**Department of Electrical & Computer Engineering Technology**

**Division of Architecture, Engineering, & Technology**

[http://www.valenciacollege.edu/west/engineering](http://www.valenciacollege.edu/west/engineering%09%20%09%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20) **SESSION: Fall 2017**

**Course Syllabus: Introduction to Photonics - CRN 12787**

**Course Description**: An introductory course exploring the fundamentals of Photonics theory, concepts, and applications. Contents include the nature and properties of light, light sources, human vision, and laser safety; basics of geometric and physical optics, and basic principles and applications of Holography. Laboratory experimentations will complement theoretical concepts of the course. (Special Fee: $69.00).

**Prerequisite:** EET 1214C and MTB 1329 or MAC 1105

**Class Time and Location:** Wednesday, 5:30 PM to 9:00 PM | Bldg. 9 – Room 208

**Text Book:**

Required - *Fundamentals of Light & Lasers, OP-TEC, ISBN 1578376998*

**Professor’s Information:**

**Name:** Mr. Grimming

**Phone:** 407-297-4900 ext 6192427

**Email:** [rgrimming@mail.valenciacollege.edu](mailto:rgrimming@mail.valenciacollege.edu) or [robert.grimming@ocps.net](mailto:robert.grimming@ocps.net)

**Tutoring hours:**

|  |  |  |
| --- | --- | --- |
| **Day** | **Time** | **Location** |
| Monday/  Wednesday | 4:00 PM – 5:30 PM | Classroom; Requires scheduling in advance |

**Student Performance Assessment:**

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| --- | --- | --- |
| **Evaluation** | | |
| Lab Work (Hands On + Reports) | 25% | 90 – 100% = A  80 – 89% = B  70 – 79% = C  60 – 69% = D  0 – 59% = F |
| Homework | 10% |
| Exams | 45% |
| Final Exam | 20% |

**Notes on Assessments**:

* It is the student’s responsibility to be in class and take notes. Exams and quizzes will cover all material covered in class, homework, and labs.
* All labs must be finished during class time else you will lose performance points.
* Late assignments are subject to a 10% reduction per day unless permitted by professor in advance.
* Homework should be turned in at the beginning of the class meeting if not submitted through Blackboard.

**Important Dates:**

August 28, 2017 First day of semester for students

September 4, 2017 Labor Day (College Closed)

September 5, 2017 Drop/Refund deadline

November 10, 2017 Course withdraw deadline

November 22-26, 2017 Thanksgiving Week (College Closed)

December 19, 2017 Final Grades viewable in Atlas

**Tentative Schedule:**

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| --- | --- | --- |
| **Class Date** | **Topics** | **Lab Exercise** |
| 8/28 | Introduction, Course Overview & Syllabus  Module 1-3: Light Sources and Laser Safety |  |
| 9/4 | **No Class** |  |
| 9/11 | Module 1-3: Light Sources and Laser Safety  Module 1-2: Optical Handling and Positioning (Abbreviated) | 1 – Cleaning Optical Components & HeNe Laser Alignment |
| 9/18 | Module 1-3: Light Sources and Laser Safety |  |
| 9/25 | **Exam 1 – Module 1-3 & Lab(s)** | 2 – HeNe Beam Intensity Measurement |
| 10/2 | Module 1-1: Nature and Properties of Light | 3 – Law of Reflection |
| 10/9 | Module 1-1: Nature and Properties of Light |  |
| 10/16 | Module 1-4: Basic Geometrical Optics  (Reflection/Refraction/Prisms Only) | 4 – Law of Refraction |
| 10/23 | **Exam 2 – Module 1-1 & Labs(s)** | 5 – Index of Refraction of a Prism |
| 10/30 | Module 1-4: Basic Geometrical Optics |  |
| 11/6 | Module 1-4: Basic Geometrical Optics | 6 – Measuring the Focal Length of Thin Lenses |
| 11/13 | Module 1-5: Basic Physical Optics | 7 – Interference Effects |

|  |  |  |
| --- | --- | --- |
| 11/20 | Module 1-5: Basic Physical Optics | 8 – Determining HeNe Wavelength using a Reflection Diffraction Grating |
| 11/27 | **Exam 3 – Module 1-4 and 1-5 & Lab(s)** | 9 – Determining HeNe Wavelength using a Transmission Diffraction Grating |
| 12/4 | Basic Principles and Applications of Holography | 10 – Reflection Holograms |
| 12/11 | **Final Exam - Comprehensive** |  |

**DISCLAIMER: Any Changes in the policy and/or schedule of this syllabus may be made at anytime during the semester at the discretion of the instructor**.

**Rules and Comments:**

* Absolutely food or drinks (other than water) in the classroom or laboratory space.
* **More than two unexcused absences could result in a grade of “F” in the course or withdrawal**
* **Each student is responsible for his or her own work**. All exams and graded assignments are to be exclusively your own work, unless you receive instructions to collaborate. Using any human, written, electronic, or other resource in any manner not explicitly authorized by the instructor will result in a grade of zero on the exam(s) or assignment(s) involved.
* You are expected to be in class on time and to remain in class for the entire period unless permission to leave early has been granted by the instructor.
* It is the student’s responsibility to keep track of their status and performance (i.e., quizzes, and exam grades) in class. Current grades will be posted to Blackboard.
* No surfing the net, checking e-mail, or chat room is permitted during class/lab periods. The instructor has the right to dismiss the student from the class or course.
* Your attitude will greatly affect your ability to succeed in this course. It will also affect your classmates’ attitudes should you choose to participate in class discussions. Always consider this fact carefully before you speak or act. If your comments or actions in class are deemed by the instructor to adversely affect other students’ attitudes, they are considered disruptive.
* **Cellular phones must be turned SILENCED and put away during class**. Students may not photograph lecture notes unless approved by the instructor.
* Technology problems are no excuse for late assignments (for example: “My printer broke…ran out of ink…internet went down, etc.). There are computer labs on campus or you may post/email your assignments before due date and time! Additionally, cloud based Word/Excel/PowerPoint are available through OneDrive. All electronically submitted assignments must be in one of the

following file formats: .doc, .docx, PDF, .rtf, or .jpg (if submitting a photo).

* Post-grade extra credit is not available. However, I will assist you in being successful the first time around. I will provide a sample lab report and detailed feedback on your submitted lab reports so you can improve with each subsequent submission. Ungraded practice exam questions with answers will be available on Blackboard. In addition, I always welcome your questions and inquiries in class or by email.

**Student Core Competencies:**

The faculty of Valencia College has established four Core Competencies that describe the learning outcomes for a Valencia graduate. They are: THINK, VALUE, COMMUNICATE, and ACT. These general competencies can be applied in many contexts and must be developed over a lifetime. They specify how learning can be expressed and assessed in practice. They enable students and faculty to set learning goals and assess learning within and across the many disciplines of human inquiry. Use the descriptions and examples of academic work for each to measure your own learning outcomes. Samples of the academic work are great additions to your Learning Portfolio. For further information on student core competencies please go to [www.valenciacollege.edu/competencies.](http://www.valenciacollege.edu/competencies.)

**Expected Student Conduct:**

Valencia College is dedicated not only to the advancement of knowledge and learning but is concerned with the development of responsible personal and social conduct. By enrolling at Valencia College, a student assumes the responsibility for becoming familiar with and abiding by the general rules of conduct. The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited acts that result in the disruption of a class may be directed by the faculty member to leave the class and report to a disciplinary dean. Disciplinary action could include being withdrawn from class or other appropriate and authorized actions by Valencia College.

**Students with Disabilities:**

Students with disabilities who qualify for academic accommodations must provide a letter from the Office for Students with Disabilities (OSD) and discuss specific needs with their professor(s), preferably during the first two weeks of class.

**BayCare:**

Valencia College is interested in making sure all our students have a rewarding and successful college experience. To that purpose, Valencia students can get immediate help with issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. BayCare Behavioral Health Student Assistance Program (SAP) services are free to all Valencia students and available 24 hours a day by calling

(800) 878-5470. Free face-to-face counseling is also available.