online Classroom Decorum

Texas Tech University is a community of faculty, students, and staff sharing an expectation of cooperation, professionalism, respect and civility in all forms of university communication and business. This expectation applies to all interactions in a classroom setting where an exchange of ideas and creative thinking should be encouraged and where intellectual growth and development are fostered.

As we consider ways in which we maintain a productive and cooperative online environment, many of the same standards from a face-to-face instruction transfer to the online setting. In this way, at the instructor's discretion, disruptive behavior may result in disciplinary referrals pursuant to the *Texas Tech University Code of Student Conduct*. Students are expected to maintain online behaviors that are conducive to learning.

Examples of behavior that may be considered disruptive include:

- Disrupting the flow of a class session(s) by making off-topic comments.
- Enabling or participating in online classroom hijacking ("Zoombombing") by participating in online classroom streams without being enrolled in the course or by sharing streaming classroom links with parties not enrolled in the course.
- Spamming, hacking, or using TTU or Blackboard platforms for commercial purposes.
- Cyberbullying or online harassment.
- Habitually interfering with or stopping instructional delivery