Open Textbook Collaborative

A New Jersey Higher Education OER Project

Course Catalog

https://bit.ly/OpenTextCollabNJ

February 2024

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Course Catalog Information

Funding Statement
Materials in the Open Textbook Collaborative Project are funded by the Fund for the Improvement of Postsecondary Education (FIPSE) of the U.S. Department of Education for the Open Textbooks Pilot grant awarded to Middlesex College (Edison, NJ) from 2021 to 2023 and extended through 2024.

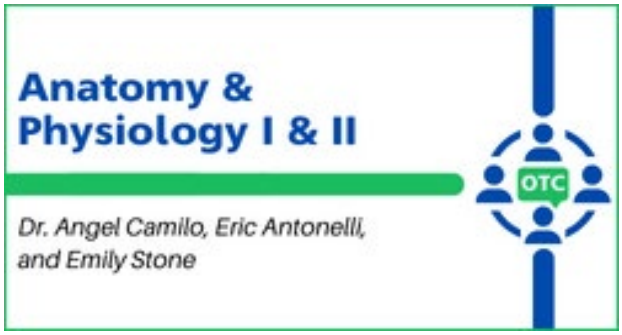
Open Textbook Collaborative
The Open Textbook Collaborative (OTC) project is a statewide project managed by Middlesex College along with assistance from Brookdale Community College, Ocean County College, Passaic County Community College, and Rowan University.

The project engages a consortium of New Jersey community colleges, four-year colleges and universities, and workforce partners to develop open educational resources (OER) in career and technical education STEM courses.

The courses align to career pathways in New Jersey's growth industries including **Health Services, Innovation & Technology, Energy & Infrastructure , and Global Manufacturing and Supply Chain Management** as identified by the *New Jersey Council of Community Colleges*.

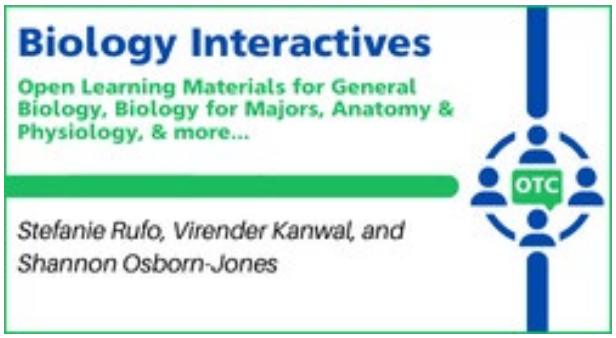
To learn more about the Open Textbook Collaborative, visit
https://middlesexcc.libguides.com/OTCProject

Biology & Chemistry Courses



Anatomy & Physiology I & II contains a database of microscopic images that cover the slides typically seen in Anatomy and Physiology I & II courses. These can also be used in General Biology I & II, as well as a Biology and the Human Body course. The slides each have multiple magnification strengths to aid in the comprehension of cellular and gross anatomy.

Forthcoming, Spring 2024
Health Services



Biology Interactives contains pre and post-lab assignments and assessments consisting of short, digital, and interactive content to supplement lectures. These materials are relevant to courses in General Biology, Biology for Majors, Anatomy & Physiology and others.

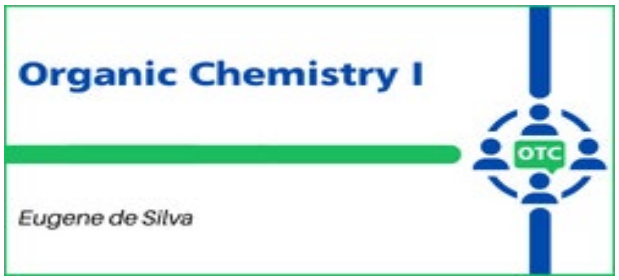
Forthcoming, Summer 2024
Health Services

https://opennj.net/chemistry-grinias

Chemistry I & II provides supplemental materials for a general chemistry college course. It is organized into sixteen units (Chemistry 1 Units 1-8 and Chemistry 2 Units 9-16) with each including a pre-lecture reading assignment, post-lecture problem set, and videos demonstrating key problem-solving skills

It is designed to be used alongside the OpenStax Chemistry 2e textbook.

Original Publication Year 2023
Health Services

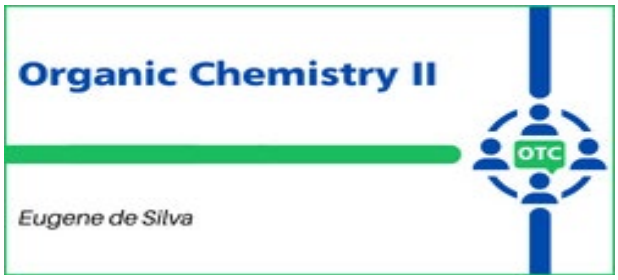


https://opennj.net/organic-chemistry

I appreciate how concise the information is in the OER format, as it cuts from the unnecessary information given from our current textbook, but I believe that practice questions or textbook questions with answers could help bolster the effectiveness of OER as a whole.
– Student, Fall 2022

Organic Chemistry I covers organic chemistry reactions and mechanisms that are used in any second year, college-level, organic chemistry course. Book one (of two) introduces students to the fundamentals of organic chemistry, and then moves on to discuss the chemistry of different organic compounds. It includes 11 chapters and is written in the format of lecture notes to make it convenient for student learning.

Original Publication Year 2022
Health Services



https://opennj.net/organic-chemistry

I believe that the OER provided gives a concise, informative look on the important topics to be discussed in curriculum...
– Student, Spring 2023

Organic Chemistry II teaches organic chemistry reactions and mechanisms that are used in any second year, college-level, organic chemistry course. Book two (of two) continues with the study of different organic compounds and concludes by introducing students to spectroscopic analytical techniques such as UV/VIS, IR, NMR, and Mass spectroscopy. It includes 11 chapters and is written in the format of lecture notes to make it convenient for student learning.

Original Publication Year 2023
Health Services

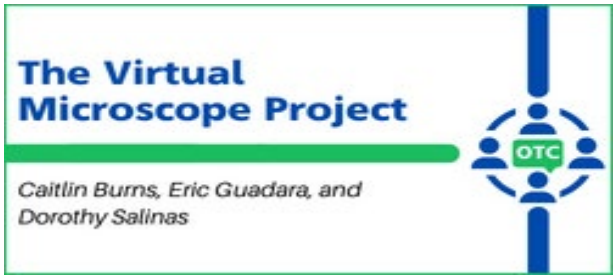
https://opennj.net/Microbiology

They were much more organized and easy to understand, and gave useful direct information rather than scouring through filler information not pertaining to the chapter or subject at hand
– Student, Fall 2023

Principles of Microbiology is a lab manual designed for an introductory allied health course for students who plan to apply to nursing, dental hygiene, and related clinical programs. Content covered includes safety, microscopy, aseptic technique, staining, control of growth, survey of eukaryotes, and identification of bacteria. Each of 10 modules include an introduction, experimental procedures with detailed background principles and learning outcomes; data tables to record observations; and a report with follow-up questions for analysis of results.

The manual is suitable for use with OpenStax Microbiology.

Most Recent Publication Year 2024
Health Services

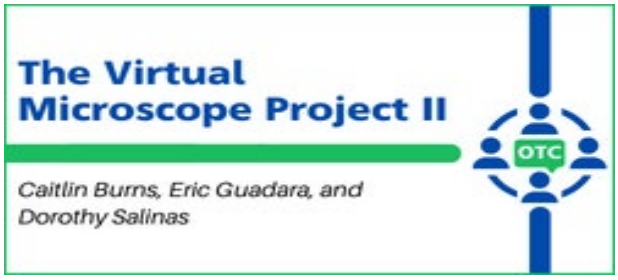


https://opennj.net/virtual-microscope

The virtual microscope gave me a very clear understanding on how to use a microscope. If given a real microscope in front of me, I would be able to use it perfectly fine.
– Student, Summer 2022

The Virtual Microscope is a browser-based tool that allows students to mimic the workings of a physical microscope. The original version contains a slide box with images utilized in anatomy, microbiology, general biology, physiology, and human biology. Instructions for use are included.

Original Publication Year 2022
Health Services



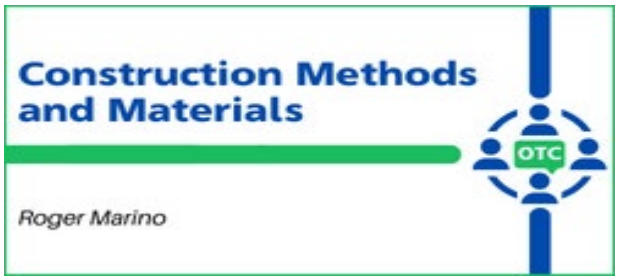
https://opennj.net/virtual-microscope

I thought the class was well planned out and the learning material was high quality. This was just like when I took AP biology in high school, but with better lab experiments and more in-depth learning.
– Student, Fall 2022

Virtual Microscope II, a downloadable tool, builds upon the previous model by adding an extended slide box that will include images utilized in anatomy, microbiology, general biology, physiology, and human biology. It also includes a customization option to enable users to create their own "virtual slide box" to fit their own course learning outcomes. Instructions for download and use are included.

Most Recent Publication Year 2024
Health Services

Building & Construction Courses

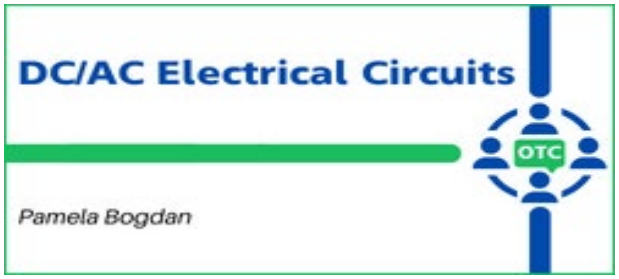


https://opennj.net/construction-marino

I believe OER courses can aid in learning in that it can be updated and added to while a textbook is printed. I have taken courses with OER and save the links and go back and look things over after the course has ended.
-- Student, Fall 2022

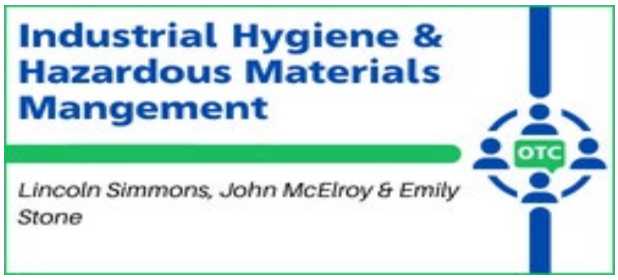
Construction Methods and Materials introduces students to various aspects of the construction industry. It presents a generalized approach to the steps required to develop a particular parcel of land: including site selection considerations, awareness of required jurisdictional permits, construction techniques and the selection of appropriate construction materials. The course consists of four PowerPoint lectures and four weekly homework assignments.

Original Publication Year 2022
Energy and Infrastructure



DC/AC Electric Circuits translates existing OER instructional materials concerning DC and AC electrical circuits -- both lecture and lab – from English into Spanish.

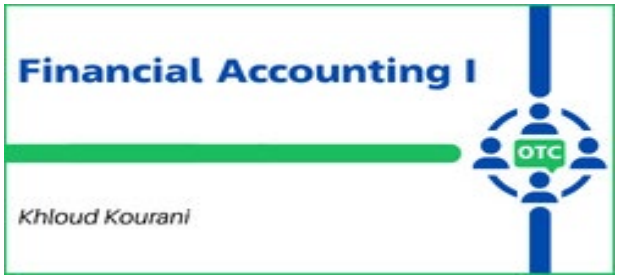
Forthcoming Spring 2024
Energy & Infrastructure



Industrial Hygiene & Hazardous Materials Management is a lab manual that also offers students supporting course materials that will serve in a variety of Environmental Science courses. The content instructs students to develop experiments and record their findings correctly.

Forthcoming Spring 2024
Energy & Infrastructure

Business & Economic Courses

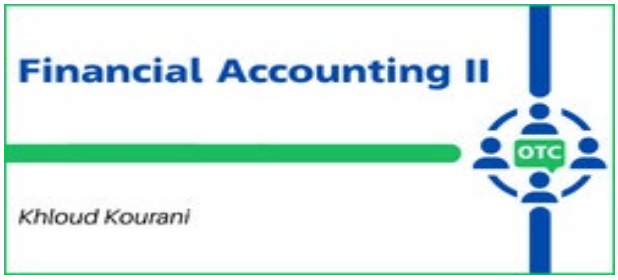


https://opennj.net/financial-accounting

I'm glad Professor Kourani has introduced me to OER the right way. The material is well organized by the professor and has made it easy to keep up with the course -- Student, Spring 2023

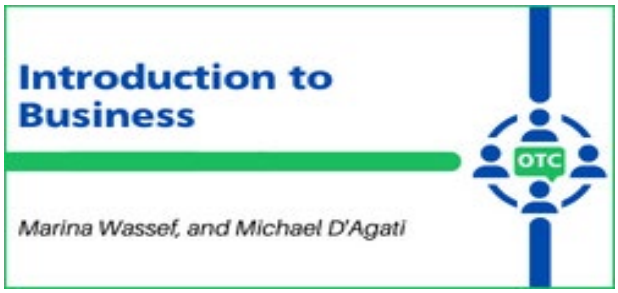
Financial Accounting I introduces students to financial accounting by teaching about balance sheets, the accounting cycle, receivables, and long-lived assets. The course consists of a downloadable 10-chapter textbook with text, self-check assignments, and comprehension problems.

Original Publication Year 2022
Global Manufacturing & Supply Chain Management



Financial Accounting II covers the second half of a traditional accounting sequence. Starting with Chapter 11, it is a full textbook with original and remixed content, instructional videos, and exams. Students will be provided examples and exercises that are clear, easy to follow, and easily accessible.

Original Publication Year 2023
Global Manufacturing & Supply Chain Management



https://opennj.net/supply-chain

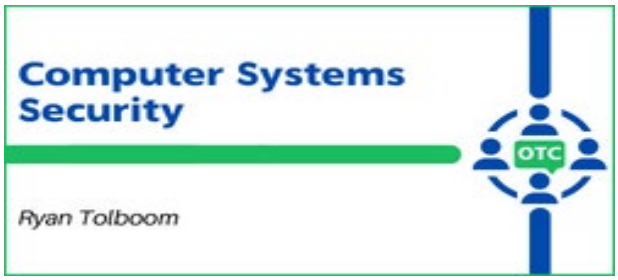
I like how OER materials were provided for us. Textbooks are extremely expensive, and difficult to transport. With OER, I am able to access materials on my laptop and cell phone.
– Student, Fall 2022

Introduction to Business: Supply Chain Management defines the supply chain as well as the various components that go into it. It introduces students to the many different areas involved in the supply chain from procurement, to operations, to distribution. The chapter discusses inventory as well as some predictive models for performing the task.

This chapter is meant to align with the existing OpenStax Introduction to Business Textbook.

Original Publication Year 2022
Global Manufacturing & Supply Chain Management

Computer Science Courses

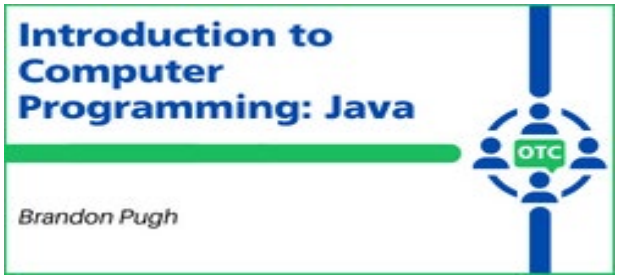


http://opennj.net/l/computer-security

I feel as though the quality of the OER was better than other text materials because it was curated specifically for this class without any other unnecessary information/sponsored software
– Student, Fall 2022

Computer Systems Security helps students to prevent, identify, understand, and recover from attacks against computer systems. The course consists of a fully developed, downloadable textbook with text, lab activities, and review questions. It is organized into ten chapters.

Original Publication Year 2022
Innovation & Technology

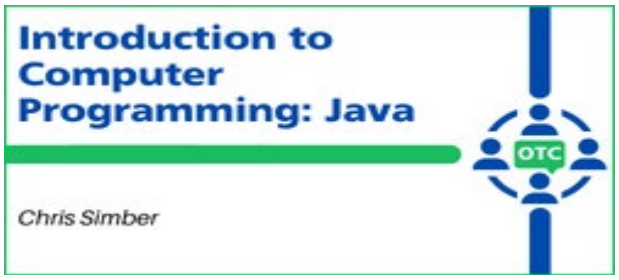


https://opennj.net/java-pugh

I prefer OER materials over the typical expensive textbooks that are not completely necessary to teach courses as such.
– Student, Fall 2023

Introduction to Computer Programming: Java is a "Complete Digital Toolkit" with videos and weekly assignments designed to stimulate user-focused creativity. Topics covered include Objects and Classes (with Abstraction and Modularization), Conditional Statements/Loops, Collections, and Error Handling.

Original Publication Year 2023
Innovation & Technology

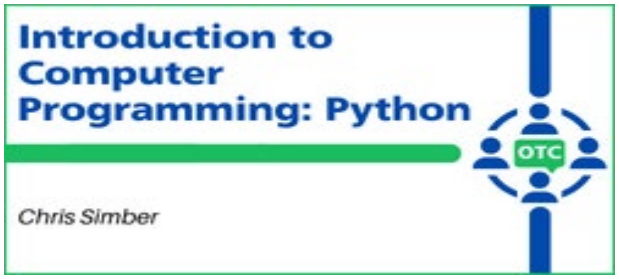


https://opennj.net/java-simber

I believe this is better as it is showing that the instructor actually cares about looking for the material unlike just putting something which may or may not align with what they are teaching.
-- Student, Fall 2022

Introduction to Computer Programming: Java is designed for use in an introductory course in programming using the Java language. The book introduces general computer information and basic computer operations, as well as software engineering principles and processes used in industry to implement computer-based solutions. Algorithm development and problem-solving techniques are introduced as well. It consists of a downloadable textbook with text content, review questions, and short answer exercises, broken into eleven chapters.

Original Publication Year 2022
Innovation & Technology



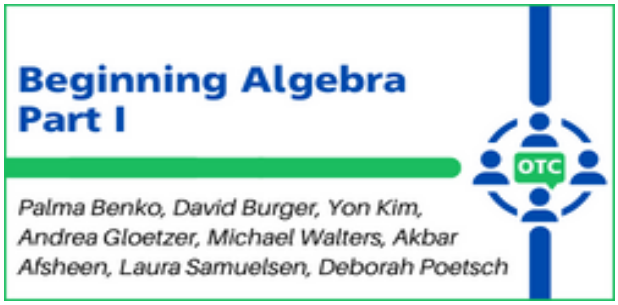
https://opennj.net/python

I really enjoyed the OER material. Even better having the Professor that wrote the book, teach the class.
-- Student, Summer 2022

Introduction to Computer Programming: Python is designed for use in an introductory course in programming using the Python language, and is intended for students who are not familiar with computer programming. The goal is to provide students with an overview of computers, software engineering tools and techniques, and to introduce programming in Python quickly. The course consists of a textbook, thirteen lectures, and eleven assignment pages.

Original Publication Year 2022
Innovation & Technology

Mathematics Courses

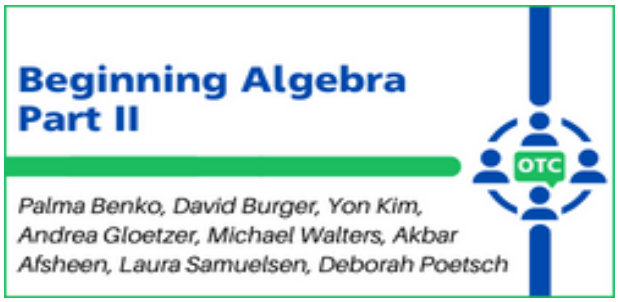


https://opennj.net/beginning-algebra

The OER has made the class more convenient than lugging a textbook around.
– Student, Fall 2022

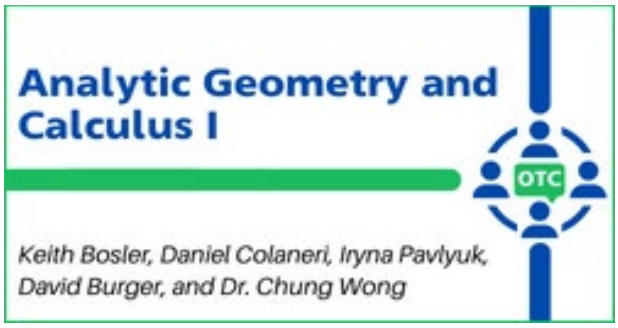
Beginning Algebra Part I presents basic college level algebra concepts such as linear equations, inequalities, and polynomials. This course, broken into six chapters, includes an original pdf workbook for Developmental Algebra w/examples and solutions, a guide for instructors on how to teach the OER materials, as well as practice tests and sample exams.

Original Publication Year 2022
Global Manufacturing & Supply Chain Management



Beginning Algebra Part II, the second in a series, presents basic college level algebra concepts. As with **Beginning Algebra Part I**, it includes an original pdf workbook for Developmental Algebra w/examples and solutions, a guide for instructors covering how to teach the OER materials, as well as practice tests and sample exams.

Original Publication Year 2023
Global Manufacturing & Supply Chain Management



https://opennj.net/analyticgeom_calc

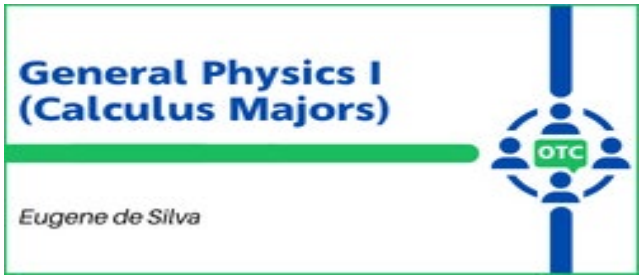
The OER materials for this calculus course were quite comprehensive and I doubt that a paid textbook would give me any significant extra knowledge.
– Student, Fall 2022

Analytic Geometry and Calculus I provides definitions and theorems that focus on limits and continuity, derivatives, and integration techniques. The course consists of a downloadable workbook with examples and practice problems broken into four chapters.

This course supplements OpenStax Calculus.

Original Publication Year 2022
Global Manufacturing & Supply Chain Management

Physics Courses



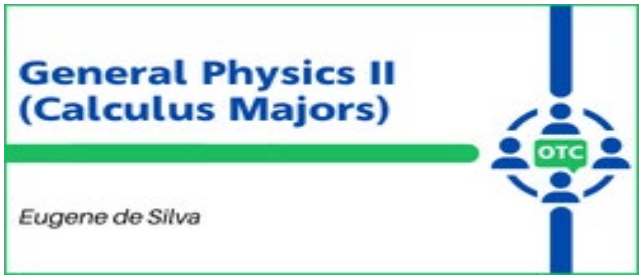
https://opennj.net/GENPHYSICS_CALC

I have enjoyed the materials presented in this class as they are not only clear and concise, but also allow for the student to learn the material covered in a way that suits their needs.
– Student, Fall 2023

General Physics I for Calculus Majors is the first of two books of a calculus-based-physics course. It provides a rigorous introduction to the fundamentals of Newtonian mechanics. Further topics include oscillatory motion, resonance, mechanical waves, sound, standing waves, and superposition, and Newton's law of universal gravitation and orbital motion.

The course builds upon OpenStax College Physics.

Forthcoming, Fall 2023
Energy and Infrastructure



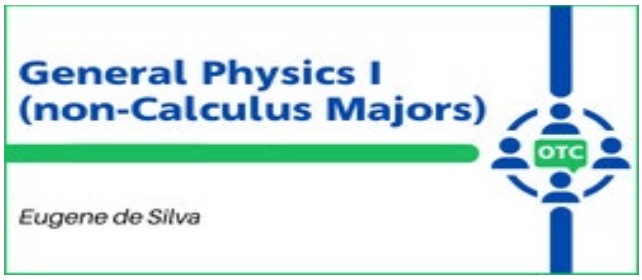
https://opennj.net/GENPHYSICSII_CALC

I previously took a course equivalent to this one, and I struggled greatly because of the rigor of the class and the concepts being taught. However, this course has changed my perspective on how I feel about physics, and this is due to the OER format. I am finally able to understand concepts that I previously believed I would never understand. The OER format is quick and easy to navigate, and I think the textbook is written in a way that makes it easier to understand the concepts.
– Student, Fall 2023

General Physics II for Calculus Majors is the second of two books of a calculus-based-physics course. It covers thermodynamics and electromagnetism, as well as electricity and magnetism, including electrostatics, Gauss's law, magnetostatics, Ampere's law, the Biot-Savart law, circuit analysis and Kirchhoff's rules, electromagnetic induction and Faraday's law, Maxwell's equations and electromagnetic waves.

The course builds upon OpenStax College Physics.

Forthcoming, Fall 2023
Energy and Infrastructure



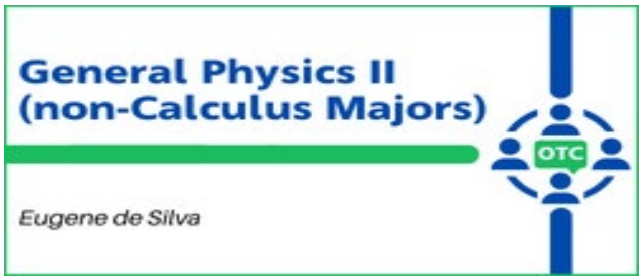
https://opennj.net/GENPHYSICS_NON-CALC

The OER is very helpful in giving variation among the explanations of difficult concepts. One explanation develops a base understanding, but further explanation coupled with multiple practice examples creates a firm foundation on the topics covered.
– Student, Fall 2023

General Physics I for non-Calculus Majors is the first of two books covering the general application of mathematics/algebra/trigonometry in physics. It covers fundamental concepts of mechanics, fluids, and thermodynamics. Further topics include fluid statics and dynamics, ideal gases, heat and temperature, the laws of thermodynamics, entropy, heat engines, electromagnetism, optics, and modern physics.

The course builds upon OpenStax College Physics.

Forthcoming, Fall 2023
Energy and Infrastructure



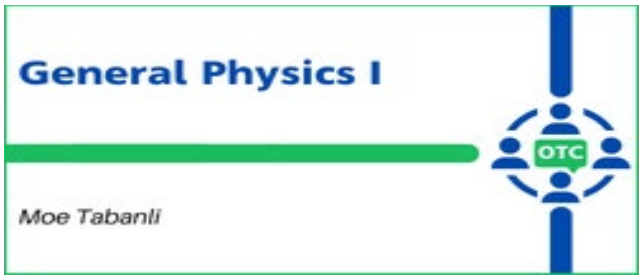
https://opennj.net/GENPHYSICSII_NON-CAL

...Because it is online and easily accessible, I can access it from anywhere, even my phone. The quality of the textbook is very high as well. The chapters have the information I need without too much filler and the pages are organized in a very intuitive way.
– Student, Fall 2023

General Physics II for non-Calculus Majors is the second of two books covering the general application of mathematics/algebra/trigonometry in physics. Topics include a study of oscillatory motion, mechanical waves, sound, and a discussion of human hearing. It also covers both geometric and physical optics, including image formation, interference, and diffraction.

The course builds upon an existing OpenStax College Physics.

Forthcoming, Fall 2023
Energy and Infrastructure



https://opennj.net//physics-tabanli

The examples and glossary summaries in the OER Material were very informative and helpful in learning for the class.
– Student, Fall 2022

General Physics I emphasizes theoretical models and basic physical principles. Topics include kinematics, dynamics, conservation of energy and momentum, rotational motion, gravity, waves, temperature and heat and thermodynamics. The course consists of eight PDF lecture slides and four video recordings of lectures.

This course supplements OpenStax College Physics.

Original Publication Year 2022
Energy and Infrastructure

History of the Open Textbook Collaborative

The Open Textbook Collaborative (OTC) is a statewide project managed by Middlesex College with assistance from Brookdale Community College, Ocean County College, Passaic County Community College, and Rowan University.

The project engages a consortium of New Jersey community colleges, four-year colleges and universities, and workforce partners to develop open educational resources (OER) in career and technical education STEM courses.

The courses align to career pathways in New Jersey's growth industries including Health Services, Innovation & Technology, Energy & Infrastructure , and Global Manufacturing and Supply Chain Management as identified by the *New Jersey Council of Community Colleges*. Through this project, the Project Team creates a community college-led, state-wide collaborative in New Jersey to fill an important need for open textbooks and other learning resources.

Adoption of the OERs developed from this project will:

- Reduce the cost burdens of college for students.
- Allow students to complete their coursework in these industry programs.
- Keep students on the path to career opportunities in growth industries.

This grant project is administered by Middlesex College staff:

- Marilyn N. Ochoa, Project Director (2020 - 2023) & Principal Investigator (2020 - Present)
- Steve Chudnick, Project Director (2024 - Present) & Project Coordinator (2021 – 2023)
- Yamillet Febo-Gomez, Grants Director
- Mark McCormick, President
- Linda Scherr, Vice President Academic Affairs

Advisory Council

- Marilyn N. Ochoa, Advisory Council Chair (2021 – 2023), Middlesex College; VALE
- Jeffrey Carroll, Rutgers University
- Steve Chudnick, Advisory Council Chair (2024 – Present), Middlesex College
- Greg Fallon, Passaic County Community College (2021 – 2022), retired
- Jake Farbman, New Jersey Council of Community Colleges (NJCC)
- Debbie Gaspar, Rowan University (2021 – 2023), Retired
- Joshua Gaul, Edge, Inc.
- Forough Ghahramani, Edge, Inc.
- Robert Hilliker, Rowan University; VALE
- Sabrina Johnson-Taylor, Passaic County Community College (2023 – Present)
- Ann Hoang, New Jersey Institute of Technology
- M. Murphy, Vizulingo Inc. (Information technology)

- Thea Olsen, NJTransfer
- Donna Rosinski-Kauz, Ocean County College
- Susan Scarangella, Brookdale Community College
- Joseph A Schumacher, Ardagh Glass North America (Global manufacturing)
- Michael Seitel, Norwalt Inc. (Global manufacturing)
- Mark V. Sullivan, SobekDigital
- Tonisha Taylor, Passaic County Community College (2021 – 2022)
- Karla Zahn, Ellucian, LLC. (2022 – Present)

Project Expansion Partner Colleges Representatives: These colleges support and participate in the creation, dissemination, and adoption of OER and OpenPublishing tools created through this grant. Representatives from each college serve on the Advisory Council**.**

- Janet Marler, Atlantic Cape Community College
- David Marks, Bergen Community College
- Dr. Teresa Smith, Camden County College
- Heather Craven, County College of Morris
- Pamela Price, Mercer County Community College
- Melanie Morris, Raritan Valley Community College
- Rachel Pieters, Rowan College at Burlington County
- Beth Beecroft**,** Rowan College of South Jersey
- Stephanie Cooper, Sussex County Community College
- Richard Morris III, Union County College

Curriculum Committees and Course Design Teams

- Joshua Gaul, Educational Technology Manager, Edge
- Robert Hilliker, Curriculum Council Manager (2021 – 2023), Rowan University

Energy and Infrastructure Curriculum Committee Membership/Design Team

- Robert Hilliker, Chair (2024 – Present), Rowan University
- Debbie Gaspar**,** Chair, Rowan University (2021 – 2023), retired
- Jessica Hamilton, Librarian, Rowan College of South Jersey (2021)
- Kelly Hayden**,** Librarian, Rowan College of South Jersey (2022 – 2023)
- Rachel Pieters, Librarian, Rowan College at Burlington County (2023 – Present)
- Nasra Sultana, Associate Professor of Physics, Rowan College of South Jersey
- Mike Benson, Instructional Designer, Rowan University (2021)
- Mike Sullivan, Instructional Designer, Middlesex College (2022 – Present)

Global Manufacturing & Supply Chain Management Curriculum Committee Membership/Design Team

- Sabrina Johnson-Taylor**,** Chair, Passaic County Community College (2023 – Present)
- Greg Fallon, Co-Chair, Passaic County Community College (2021-22)
- Tonisha Taylor, Co-Chair, Passaic County Community College (2021-22)
- Annemarie Roscello, Librarian, Bergen Community College
- Paula Williams, Instructional Designer, Bergen Community College

Health Services Curriculum Committee Membership/Design Team

- Susan Scarangella**,** Chair, Health Services Admin., Brookdale Community College
- Matt Bridgeman**,** Librarian, Rutgers University
- Georgia Cassidy**,** Instructor, Nursing, Brookdale Community College
- Steve Chudnick, Project Coordinator, Middlesex College
- Michelle Halat, Asst. Professor of Nursing, Brookdale Community College, (2021 – 2023)
- Jonathan Shaloum, Instructional Designer, Brookdale Community College
- Stephen Fowler**,** Instructional Designer, Brookdale Community College

Innovation & Technology Curriculum Committee Membership/Design Team

- Donna Rosinski-Kauz, Chair, Ocean County College
- Madison Akins, Lecturer, Ocean County College
- Alison Cole, Librarian, VALE (2023 – Present), Felician University (2021 – 2023)
- Christina Getaz**,** Member, Caldwell University
- Forough Ghahramani, Member, Edge, Inc.
- Dr. Queen E. Okike-Iroka, Mercer County Community College
- Helga Paggi, Lecturer, Ocean County College
- Laura Wingler**,** Instructional Designer, Ocean County College

Open Textbook Collaborative Adopting & Adapting

To promote usage, adoption, adaptation, and sustainability of our OTC Faculty-Created OERs, the OTC is offering stipends to faculty choosing to utilize our OERs and helping us assess these projects by administering our surveys for faculty and students.

Should a faculty adopter adapt the materials they utilize from the OTC to suit their particular needs and submit their OER adaptation to OpenNJ we will pay an additional $250 on top of the Adoption stipend.

Amount Given to the Original OTC Authors	**Amount for Faculty Adopters (Based on how much of OER used)**	**Extra Amount for Adaptations Added to OTC***
Up to $2,500	Up to $250	$250
$2,501 - $5,000	Up to $500	$250
$5,001 - $10,000	Up to $1,000	$250
$10,000 +	Up to $1,500	$250

*In order to receive the extra stipend, faculty will need to deposit their adaptation into OpenNJ with a CC-BY-NC License

For more information, please contact Steve Chudnick or Robert Hilliker.

Open Textbook Collaborative Reviews

Review an Open Textbook

The **Open Textbook Collaborative** (OTC) is looking for qualified textbook reviewers from **New Jersey** to review existing open textbooks and ancillary materials in the OTC Collection.

Application process

Faculty interested in reviewing an open textbook in the OTC Collection should download the application form. We ask that you provide your institutional email with the courses you have taught that are relevant to the textbook you would like to review, and that you consider adopting the reviewed textbook if you find its quality and contents are appropriate for your course. Once complete, email the form to **Steve Chudnick and Robert Hilliker.**

Selection process

We accept open textbook review applications from post-secondary instructors in **New Jersey**, who have teaching experience in the subject of the text they would like to review. This includes PhD candidates who have completed their qualifying exams and are involved in teaching.

Please note that in order to encourage a diversity of voices in the reviews, we limit the number of reviews to one per person.

Review process

If your application is accepted, we will set you up with the review form. You can preview the questions on the review form by downloading and filling out the **OTC Reviewer Template & Rubric Form** (CC-BY-NC). You will have three months to write and submit your review to **Steve Chudnick and Robert Hilliker**.

All submitted reviews must be approved by the OTC to ensure they are complete and comprehensive. Once a review is approved, it will be published by the reviewed textbook in the OTC under a CC-BY-NC 4.0 license. The copyright for each review is owned by the reviewer.

An honorarium of **$250** will be paid to eligible and qualified individuals who complete, submit, and permit the open publication of their review for a textbook or equivalent in the **OTC Collection**. For ancillary materials, such as quiz banks and lecture slides, the honorarium will be **$100**.

For more information and sample reviews, visit **here** and contact **Steve Chudnick** or **Robert Hilliker** with any questions.

A New Jersey Higher Education OER Project
https://bit.ly/OpenTextCollabNJ