

TROY UNIVERSITY  
PHY 2263, Physics II with Calculus

1. Course Listing, Number, Title, Number of Semester Hours:

PHY 2263, Physics II with Calculus, (3)

2. Accurate Course Description:

Principles of electricity, magnetism and optics, utilizing the methods of calculus.

*Prerequisite: PHY 2262, L262. Co-requisite: PHY L263.*

3. Course Textbooks, Manuals, or Required Materials:

*Physics for Scientists and Engineers, 7<sup>th</sup> edition, by Serway*

4. Course Topics:

1. Vibration and wave motion
2. Sound
3. Electric forces and electric fields
4. Electric energy and capacitance
5. Current and resistance
6. DC circuits
7. Magnetism
8. Induced voltage and inductance
9. Alternating current circuits and electromagnetic waves
10. Reflection and refraction of light
11. Mirrors and lenses
12. Wave optics
13. Optical instruments



TROY UNIVERSITY  
PHY L262, Physics II with Calculus Laboratory

1. Course Listing, Number, Title, Number of Semester Hours:

PHY L262, Physics I with Calculus Laboratory (1)

2. Accurate Course Description:

Laboratory work emphasizing basic principles of , the use of measuring instruments, and the interpretation of data. Co-requisite: PHY 2262

3. Course Textbooks, Manuals, or Required Materials:

*Physics Laboratory Experiments*, 6<sup>th</sup> edition, by Wilson

4. Course Topics

1. Hooke's law
2. Standing waves in a string
3. Standing waves in a pipe
4. Electric field mapping
5. Resistivity
6. Ohm's law
7. Voltmeter and ammeter
8. DC circuits
9. RC time constant
10. Inductance
11. AC circuits
12. Light and optics
13. Data analysis
14. Experimentation, measurement and error