



NORTH FLORIDA  
COLLEGE

North Florida College  
**PHY 2048 – Physics with Calculus I**  
**Course Syllabus**

Notice: Due to the ever-evolving climate of COVID-19, this syllabus is subject to change. Please log into D2L for the most up-to-date information.

|   |                   |  |
|---|-------------------|--|
| <b>Term:</b> Fall 2022                  | <b>CRN:</b> 10154 | <b>Course Number:</b> PHY 2048                           |
| <b>Section:</b> 1                       |                   | <b>Course Title:</b> Physics with Calculus I             |
| <b>Meeting Location:</b> B34 R112       |                   | <b>Meet Day(s):</b> Tue/Thu <b>Time:</b> 12:45 – 2:25 pm |
| <b>Instructor:</b> Dr. G. Maresch       |                   | <b>Office Location:</b> B34 R111                         |
| <b>Telephone:</b> (850) 973-1632        |                   | <b>Email:</b> mareschg@nfc.edu                           |
| <b>Department Chair:</b> Dr. G. Maresch |                   | <b>Department Chair Email:</b> mareschg@nfc.edu          |

**Course Description:** 4 Credits, 4 Hours - Lecture. (Fall) This is an introductory calculus-based physics lecture course for students majoring in engineering physics and other sciences, and includes scalars and vectors, kinematics, Newton's laws and momentum, circular and rotational motion and dynamics, work and energy, fluid mechanics, vibrations and waves, heat and thermodynamics.

**Prerequisites:** Minimum grade of "C" in MAC 2311 or equivalent Calculus I.

**Corequisites:** PHY 2048L

**Instructor response time for phone and email messages:**

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:

1. The subject line must include your course name
2. Your full name in the body of the email
3. 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.

**Office Hours:**

Monday 10:45 – 2:00, 3:15 – 4:30

Tuesday 12:00 – 12:45, 3:30 – 4:30

Wednesday 12:00 – 2:00

Thursday 11:00 – 12:45

**Required text:**

Modified Mastering Physics with Pearson eText -- Combo Access Card -- for Physics for Scientists and Engineers: A Strategic Approach with Modern Physics 18 weeks

Edition: 5<sup>th</sup>, ISBN: 9780137319503, Author: Douglas C. Giancoli (Pearson PPC), Publisher: Pearson

**Additional resource materials and/or supplies:**

Internet access to MasteringPhysics is essential to this course. Your **courseID** is found in the Student Registration Information file on D2L > Content > General Information. A graphing calculator is required (TI-83 or TI-84, Texas Instruments TI-84 Plus Graphing Calculator recommended. If you have a TI-83 calculator, you will not need to purchase the TI-84). Free tutoring resources are available at the Academic Success Center and at SMARTHINKING (access through

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NFC.edu > Current Students > Learning Resources). Optional download of free versions of FireFox, Chrome, QuickTime or ShockWavePlayer may be required.

### Minimum technological requirements and skills:

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. 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 (examples will be demonstrated in class if applicable). Knowledge of correct email use and protocol is expected.

### Course grading/evaluations:

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 a 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. They may be assigned online or given at the beginning of the class or before the end of class. Be on time in class – quizzes will not be announced. A missed quiz cannot be made up, whatever the reason may be. From the number of all quizzes, the one with the lowest score can be dropped.

The mid-term exam 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. The mid-term exam contributes with 25 % to the final grade. A comprehensive Final Exam contributes 25 % to the final grade. Tests and exams cannot be made up unless arrangements are made in advance.

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] |
| Mid-Term Exam        | 25 %             | C : [ 70, < 80] |
| Final Exam           | 25 %             | D : [ 60, < 70] |
|                      |                  | F : [ 0, < 60]  |

### Response time for posting of grades on D2L:

Generally, I will grade and post your grades 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.

### Midterm and/or final exam information:

Midterm Exam will be about in the middle of the semester and will be announced a week in advance.

**Final Exam Date and Time:** Thursday, Dec. 8, 2022 2:30 – 4:30 pm

Location: B34 R112

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

### GENERAL EDUCATION PROGRAM LEARNING OUTCOMES

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.

## COURSE LEVEL STUDENT LEARNING OUTCOMES

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

1. Demonstrate a conceptual understanding of concepts in physics.
2. Be able to solve fundamental problems in physics.
3. Be able to explain the application of fundamental laws in physics and how they relate to current theories.
4. Be able to read and interpret scientific data reported in graphical and other mathematical formats.
5. Be able to relate historic cultural influences on milestones in natural science.

| Course Level SLO # | Gen Ed/Program Outcome # | <u>Summative Assessments</u><br>(A student artifact: A specific assignment that could be submitted as evidence of a General Education competency) |
|--------------------|--------------------------|---|
| 1                  | 2                        | Final Exam: find and apply one fundamental concept to problem solving   |
| 2                  | 2,4                      | Final Exam: solve a typical problem in College Physics  |
| 3                  | 2                        | Final Exam: explain the meaning of a fundamental law of physics   |
| 4                  | 1,2                      | Final Exam: find and extract applicable information from a table or graph   |
| 5                  | 3                        | Final Exam: name three foreign cultures and their contribution(s) to natural science  |
| 6                  | 4                        | Final Exam: solve a typical problem in College Physics using a graphing calculator.   |

## COURSE CONTENT AND SCHEDULE

No class meetings on Labor Day, Sept. 5, 2022, Veterans Day, Nov. 11, 2022, and Thanksgiving, Nov. 23 - 25, 2022.

### Early Alerts: Full Term

#1: September 6-7, 2022

#2: October 5-6, 2022

### Early Alerts: Mini Term A

September 6-7, 2022

### Early Alerts: Mini Term B

November 1-2, 2022

The following is a tentative schedule and subject to change. The exact date for the mid-term exam will be announced in class one week prior to the exam.

|         |   |
|---------|---|
| Week 1  | Science and Measurement                       |
| Week 2  | Describing Motion: Kinematics                 |
| Week 3  | Kinematics in Two and Three Dimensions        |
| Week 4  | Dynamics: Newton's Laws of Motion             |
| Week 5  | Friction, Circular Motion and Gravitation     |
| Week 6  | Work and Energy                               |
| Week 7  | Conservation of Energy, Linear Momentum       |
| Week 8  | Review Mid-Term Chapters 1 ... 9              |
| Week 9  | Rotational Motion and Angular Momentum        |
| Week 10 | Static Equilibrium and Fluids                 |
| Week 11 | Harmonic Oscillator and Waves                 |
| Week 12 | Kinetic Theory of Gases and the Ideal Gas Law |
| Week 13 | Heat and the First Law of Thermodynamics      |
| Week 14 | Entropy and the Second Law of Thermodynamics  |
| Week 15 | Special Topics and Review                     |
| Week 16 | Review Final Exam                             |

## **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.

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.

## **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](http://www.nfc.edu). All cases of academic dishonesty will be reported to the Office of Academic Affairs.

Instructors use [www.turnitin.com](http://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**

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 at all times. 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):

#### On Campus:

Monday – Thursday 8:00 a.m. – 7:00 p.m.  
Friday 8:00 a.m. – 4:30 p.m.

#### Virtual appointments:

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. Students may make an appointment to receive help or use computers during the posted hours. 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](mailto: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 faculty-led 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.

**By appointment tutoring sessions:** Students may make an appointment to receive tutoring services during the posted hours.

#### By appointment:

Monday – Friday 8:00 a.m. – 4:30 p.m.

#### Virtual Hours:

Monday-Thursday 8:00 a.m. – 5:30 p.m.

Friday 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>.

### Smarthinking Online Tutoring

Online tutoring is available to NFC students 24 hours a day, 7 days a week, through Smarthinking. Each NFC student has access to a Smarthinking account and 240 minutes of free tutoring services. Located in D2L, Smarthinking offers a variety of tutoring services including drop-in live sessions, scheduled sessions, submit a question, and writing center submissions. Smarthinking covers a wide range of subjects like basic math, algebra, statistics, trigonometry, calculus, chemistry, physics, accounting, reading and writing (all subjects). Sessions are archived and available for students to review at any time for studying or test preparation.

**For more information about accessing the Smarthinking online tutoring service, see the ASC webpage or contact Elizabeth Gonzales at [gonzalese@nfc.edu](mailto:gonzalese@nfc.edu) or (850) 973-1719 and/or Jamen Brock at [brockja@nfc.edu](mailto:brockja@nfc.edu) or (850) 973-9411.**

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](mailto:gonzalese@nfc.edu)
- Jamen Brock, Tutor Lab Manager/Academic Specialist (850) 973-9411 / [brockja@nfc.edu](mailto:brockja@nfc.edu)
- Academic Success Center (ASC) (850) 973-1624 / [asc@nfc.edu](mailto:asc@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. Accommodations 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:

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<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](mailto: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 on the basis of 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](mailto: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 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.

1. The right to inspect and review the student's educational records.

2. 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.
3. 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.
4. 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.
5. 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.



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

NORTH FLORIDA COLLEGE  
PHY 2048                      Physics with Calculus I  
Fall 2022

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  |
| _____     | _____ |