### COURSE DESCRIPTION

This course covers the formulation and solution of physical problems using vector analysis, complex variables, Fourier series and transforms in addition to differential equations.

### PROGRAM LEARNING OUTCOMES:

- The student will demonstrate proficiency in the basic and applied fields of physics.
- The student will develop effective written and oral communication skills, especially the ability to transmit complex technical information in a clear and concise manner.

### STUDENT LEARNING OUTCOMES:

- By the end of the course, a successful student will be able to:
  - Demonstrate the ability to utilize algebra and the calculus of complex numbers in physics applications.
  - Demonstrate skill in using advanced mathematical techniques to solve physics problems in classical mechanics, electricity and magnetism, optics, thermodynamics and quantum mechanics.

### GENERAL EDUCATION CORE CURRICULUM OBJECTIVES / OUTCOMES:

This course is not included in the general education core curriculum.

Meets 3 hrs/wk for 14 weeks, and also meets for a 2-hour final examination. This is a problem-oriented class with homework problems. The time outside of classes each week averages more than 9 hours:

- reading the textbook
- working homework problems
- rewriting and annotating lecture notes
- studying for exams

### PREREQUISITES:

Electricity, Sound, and Light (PHY 1302) or Technical Physics II (PHY 2342) and Calculus II (MTH 2314)

### UNIVERSITY COVID-19 MASK POLICY:

Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.


### CREDIT HOUR JUSTIFICATION:

Meets 3 hrs/wk for 15 weeks, and also meets for a 2-hour final examination. This is a problem oriented class with homework problems. The lecture has 3 hours of contact time each week and the work outside of classes each week (which must be done to make a passing grade) averages much more than 6 hours in working homework problems, reading the textbook and studying for exams which include major exams and possibly short lecture quizzes.

### MEETING TIME:

11:00 a.m. - 12:15 p.m. TR

### ROOM:

4014 STEM Building

### INSTRUCTOR:

Walter L. Tkosko

### CONTACT INFO:

wtkosko@sfasu.edu, Tel: 468-3001

### OFFICE:

207-C STEM Building

### STUDENT HOURS:

9:00 a.m. - 10:00 a.m. MW, and 2:00 p.m. - 3:00 p.m. TR or by appointment.

### TEXT:

Mathematical Methods in the Physical Sciences (3rd Ed.) by Mary L. Boas
**SUGGESTIONS FOR MAKING A GOOD GRADE:**

- Read your textbook.
- Attend classes regularly and punctually.
- Do your homework yourself.
- Review lecture material daily (Don’t cram).
- Develop and practice good note taking skills.
- Ask questions in class.
- Read your textbook.

**Academic Integrity (A-9.1)**] Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty** Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**WITHHELD GRADES SEMESTER GRADES POLICY (A-54):** Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

**STUDENTS WITH DISABILITIES** To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/)

**STUDENT CODE OF CONDUCT (POLICY 10.4):** Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program. Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This policy applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the iCare: Early Alert Program at SFA. Information regarding the iCare program is found at [https://www.sfasu.edu/judicial/earlyalert.asp](https://www.sfasu.edu/judicial/earlyalert.asp) or call the office at 936-468-2703.