



DMS 226-01 SYLLABUS

SPRING 2016 SEMESTER	15 WEEKS LENGTH OF SEMESTER
DMS 226-01 COURSE CODE	ULTRASOUND PHYSICS II COURSE TITLE
1 LECTURE HOUR/1 CREDIT LECTURE, LAB, CLINICAL HOURS / CREDITS	NAH 1010 CLASSROOM
LAURIE ROHRMAN, RDMS, RVT INSTRUCTOR'S NAME; TITLE	NAH 1000H/415-2191 OFFICE LOCATION/PHONE NUMBER
LRohrman@rcgc.edu RCGC EMAIL ADDRESS	BY APPOINTMENT OFFICE HOURS
<i>UNDERSTANDING ULTRASOUND PHYSICS</i> , Sidney Edelman, Ph.D., 3rd Edition, Esp-Inc REQUIRED TEXTS	

Please see current textbook prices at www.rcgc.bncollege.com.

COURSE CATALOG DESCRIPTION

This course covers the Doppler effect and principles as well as artifacts, quality assurance and bioeffects.

Prerequisite: C or higher in DMS 201, DMS 203, DMS 209, DMS 106

Pre or Co-requisites: DMS 202, DMS 204, DMS 222, DMS 210

This course covers the Doppler Effect and principles as well as artifacts, quality assurance and bioeffects.

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RCGC Core Competencies

This comprehensive list reflects the *core* competencies that are essential for all RCGC graduates; however, each program varies regarding competencies required for a specific degree. Critical thinking is embedded in all courses, while teamwork and personal skills are embedded in many courses.

1	Written and Oral Communication Students will communicate effectively in both speech and writing.
2	Quantitative Knowledge and Skills Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.
3	Scientific Knowledge and Reasoning Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.
4	Technological Competency Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.
5	Society and Human Behavior Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.
6	Humanistic Perspective Students will analyze works in the fields of art, history, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language
7	Historical Perspective Students will understand historical events and movements in World, Western, non-Western or American societies and assess their subsequent significance.
8	Global and Cultural Awareness Students will understand the importance of a global perspective and culturally diverse peoples.
9	Ethical Reasoning and Action Students will understand ethical issues and situations.
10	Information Literacy Students will address an information need by locating, evaluating, and effectively using information

May 2014

DMS 226-01 CORE COMPETENCIES

This course focuses on three (3) of RCGC's Core Competencies:

1. Quantitative Knowledge and Skills
2. Technological Competency
3. Information Literacy

STUDENT LEARNING OUTCOMES

DMS 226 students will	RCGC's Core Competencies Addressed	Evaluation/Assessment
1. Apply physical parameters to gray scale and Doppler imaging instrumentation including Doppler Effect, Doppler shift, Doppler equation, color flow and spectral Doppler.	Quantitative Knowledge and Skills	Classwork work, homework, class discussion, exams
2. Identify the main ultrasound unit components and explain pulsed echo instrumentation from initial pulse generation to final display	Information Literacy	Classwork work, homework, class discussion, exams
3. Classify the types of acoustic artifacts and explain how to adjust instrumentation to correct for them.	Technological Competency	Classwork work, homework, class discussion, exams
4. Describe the consequences and prevention of bioeffects and explain the importance of quality assurance.	Technological Competency	Classwork work, homework, class discussion, exams

It is the responsibility of the student to review the RCGC Information and Policies, as well as the Online Syllabus at: <http://www.rcgc.edu/syllabi>

EVALUATION AND ASSESSMENT

GRADING SCALE AND DISTRIBUTION

Final grade computed as follows:

20%	Homework, Classwork, and Class Participation
20%	Midterm Exam
30%	Quizzes
30%	Final Exam

A	=	92 - 100	C	=	76 - 80
B+	=	89 - 91	D+	=	74 - 75
B	=	84 - 88	D	=	70 - 73
C+	=	81 - 83	F	=	below 70

Students must maintain a final grade of 76 or higher in order to progress in this program. Grades less than this represent a failure.

- Therefore, the student will be ineligible to progress into the next semester in *any* DMS course.
- The student must return to the semester in sequence should the student be readmitted to the program.
- Audit students are ineligible for progression into any DMS course.

DMS CLASS POLICIES

LATE / MISSED WORK

A key to taking any college course is time management. There are many reading and writing assignments; all have clear, firm deadlines. Plan accordingly!

- ✚ Students not present during a quiz or other in-class assignment earn a grade of 50.
 - Exceptions are rare and given only when the student informs the instructor in advance. *Do not wait until an assignment is late to inform the instructor of the reasons why it is late.* Opportunity to make up a quiz will be granted when the student:
 1. Has established a track-record of attendance and meeting deadlines in the course
 2. Has contacted the instructor at least 1 hour prior to the start of class
 - **STUDENTS MAY MAKE UP A QUIZ ON THE DAY OF THE MIDTERM OR FINAL EXAM.**
- ✚ If a student misses more than two Homework & Quizzes/assignments, all further missed Homework & Quizzes and assignments will result in a grade of zero.
- ✚ Online assignments and quizzes are due **on the noted date and time**. The instructor will deduct points for lateness → one point for each hour of lateness.

CHECK ELEARNING SITE ON A REGULAR BASIS FOR EMAILS, ASSIGNMENTS, QUIZZES, & DUE DATES

ATTENDANCE POLICY

CLASS ABSENCE

- ✚ In the case of an absence, *the student* is responsible for contacting the instructor. Each student should arrange for a friend or family member to have access to instructor contact information (in the event that the student is too sick or unavailable to call).
- ✚ The student (or family member/friend) should call or text message the instructor at least 2 hours prior to class start time and wait for confirmation from the instructor.
- ✚ If the student does not receive confirmation at least one hour before the start of class, he or she should reattempt to contact the instructor.
- ✚ *The student* is responsible for obtaining class notes and assignments from a classmate.

ARRIVING LATE, LEAVING EARLY

- ✚ Students must obtain permission to arrive late or leave early as class attendance means being present for the *entire* class period. The instructor will consider the situation on a case-by-case basis.
- ✚ Unexpected lateness may arise. In this situation, the student may knock on the door. If granted permission to enter, he or she should proceed quickly and quietly to seat.
- ✚ **Recurrent lateness is not acceptable.** A student who is late more than twice in a semester may be called for counseling and have it documented in his/her permanent record.

ELECTRONICS

The use of any electronic communication equipment (e.g. beepers, cells phones, blue tooth, PDA's) is at the discretion of the faculty.

CELL PHONES

- ✚ ***It is unacceptable to use cell phones during class.***
- ✚ Recurrent requests or inappropriate use may result in a counseling session and documentation in the student's permanent record.
- ✚ Cell phones should be stored during all class activities.
- ✚ In the event of a potential emergency, the student may gain permission from the instructor.
- ✚ **Use of cell phones to record Homework & Quiz questions (written or pictures) is completely unacceptable and will result in severe disciplinary action.**

TAPE RECORDERS/VOICE RECORDERS

- ✚ Students may record lectures and classroom activities.
- ✚ It is NOT acceptable to record during Quizzes or Quiz reviews.

CLASSROOM LEARNING ENVIRONMENT

- ✚ Classroom attendance, timeliness, attentiveness, and participation are all very important for academic achievement and success. However, please do not dominate class discussions.
- ✚ In consideration of fellow classmates, children cannot sit in on instructional classrooms.
- ✚ **The instructor insists on an environment of mutual respect and patience.**

CONTACTING THE INSTRUCTOR

- ✚ For **urgent** matters, please **call** instructor's cell phone.
- ✚ For non-urgent matters, you may call, text message or email the instructor. Please allow a 24-hour response time Monday-Friday and 48-hour response time on weekends.
- ✚ For general questions, use the **3-THEN ME-RULE**. Please try getting your answer from three classmates before contacting the instructor.

GENERAL COURSE POLICIES

RCGC ATTENDANCE POLICY: Students attain maximum academic benefit through regular class attendance. Nothing else has yet been discovered to replace in value the daily, cumulative, educational growth that results from regular participation in class. This is especially true where ideas, concepts, points of view, social developments, poise, confidence, knowledge and success derive from the interaction of students and faculty.

Therefore, students are expected to attend all class sessions for which they are scheduled. The effect of absences on student grades will be determined by each instructor, consistent with his or her stated policy provided in course outlines.

AUDITING THE COURSE: The auditing student must attend class with the same degree of regularity as the non-auditing student. The auditing student will not take exams, write in-class or out-of-class assignments or give a presentation.

ACADEMIC HONESTY STATEMENT: Rowan College at Gloucester County is committed to a learning environment that embraces the principles of honesty. Faculty, students, and administrators share

responsibility for maintaining this environment of academic honesty and integrity, accepting responsibility for all actions, personal and academic. **Each member of our community is expected to read and understand our *Academic Integrity Policy*.** The policy gives faculty authority to impose an academic sanction which is reasonable and commensurate with the violation.

PLAGIARISM: RCGC's *Academic Integrity Policy* defines plagiarism as "the unacknowledged use of another's means of expression and/or work product, whether published or unpublished, without proper credit through the use of quotation marks, citations and other customary means of identifying sources." Essentially, this means **copying the words or ideas of another without the proper form of academic documentation.**

There are two basic kinds of plagiarism: deliberate plagiarism and accidental plagiarism. One may sound more acceptable than the other, but they are equally serious academic offenses. The most common act of deliberate plagiarism involves copying another person's work and passing it off as your own. The most common act of accidental plagiarism involves failing to provide the proper internal documentation for quoted, summarized and paraphrased ideas from another person, even if you list the source in your Works Cited.

NOTE: The penalties for plagiarism will be determined by the instructor and distributed the first day of class. Please be advised that offenses may be reported to the Dean of Liberal Arts and the Director of Student Affairs.

CLOSING NOTIFICATION

The official College closure notification is:

RCGC website: RCGC <http://www.rcgc.edu>

Or call 856-468-5000 for a recorded message of school closure notification.

814 – KYW 1060 AM school closing number for day classes

2814 - KYW 1060 AM school closing number for evening classes

EMERGENCY NOTICES

Students are encouraged to register for RCGC Alert. Register or login through the TEXT tab on the RCGC portal.

ACADEMIC CALENDAR

The current calendar can be found at www.rcgc.edu/Calendars/Pages/Academic-Calendar.aspx

Rowan College at Gloucester County INFORMATION & POLICIES

All RCGC Student Policies apply to this course and can be found in the current College Catalog, the RCGC portal, or are available in hard copy through Student Services. The current RCGC catalog can be found on the RCGC website under the *Admissions* tab at www.rcgc.edu.

It is highly recommended that students review the Information Technology Policy and Academic Integrity Policy, which can be found in the current College Catalog. The current RCGC Catalog can be found on the RCGC website under the *Admissions* tab at www.rcgc.edu. These policies can also be accessed from the RCGC website under *Quick Links* and *Academics* tabs, respectively.

TECHNICAL ASSISTANCE

The Help Desk provides assistance with network and portal login along with campus computer hardware and software use. The Help Desk office is located in the Instructional Center, Room 449A; the phone number is 856-415-2298.

Blackboard/eLearning assistance is provided in-person in IC435, by phone at 856-415-2241, and online at <http://elearning.rcgc.edu/contact.cfm>. Review the Technical Requirements under Student Help Center, particularly the support browser information before logging onto eLearning.

All students are provided access to various information technology resources including computers in selected classrooms and Open Computer Labs, email accounts, access to the College Portal, and Internet connectivity. In lecture classes, there are many options for adapting course content to enhance student learning. Most face-to-face courses offered at the College include lectures, discussions, demonstrations, presentations, and projects as components of the course. Additional work beyond the scheduled course hours is necessary to fulfill the course requirements. Students will be required to use College technology resources such as our Portal and email; students can be required to use eLearning and/or publisher online materials to complete assignments and communicate with instructors where the course syllabi establish such requirements. Students will be responsible for utilizing the technology resources and will be governed by the Student Standard of Conduct (Board Policy 8106) and the Information Technology Acceptable Use Policy (ARR 2011 and ARR 2013) as put forth in the Student Handbook.

ACCESSIBILITY: RCGCs eLearning course management system is Blackboard. Blackboard explains that it “is committed to ensuring that our e-Education platform is usable and accessible. To fulfill this promise we are continually auditing our code and user interface design techniques to ensure that our applications are usable by everyone, to the greatest extent possible, regardless of age, ability, or situation. Blackboard measures and evaluates accessibility levels using two sets of standards: Section 508 of the Rehabilitation Act issued from the United States federal government and the Web Accessibility Initiative (WAI) issued by the World Wide Web Consortium (W3C).” Blackboard’s full statement regarding accessibility can be found at <http://www.blackboard.com/Platforms/Learn/Resources/Accessibility.aspx>

ACADEMIC AND SUPPORT SERVICES

STUDENT SUCCESS CENTER: formerly known as the Learning Resource Center (LRC) includes the following areas:

- Academic Test Proctoring – is located in LRC 608 across from the library, and provides make-up testing, distance learning, and outside Testing and Certifications. You are required to make arrangements with your instructor in order to make up a test. The phone number is 856-415-2238. Hours of operation: Monday – Thursday 9-6, Friday 9 – 1, and one Saturday per month by appointment.
- Tutoring Services – located in LRC601 and LRC602 above the College Bookstore, offers free tutoring for students seeking assistance in most subjects. The phone number is 856-415-2248. Hours of operation: Monday – Thursday 9 – 8 and Friday 9 – 5.
- Testing and Open Lab – located in LRC 603. The phone number is 856-415-2268.

Additional information can be found at

http://www.rcgc.edu/academics/student_success_center/index.cfm

LIBRARY: The RCGC Library provides a wide range of materials and services to promote student learning and faculty instruction in a friendly and supportive atmosphere. Over 30 computers are available for students to use for research purposes. Your RCGC library card also serves as your student ID.

COMPUTER LAB: The Open Lab in IC438 provides over 50 computers for student use. Students must show their RCGC student ID to access these computers.

SPECIAL NEEDS SERVICES : If there are any students in this class who have special needs, or who think they may have special needs because of learning disabilities or other kinds of disabilities, please feel free to discuss this with your instructor, or call the office of Special Needs 415-2281. The Department of Special Services provides academic support to RCGC students who have documented disabilities. Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990 prohibit discrimination on the basis of disability. The Department of Special Services ensures RCGC students receive appropriate accommodations which allow for academic success. Information can be found at http://www.rcgc.edu/Special_Needs/index.cfm

SERVICES FOR STUDENTS FOR WHOM ENGLISH IS A SECOND LANGUAGE: The Division of Continuing Education offers English as a second language education to help students improve their language proficiency, so they can become academically successful. If you are experiencing difficulties with your course work due to English language limitations, please contact the Division of Continuing Education at 856-468-5000, extension 6227.


INSTRUCTIONAL MATERIALS: (TEXT, REFERENCES, OTHER MATERIALS) DMS 226

Sign up/Register with

- Sonoworld: <http://www.sonoworld.com/>

Ultrasound Physics II TENTATIVE Schedule Spring 2016

01. Chapters 1-8, 11 Review
02. Chapters 9 & 10
03. Chapter 12
04. Chapters 12-13
05. Chapters 14 - 15
06. Chapter 16 and Midterm Reviews
07. Midterm
08. Chapters 18 & 19
09. Chapter 20
10. Chapter 21
11. Chapter 22
12. Chapter 23
13. Chapter 24
14. Review
15. Final Exam

 ***Examinations will include content from the assigned readings, lectures and Power Point presentations. Examinations may contain content from all previous chapters, as ultrasound physics requires cumulative, long-term knowledge! Unannounced quizzes are possible!***

* This represents a TENTATIVE schedule. The instructor may alter it based on class progress/needs.

Ultrasound Physics Rocks!

Affirmative Action Statement

The Board of Trustees is committed to providing an educational and workplace environment free from unlawful harassment and discrimination. All forms of employment and educational discrimination and harassment based upon race, creed, color, national origin, age, ancestry, nationality, marital or domestic partner or civil union status, sex, pregnancy, gender identity or expression, disability, liability for military service, affectional, or sexual orientation, atypical cellular or blood trait, genetic information (including refusal to submit to genetic testing) are prohibited and will not be tolerated.

For questions concerning discrimination contact Almarie J. Jones, Executive Director, Diversity and Equity, Affirmative Action/Title IX Officer at 856-415-2154 or ajones@rcgc.edu.

For disability issues, contact Dennis M. Cook, Director, Department of Special Services, ADAAA/504 Officer at 856-415-2265 or dcook@rcgc.edu.

Department of Special Services

The Department of Special Services, located in the Instructional Center, room 425A, welcomes students of all abilities. The staff members in Special Services are committed to providing support services and ensuring equal access to eligible students with documented disabilities as outlined by the Americans with Disabilities Act (ADA) and the Americans with Disabilities Act with Amendments Act (ADAAA).

To maximize the potential of eligible students who self-identify, the Special Services staff provides an array of support services which may include extra time for tests and quizzes, testing in a separate location, advisement, interpreters, scribes, tutors, assistive technology (such as magnification devices and audio amplification), touch screen computers, audio books and note-taking assistance.

As students embark on their academic journey, they are encouraged to meet with staff members to identify, develop and implement support services that are in accord with their individual academic needs. Students are also encouraged to make use of other college support services that are available to all RCGC students currently enrolled in credited academic courses, such as tutoring services and the college library, which offer online information research and other materials needed to complement their studies.

Students registered with the Department of Special Services and who plan to earn an associate degree, further their education and transfer to a four-year institution, or enter the workforce, are encouraged to choose a corresponding program of study (college major) as soon as possible. The Special Services staff assists enrolled students with additional support that focuses on advancing students through their selected programs of study towards a goal of graduating.

Students who request academic support from the Department of Special Services can be assured that confidentiality will always be maintained. Accommodations are provided to address the special needs of individuals with disabilities under Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) of 1990 together with the ADA Amendments Act

of 2008 (ADAAA). Under these acts, the office advocates a user-friendly campus for accessibility and a learning-friendly campus for academic success.

For more information or to schedule an appointment to meet Special Services staff, please call 856-415-2265 or visit RCGC.edu/SpecialServices.

To Register with Special Services

Students must follow these steps:

- Complete and submit the Student Profile form. Access the [Student Profile Form](#).
- Submit documentation detailing the student's disability. Support services will not be granted without documentation specifying the student's disability. Documentation should include the following information:
 - a. Diagnosis with written evaluation of current disability;
 - b. Date the student was diagnosed;
 - c. Tests used to reach diagnosis;
 - d. Credentials of the medical professional conducting evaluation; and
 - e. How the disability affects daily activities and/or academic performance.
- By clicking on the following links, students can download the [Special Education Records Release Form](#) and/or Medical Release Form to present to their medical care professional.
- Contact the Special Services office to schedule a meeting with a staff member.
 1. Students should schedule a meeting after submitting the [Student Profile Form](#), proper documentation and completing the College's placement test. (Click on [Special Accommodations for Placement Testing](#) to determine whether student should arrange his/her placement test through the Special Services office or the general Testing Center.
 2. During the meeting, the student and staff member will discuss his or her disability and determine eligible accommodations.

Accommodations

Students who qualify for accommodations are encouraged to register with the Department of Special Services at RCGC before they begin their academic career at Rowan College. This allows students to take advantage of any special accommodations and auxiliary aids that they might need and be eligible to receive.

- **Special accommodations** include but are not limited to extended time on tests, private test rooms to complete tests with the assistance of a reader or scribe, as well as a distraction-free test room.
- **Auxiliary aids** include but are not limited to note takers, tape recorders, large display calculators, interactive calculators, desktop magnifiers, large-screen computer monitors, touch-screen computer monitors, touch-screen laptop computers and JAWS® software. More information about adaptive technology can be found on the [technology](#) link. Students are responsible for identifying which accommodations and auxiliary aids they require for academic support.

Confidentiality

Students who register with the Department of Special Services are assured that their information is kept confidential.

In addition, the student's transcript will not indicate that the he or she is registered with the Department of Special Services. The student's specific special need is not disclosed to the student's instructors. However, accommodation letters are sent to each of the student's professors if the student needs testing accommodations or accommodations in the classroom. It is the student's choice whether or not to disclose the specifics of his or her special need.