THE GOVERNOR'S SCHOOL for SCIENCE AND TECHNOLOGY

Computational Physics

Syllabus

2024-2025

Course Description

Teaches fundamental principles of physics and scientific programming in Python.

PHY 201 - General College Physics I [4 credits, VPCC dual enrolled]
PHY 202 - General College Physics II [4 credits, VPCC dual enrolled]

Prerequisite(s): MTH 115 or MTH 163 or equivalent

Instructor

- Instructor : Dr. Bedir
- Classroom : A41
- Office : A38
- Email : islam.bedir@nhrec.org
- Phone : 757-704-4282
- Twitter : @GsstPhysics
- Office Hours : By appointment
- Online Help : Email, Zoom, Canvas discussion forums
- Teaching Assistant : Prof. Dr. Elena Kuchina

Textbook

- College Physics: A Strategic Approach; 3rd Edition; Knight, Jones, Field

Supplementary Books and Materials

- Pearson Mastering Physics website & e-Text (will be provided)
- *Einstein: His Life and Universe* by Walter Isaacson (ISBN: 9780743264747)
- *Learn Like a Pro* by Barbara Oakley (ISBN: 978-1250799371)

Extracurricular Activities

- PyClub
- Roots for STEM

Method of Instruction

Students are expected to read the assigned chapters. The course content will be taught through a series of lectures, hands-on demonstrations, physics and coding assignments, quizzes, tests, projects, and laboratories.

Homework Assignments & Due Dates

In this course, you can expect a variety of assignments, including physics problems, programming tasks, and lab reports. Physics assignments will be distributed through the online platform *MasteringPhysics*, and all assignment and lab report due dates will be posted on Canvas. It's important to meet these deadlines as late submissions may result in no credit. Make-up assessments, at the instructor's discretion, are available for students with valid and reasonable excuses, with each case assessed individually.

Assessments

Assessments in this course will encompass a variety of methods, including formal evaluations like quizzes and tests, informal assessments such as (clicker) questions at the beginning and/or throughout the class, as well as discussions.

Laboratory

Laboratory sessions will be used to reinforce concepts covered in the lecture as well as to give the student experience in data collection, analysis, and report presentation.

Grading

Quizzes, tests, homework, and laboratory grades are weighted as follows to determine quarterly grades:

- Assignments 35%
- Tests 30%
- Laboratory 25%
- Quizzes & Notes 10%

Course grades will be determined based on the following grading scale:

- 90 – 100%: A
- 80 – 89% : B
- 70 – 79% : C
- 60 – 69% : D
- 0 – 59% : F

Expectations

Students are expected to

- **Be Ready:** Be seated and ready to learn when the bell rings.
- **Stay Engaged:** Be actively focused on educational goals.
- **Stay on Task:** Be attentive and engaged in the assigned tasks.
- **Be Respectful:** Demonstrate respect in various ways, including:
    - Maintain Respectful Language: Use polite and considerate language.
    - Respect Peers: Treat classmates with kindness and consideration.
    - Respect Classroom Materials: Take care of classroom resources and materials.
    - Contribute Positively: Encourage a positive and inclusive classroom atmosphere.