



Fundamentals of Physics Syllabus Spring 2025

Course Information

Course Title: *Fundamentals of Physics*

CRN: **20229**

Course number with Section: **PHY 1020C S 01**

Course Description: THIS COURSE OFFERS A COMPREHENSIVE SURVEY OF PHYSICS, COVERING A WIDE RANGE OF TOPICS INCLUDING MOTION, NEWTON'S LAWS, ENERGY, SOUND, HEAT, ELECTRICITY, MAGNETISM, AND OPTICS. EMPHASIZING A CONCEPTUAL UNDERSTANDING OF PHYSICS, THE COURSE INTEGRATES CRITICAL THINKING SKILLS AND REAL-WORLD APPLICATIONS.

Course Location: **B34 R112**

Course Day and Time: **online**

Prerequisites: None.

Corequisites: None.

Instructor Information

Name: **Dr. G. Maresch**

Office Location: **B34 R111**

Office Hours: **Monday 10:45 - 12:15; 1:30 - 2:00; 3:15 - 4:30**
Tuesday 12:00 - 12:45; 3:30 - 4:30
Wednesday 12:00 - 12:15; 1:30 - 2:00
Thursday 11:00 - 12:45

Phone Number: **(850) 973-1632**

Email: **mareschg@nfc.edu**

Instructor Response Time for Phone/Email: I will return your call or email within 48 hours of receipt, unless it's on the weekend or a holiday and then I will return your call or email on the next business day.

>> When sending an email:

- The subject line must include your course name
- Your full name in the body of the email
- Send your email from your official NFC student account.

>> When leaving a voice mail: include the name of your course, your full name and your phone number.

Response Time for Posting Grades on D2L: Generally, grades will be posted in the grade book on D2L within seven days after the due time of the assignment. If applicable, lab reports may take up to three weeks until they are posted on D2L.

Department Chair: *Dr. G. Maresch*

Department Chair Email: *mareschg@nfc.edu*

Required Curriculum/Textbook and Course Materials

Required Textbooks: **Fundamentals of Physics I**, by R. Shankar, Yale Univ. Press, 2019
ISBN 978-0-300-24377-2

Fundamentals of Physics II, by R. Shankar, Yale Univ. Press, 2020 ISBN
978-0-300-24378-9

Your course is included in the Follett Access Program. You will receive an email regarding your textbook from Follett, the NFC bookstore. Through Follett Access, your textbook and materials are less costly, and they are automatically in your D2L course on the first day of class. If you choose to opt out of this program, you will need to follow the process on the email you receive and you will be responsible for purchasing all required materials for this course. If you have any questions regarding this process, please contact support at <https://customersupportcenter.highered.follett.com/hc/en-us>.

Required Course Materials/Supplies: **Thames & Kosmos, Physics Workshop, 2005.**

Each student commits to ensure access to the internet and a computer during non-school hours or make provisions to complete all work during campus hours, Monday through Friday, from one of the many computer labs across campus. Basic scientific calculator required (no cell phone calculators, please). Depending on devices possible preferred browser: Mozilla FireFox for Mastering/MyMathLab and D2L, Internet Explorer / Edge for PCs, Google Chrome and Safari for Apple devices. Each student needs basic computer skills to include creating and submitting files using Microsoft Word, PowerPoint, and Excel. Knowledge of correct email use and protocol is expected.

Minimum Technological Requirements and Skills: Student will need to have access to the internet and an up-to-date computer that will run D2L during non-

school hours or make provisions to complete all work during campus hours, Monday through Thursday, from one of the many computer labs across campus.

- Preferred browsers for D2L and Connect websites is Firefox/Mozilla/Chrome with all plug-ins up to date for D2L, Safari (Apple devices) may not work well in some instances. Student should have at least two different browsers available on their computer to assist with troubleshooting.
- Student will need Office 365 (specifically PowerPoint, Word and Excel) – available free to registered NFC students, works with Mac and PC but not very well with Chromebooks. Student will download PowerPoint, Word and Excel directly onto their computer.
- Online Homework and some virtual labs will be completed using the textbook publisher website which requires an internet browser with pop-ups disabled, a pointing device (mouse or touch screen), and current versions of Flash, Shockwave, and Java installed on your computer.
- Any technical issues should be troubleshooted immediately
- ***NFC Technical Support: Contact NFC Computer Services at (850) 973-1672 or email help@nfcc.on.spiceworks.com for computer hardware, D2L and general email assistance.***

For textbook questions, please visit:

<https://customersupportcenter.highered.follett.com/hc/en-us>

Grading Policy and Assessment Methods

Course Grading/Student Performance Evaluation: Subject to change. Any changes will be announced in class.

Approximately fourteen homework assignments contribute 30 % to the final grade. Late submissions are not accepted. Exceptions if approved by your instructor, are graded with an up to 20 % reduction of the numeric grade.

Approximately five quizzes will be given in the semester to help students stay on task with studying. Quizzes contribute with 20 % to the final grade. Quizzes cannot be made up, whatever the reason may be. From the number of all quizzes, one with the lowest score will be dropped for the final grade.

There will be two major tests, which will include one or more chapters and will be mainly multiple choice, true or false, and fill-in-the-blanks with some essay questions and labeling diagrams. Tests contribute 30 % (15 % each) to the final grade.

A comprehensive Final Exam contributes 20 % to the final grade. Tests and exams cannot be made up unless arrangements are made in advance. If you miss an exam due to an unexcused absence it will negatively affect your final grade.

There are no provisions for extra credit work to improve your grade. No extra credit assignments will substitute for missed exams, or any other graded assignment. Quizzes, tests and exams are closed book, closed notes. The use of a 4x6 note card is

recommended.

Grading:

| Graded Item | Total % of Grade | |
|----------------------|------------------|-----------------|
| Homework / Portfolio | 30 % | A : [90, 100] |
| Quizzes | 20 % | B : [80, < 90] |
| Tests (20 % each) | 30 % | C : [70, < 80] |
| Final Exam | 20 % | D : [60, < 70] |
| | | F : [0, < 60] |

Mid Term and/or Final Exam Information: This course does not have a midterm exam.

Final Exam Date and Time: Tuesday, April 29, 2025 available all day

Location: online

Format: Multiple Choice, True-False and Short Answer Questions and Problems.

Outcomes/Objectives

Use **EITHER** General Education Program Learning Outcomes **OR** Program Learning Outcomes below:

GENERAL EDUCATION PROGRAM LEARNING OUTCOMES/OBJECTIVES

1. **Communication Skills:** Students will demonstrate competence and understanding in both oral and written expression.
2. **Critical Thinking:** Students will demonstrate mastery of discipline-specific problem-solving skills.
3. **Diversity:** Students will interpret and evaluate societal and ethical issues, problems and values specific to time and place.
4. **Technology:** Students will demonstrate competence in use of technology appropriate to course and/or circumstance.

PROGRAM LEARNING OUTCOMES/OBJECTIVES

1. Demonstrate competence of the unifying concepts of the physical sciences.

2. Demonstrate a mastery in the interpretation of scientific data reported in graphical and other mathematical formats.
3. Demonstrate the ability to understand and explain the application of fundamental laws in physics and how they relate to current theories.
4. Demonstrate the ability to communicate scientific facts in writing.
5. Demonstrate the ability to relate historic cultural influences on milestones in natural science.
6. Demonstrate competence in using a scientific calculator for solving a numerical problem.

Course Level Student Learning Outcomes/Goals

All courses with multiple sections must use the same wording for all SLOs, and assessments must share common attributes.

- STUDENTS WILL CRITICALLY EVALUATE EVERYDAY PHENOMENA USING THE SCIENTIFIC METHOD.
- STUDENTS WILL EXPLAIN THE BASIS OF PHYSICAL PRINCIPLES (SUCH AS CONSERVATION LAWS) AND HOW THEY APPLY TO EVERYDAY PHENOMENA.
- STUDENTS WILL INTERPRET INFORMATION CONVEYED IN DIAGRAMS AND GRAPHS.
- STUDENTS WILL PERFORM SIMPLE CALCULATIONS RELEVANT TO REAL WORLD PROBLEMS.

| Course Level SLO # | Gen Ed/Program Outcome # | <u>Summative Assessments</u> (A student artifact: A specific assignment that could be submitted as evidence of a General Education or program level competency) |
|--------------------|--------------------------|--|
| 1 | 1 | Quiz, Final Exam |
| 2 | 2 | Quiz, Final Exam |
| 3 | 3 | Quiz, Final Exam |
| 4 | 4 | Quiz, Final Exam |

Course Content and Schedule

No class meetings on MLK Day, Jan. 20, Presidents' Day, Feb. 17, and Spring Break, Mar. 10 – 14.

Early Alerts: Full Term

#1: January 28th – 29th

#2: February 25th – 26th

The following is a tentative schedule and subject to change. The exact date for each test will be announced in class one week before the test date.

| | |
|--------|-----------------------------|
| Week 1 | Structure of Mechanics |
| Week 2 | Motion in Higher Dimensions |
| Week 3 | Newton's Laws |

| | | |
|---------|-------------------------------|----------------|
| Week 4 | Conservation of Energy | |
| Week 5 | Rotational Dynamics | Review, Test 1 |
| Week 6 | Simple Harmonic Motion | |
| Week 7 | Waves | |
| Week 8 | Fluids | |
| Week 9 | Heat | |
| Week 10 | Electrostatics | Review, Test 2 |
| Week 11 | The Electric Field | |
| Week 12 | Conductors, Capacitors | |
| Week 13 | Circuits and Currents | |
| Week 14 | Magnetism | |
| Week 15 | Electromagnetic Waves, Review | |
| Week 16 | | Final Exam |

NFC Course Policy Statements

All students are expected to follow the NFC policies on Academic Dishonesty. All students need to read the NFC Catalog (available online), which defines the forms of Academic Dishonesty and the associated penalties.

The use of AI writing apps (including, but not limited to: Grammarly, Google Chrome AI assistant, ChatGPT etc) to generate answers in this course is strictly forbidden and is evaluated via the use of the Turnitin Program. The use of these types of apps to write an assignment is in violation of the NFC Academic Honesty policy.

I expect all students to come to class, on time, and prepared to participate fully in the lecture or lab and discussions. For college level courses a student should plan on spending at least two hours per week per credit hour on course related work outside of class. All instructors have to report “no show” students who do not attend class meetings for this course. “No show” indicates the student will be removed from the course.

I expect all students to be courteous at all times to other members of the academic community. This includes but is not limited to showing respect for other students, being attentive in class, not eating during class, turning off cell phones during class, and using personal computers during class only to participate in class. No food or drink is allowed in the classroom. Points will be deducted for interruptions (cell phones, tardiness, rudeness, leaving class without permission!

A student absent from class bears the full responsibility for all subject matter and procedural information discussed in the class. If you do have an emergency and miss a class, call or email your instructor or a classmate, and review your pacing schedule to get your assignments. A missed assignment is graded as such and will affect your grades.

You can expect from your instructor to come prepared to present the course content in a way that will help you learn the material. I will not knowingly waste your time. If I am covering a topic, it's because the topic is important. You can expect me to spend extra time with you outside of the classroom when you need extra help master complex material, to facilitate your learning process, but remember I cannot make you learn anything, and to treat you with respect.

For online courses: At the beginning of the semester, the instructor must report “no show” students for this course. “No show” indicates the student will be removed from the course. In order to be considered as attending the online course, the student must log in to D2L and complete “Getting Started,” step #1. Students will be prompted to complete the Mandatory Attendance quiz by the deadline as given on the course schedule; this quiz will verify students’ attendance in the course.

NFC Information and Policy Statements

Academic Honesty

NFC is committed to providing a high-quality educational experience to all students, and students are expected to follow appropriate and honest academic practices. This information is available in the Academic Regulations section of the college catalog at www.nfc.edu. All cases of academic dishonesty will be reported to the Office of Academic Affairs.

Statement about Generative AI Technology:

Individual course instructors are free to set their own policies regulating the use of generative AI tools in their courses, including allowing or disallowing some or all uses of such tools. Course instructors should set such policies in their course syllabi and clearly communicate such policies to students. Students who are unsure of policies regarding generative AI tools are encouraged to ask their instructors for clarification.

Use of or consultation with generative AI shall be treated analogously to assistance from another person. Absent a clear statement from a course instructor, using generative AI tools to complete an assignment or exam (e.g., for idea generation or for entering exam or assignment questions) is not permitted. Students should acknowledge the use of generative AI and default to disclosing such assistance when in doubt.

Instructors use www.turnitin.com to review papers and projects for improper citation and/or plagiarism by comparing each student’s report against billions of internet pages, a repository of works submitted to Turnitin in the past, and thousands of academic sources. A comparison document called the *Similarity Report* details the areas of a student paper that may have been documented incorrectly or used improperly. **Refer to instructor’s course policy statements for usage details.**

Attendance Policy

Regular and consistent attendance facilitates student success. Absences beyond the equivalent of two weeks of class are considered to be excessive and thus may impact a student's course grade. Typically, two weeks of class would be described as follows:

- For a three-credit hour class that meets MW or TR: 4 class meetings (2 weeks).
- For a three-credit hour class that meets once a week for three hours: 2 class meetings (2 weeks).

Students are responsible for material covered during their absence. Refer to instructor makeup policy.

If there is no verifiable participation within the first week of the term, a student will be dropped from the class for non-attendance. This includes classes delivered in face-to-face, online, or hybrid format. See instructor policy.

Textbook Purchases

Textbook Purchases

All required course materials are listed in the Virtual Bookstore tab on NFC's homepage. Course materials purchased through Follett, NFC's only contracted vendor, can be charged against a student's financial aid account. Course materials may also be purchased from any other source with the understanding that these non-Follett purchases cannot be charged against a student's financial aid account.

Used Book Purchases

Students should check the Follett book list found in the Virtual Bookstore tab on NFC's homepage for correct titles and editions. Note: The ISBN listed in Follett may include both the required text and a required access code. When considering purchasing used books, students should be sure the purchase includes the ACCESS CODE in courses where required. If not, the access code must be purchased separately at an additional cost.

Students/Visitors: Where to Park on Campus

If you have any questions about parking on campus, contact Campus Security at (850) 973-0280. Park in designated parking spaces only. Do not park on the grass or in undesignated areas. Faculty/Staff parking areas are to be used only by full- and part-time employees of the college. Faculty and staff parking spaces are lined in yellow and are clearly marked "STAFF". Students and visitors can park in any spaces that are lined in white. **NOTE: Some visitor parking spaces are lined in yellow with the word "Visitor" in the center. These are for visitors only. Students are not allowed to park in these spaces. Vehicles cannot be parked by backing into the space. Any vehicle that is illegally parked will be towed at the owner's expense. Refer to the college catalog or student handbook for all other parking regulations.**

Enforcement: If a vehicle is parked illegally anywhere on campus, it is subject to be towed at the owner's expense (\$85.00+). An illegally parked vehicle will be given a **WARNING on the FIRST OFFENSE. There will be no second warning.** Illegally parked vehicles will be **TOWED ON THE SECOND OFFENSE.** Signs will be displayed near parking areas with the name and address of the company to contact if the vehicle is towed.

The company that tows the vehicle is an independent company contracted by North Florida College. The College has no authority to negotiate towing fees and is not in any way responsible for damage or liability to the vehicle or its contents. The company that provides the towing service is:

Jimmie's Firestone
6025 South SR 53
Madison, FL 32340
(850) 973-8546

Campus Security

The administration of NFC works diligently to make the campus as safe as possible. A few of the procedures in place include the use of security officers, the placement of security lights at strategic locations, and the locking of buildings when not in use. Students should always be alert and use normal precautionary measures. Campus crime statistics are documented annually and are available in the college catalog. Campus security can be contacted at 850-973-0280 from 7:30 a.m. until 11:30 p.m. for assistance while on campus with non-emergency security concerns. All emergency incidents should be reported directly to 911.

Library Services

The Marshall Hamilton Library, located in Building 4 at NFC, is open during the following hours (hours are subject to change):

Fall/Spring Term

Monday – Thursday 8:00 a.m. – 7: 00 p.m.

Fridays 8:00 a.m. – 4:30 p.m.

Summer Term

Monday – Thursday 8:00 a.m. – 4:30 p.m.

Resources and staff are available in the library to support student learning in the classroom. Students are encouraged to visit our website and use the online resources. Librarians are on duty to help with questions and research strategies. To gain access to the library's extensive collection of electronic resources such as eBooks and academic databases with full-text articles, students will use the Single Sign-on through the MyNFC portal or Library Website. Students should contact the library at library@nfc.edu or call (850) 973-1624 if they are having login issues. Online library resources are available to students 24 hours a day through the library's website, <https://www.nfc.edu/learning-resources/>. Wireless Internet is also accessible in the library and on the patio after hours. Specific policies and regulations applicable to the library are available in the Library or by visiting the Library's website.

Academic Success Center

The Academic Success Center (ASC) exists to provide all NFC students, regardless of academic proficiency, the help and support necessary to ensure successful completion of studies and programs. Services include one-on-one peer and professional tutoring assistance, online tutoring, organized group study sessions, workshops, study skills training, academic coaching, web resources, and more. The ASC takes pride in working

closely with faculty and staff to develop resources and to support the various academic programs offered at NFC.

Walk-in and by appointment services: Students may visit the ASC (Bldg. 4) for in-person services or make an appointment to receive in-person or virtual academic support services during the posted hours:

Fall/Spring Term

Monday – Thursday 8:00 a.m. – 5:30 p.m.

Fridays 8:00 a.m. – 4:30 p.m.

Summer Term

Monday – Thursday 8:00 a.m. – 4:30 p.m.

- **Workshops, organized group study sessions, and professional tutoring:** See the ASC calendars and schedules on NFC’s website for specific dates, times, and delivery methods. For additional information visit <https://guides.nfc.edu/asc>.

Academic Success Center Online Tutoring

Online tutoring is available to NFC students 24 hours a day, 7 days a week, through the Academic Success Center. The ASC offers 1 to 1 tutoring available on demand in a variety of subjects, 24/7 anytime, anywhere.

For more information about accessing the ASC online tutoring service, see the ASC webpage or contact Elizabeth Gonzales at gonzalese@nfc.edu or (850) 973-1719 and/or Brianna Kinsey at kinseyb@nfc.edu or (850) 973-9458.

For **any** additional information regarding services provided by the **Academic Success Center**, please contact any of the following:

- Elizabeth Gonzales, Academic Success Center Coordinator (850) 973-1719 / gonzalese@nfc.edu
- Brianna Kinsey, Tutor Lab Manager (850) 973-9458 / kinseyb@nfc.edu

Americans with Disabilities Act

NFC is dedicated to the concept of equal opportunity. Students desiring modifications in class or on campus due to a disability may choose to inform the instructor at the beginning of the semester or contact the Disability Resource Center directly. Accommodation and modifications will be made after the student registers with the Disability Resource Center and provides appropriate documentation of disability. After the documentation is evaluated, the instructor may be involved in providing accommodations to equalize the student’s educational experience. Students may call (850) 973-1683 (V) or (850) 973-1611 (TTY) for an appointment or additional information.

Technology Access

All NFC online learning tools are available on the MyNFC portal. To access the portal, students should click the MyNFC link at the top of the NFC website (<http://www.nfc.edu>) or type the following URL into the Internet address bar: <https://my.nfc.edu>. **When**

accessing the portal for the first time, students should click the "First Time User" link and follow the instructions to set up the account.

Each NFC student is provided an email account through GoMail. The student's GoMail account is the official email address used by faculty and staff for communication with the student. A student can access his/her GoMail account via the MyNFC portal. Students are expected to check their GoMail accounts regularly.

Desire2Learn (D2L) is the learning management system that houses all online and supplemented face-2-face courses. Students can log in to an online or supplemented course by accessing the MyNFC portal. Students will then see their course(s) listed under the "My Courses" widget on the D2L homepage. Click the name of the course to begin.

Student Ombudsman

The Student Ombudsman provides confidential, informal, and neutral assistance to students seeking to resolve disputes or address issues of importance. The Student Ombudsman does **not** serve as a student *advocate*, but rather serves as a guide to assist students in the navigation of college organizational structure and in understanding of policies and procedures. David Paulk is the current Student Ombudsman. He can be reached at (850) 973-9418 or paulkd@nfc.edu.

Equal Opportunity Statement

North Florida College is dedicated to the concept of equal opportunity and access to all programs and activities. In accordance with federal and state laws, and College policy, NFC does not discriminate in any of its policies, procedures, or practices based on race, ethnicity, color, religion, sex, national origin, gender, age, disability, pregnancy, marital status, genetic information or any other characteristic protected by law. Inquiries or complaints regarding equity issues of any nature may be directed to Denise Bell, Equity Coordinator, 325 NW Turner Davis Drive, Madison, FL 32340, Telephone (850) 973-9481 or email equity@nfc.edu.

Student Rights

As members of the College community, students have certain rights that include the following.

Students have the

- Right to a quality education.
- Right to freedom of expression.
- Right to hold public forums.
- Right to peacefully assemble.
- Right to a fair and impartial hearing.
- Right to participate in Student Government.
- Right to be a member in authorized student organizations.
- Right to appeal College decisions through established grievance procedures.
- Right of personal respect and freedom from humiliation and control.
- Right to make the best use of the student's time and talents and to work toward the goal which brought the student to the College; and
- Right to ask about and recommend improvements in policies that affect the welfare of students.

Student Responsibilities

As members of the College community, students have certain responsibilities that include the following.

Students are

- Expected to assume responsibility for knowing the rules, regulations, and policies of the College.
- Expected to meet the course and graduation requirements of the students' program of study.
- Expected to keep college records current with up-to-date addresses and other information.
- Expected to meet with an academic advisor at least once each term.
- Expected to comply with the College rules, regulations, and policies; and
- Expected to behave in a manner which demonstrates respect for others and self.

Student Rights Under the Family Educational Rights and Privacy Act (FERPA)

FERPA affords students certain rights with respect to their educational records.

7. The right to inspect and review the student's educational records.
8. The right to request the amendment of the student's educational records to ensure that they are not inaccurate, misleading, or otherwise in violation of the student's privacy or other rights.
9. The right to consent to disclosure of personally identifiable information contained in the student's educational records, except to the extent that FERPA authorizes disclosures without consent.
10. The right to file with the U.S. Department of Education a complaint concerning alleged failures by North Florida College to comply with the requirements of FERPA. Please write to U.S. Department of Education, 600 Independence Ave. S.W., Washington, D.C. 20203.
11. The right to obtain a copy of North Florida College's student record policy from the Office of the Registrar, North Florida College, 325 NW Turner Davis Drive, Madison, Florida 32340.

Vulnerable Persons Act

All faculty and staff of North Florida College are required by law to report any type of abuse of minors that they witness or become aware of through written or verbal communication, regardless of the time that has passed since the abuse occurred. Students are advised that any information, written or verbal, communicated in this class, or to the instructor in any way, in regards to any willful act or threatened act that results in any physical, mental, or sexual abuse, injury, or harm that causes or is likely to cause harm to the physical, mental, or emotional health of another to be significantly impaired is subject to disclosure as required per Florida State Statutes.



North Florida College – Quality Enhancement Plan
Career Compass

QEP Outcome: NFC will increase the student success of first-generation PELL students seeking an associate in arts degree, with success defined as 150% completion and subsequent transfer into a baccalaureate degree program.

Fill this form out and return to your instructor **ON THE FIRST DAY OF CLASS**

NORTH FLORIDA COLLEGE
PHY 1020C Fundamentals of Physics
Spring 2025

ACADEMIC HONESTY: North Florida College follows the premise that each student has the sole responsibility:

- to uphold high standards of academic honesty & intellectual ownership;
- to refuse to tolerate academic dishonesty in the college community;
- to foster a high sense of honor & social responsibility on the part of all students.

As a member of North Florida College student body, I will not lie, cheat, or steal in any endeavor related to my academic pursuits, nor will I tolerate this behavior in others. Sign your name to the attached sheet and return to your instructor.

Each member of the college community is responsible for abiding Academic Honesty at all times.

Date

Printed Name

Signature

I understand the responsibilities I have in this class regarding: (please initial each part on the line, and sign below)

_____ attendance policy and absences

_____ test policy

_____ grades and how they are calculated

Signature

Date
