Meeting time:
M/W/F: 9:00am – 9:50am (recorded lectures will be available 24/7 at http://canvas.mst.edu/)
Missouri S&T students have an option to attend lectures in person on Monday and Wednesday. Friday’s lectures are online only

Room:
All lectures will be broadcast online and recorded
The recordings can be viewed at students’ convenience
S&T’s students can attend the class in person in room Physics 127

Textbook:
“Introduction to Optics”
Occasionally, additional reading materials will be distributed periodically

Instructor:
Dr. A. Yamilov, Email: yamilov@mst.edu Office: Physics 116
Office hours / Help sessions: Mon/Tue time TBA in Phys 116 or 127

Co-listed courses:
S&T students registered for the co-listed course EE5200 have been added to the main PH4503 section. The combined course is listed as PHYSICS_4503/ELEC_ENG_5200 in Canvas (http://canvas.mst.edu/). UMSL students registered for PH4323 have been automatically added to PHYSICS_4503

Topics to be covered in the course:
Chapter 1 Nature of Light
Chapter 2 Geometrical Optics
Chapter 3 Optical Instrumentation
Chapter 4 Wave Equations
Chapter 5 Superposition of Waves
Chapter 6 Properties of Lasers
Chapter 7 Interference of Light
Chapter 8 Optical Interferometry
Chapter 11 Fraunhofer Diffraction
Chapter 13 Fresnel Diffraction
If time permits:
   Chapter 9 Coherence
   Chapter 10 Fiber Optics

Final grade makeup:
Homework 40% (Two lowest out of the total twelve will be dropped)
Presentation 10%
Presentation review 5%
Two midterm exams 15% each
Final exam 15% (Not cumulative)
Course policies

Lectures:
• Monday and Wednesday lectures will be broadcast live online via Panopto – click on Panopto Recordings in the left menu to participate remotely. Friday lectures will be pre-recorded and made available by 9am
• Recordings of all lectures will be posted in Canvas – navigate to Panopto Recordings to re-watch any lecture at any time
• You can (i) watch the lecture live online from any location on your computer or (ii) watch the recording at a later time. S&T students are encouraged to attend live lectures in person at our meeting room Physics 127
• Friday’s lectures can only be watched online (I will not be physically present at the classroom). For list of the online-only lectures, see Class Schedule below

Presentation:
• Every student will be asked to prepare one 15 minute *narrated* PowerPoint presentation about a scientist who made a significant contribution to optics
• You are free to suggest a name based on your interest. Your presentation should be related to the material discussed in this course and it has to be approved by me before you start preparing it.
• If you cannot make a selection by Wednesday of the second week of classes, I will make an assignment
• If you have not made your presentation by then, you will be notified on Wednesday of the second week of classes when your presentation is due
• To record your presentation, navigate to Panopto Recordings / Student Presentations in Canvas and then click Create; launch your PowerPoint presentation and narrate your presentation. You may choose to disable the video of yourself and record just the on-screen presentation with voice-over
• A student Joe Smith making a presentation on "Albert Einstein" with deadline on Sept. 6 should create a new thread titled “Sept 6: Smith, Joe "Albert Einstein"” in Discussions/Student Presentation forum where Presentation Review (see below) will take place
• Your presentation should contain the following parts:
  (i) Brief biography of the researcher: when and where (s)he was born; what kind of education/training (s)he received.
  (ii) What made this researcher famous? Describe one (or more) of his/her discoveries that are relevant to this course
  (iii) How the above discoveries contributed to the advancements in optics?
  (iv) Bibliography used in preparing your presentation
• You may use Internet as a helpful source of information
• You are encouraged to consult with me before finalizing your presentation
• Your grade for the presentation will be determined based on:
  (i) Quality of your PowerPoint presentation. Correctness, completeness and appearance will be considered – 50% of the grade
  (ii) Your oral presentation – 30% of the grade
  (iii) Your ability to answer questions related to the topic of your discussion – 20% of the grade
• Sources of information for your presentation:
  – [http://cnr2.kent.edu/~manley/physicists.html](http://cnr2.kent.edu/~manley/physicists.html)
  – [http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html](http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html)
  – Articles posted in Canvas
Presentation suggestions:
1. Willebrord van Roijen Snell
2. Christiaan Huygens
3. Ole Rømer
4. Robert Hooke
5. Pierre de Fermat
6. Ernst Abbe
7. Evangelista Torricelli
8. Hans Lippershey
9. David Brewster
10. John William Strutt (Lord Rayleigh)
11. Jesse Ramsden
12. Galileo Galilei
13. Jean Baptiste Joseph Fourier
14. Thomas Young
15. John Dalton
16. Johann Heinrich Lambert
17. Albert Abraham Michelson
18. George Gabriel Stokes
19. Jean-Baptiste Alfred Pérot
20. Joseph von Fraunhofer
21. Augustin-Jean Fresnel
22. Leonhard Euler
23. Gustav Robert Kirchhoff
24. Siméon Denis Poisson
25. Marie Alfred Cornu
26. Heinrich Rudolf Hertz
27. James Clerk Maxwell
28. Christian Doppler
29. Albert Einstein

Presentation Review:
- For every presentation two student reviewers will be assigned
- Within three days after the presentation has been made available, each reviewer is expected to listen carefully the presentation being reviewed and make a comment/addition/question through Canvas/Discussion board
- The student in charge of the presentation will have additional four days to post his/her replies
- Your grade for the presentation review will be determined by your participation in the discussion board
- Each student is expected to participate in two reviews
Homework:
- During each Friday class (excluding the weeks before the midterms and the final exam) you will be assigned a problem set which will consist of the end-of-the-chapter problem(s) and/or conceptual questions based on the chapter objectives
- Neatly handwritten or typed solutions with sketches drawn in pencil using a ruler, protractor (if necessary) are due on Wednesday (by 11:59 pm) of the following week
- Off-campus students submit homework solutions via email (e.g. scan your handwritten solution and submit in PDF format)
- Homework will be accepted only until the end of the day on the Friday (by 11:59pm) of the due week (with 20% penalty for turning the assignment after the deadline)
- There will be twelve homework assignments during semester
- At the end of the course, two lowest homework grades will be dropped

Midterm and final exams:
- At S&T, midterms exams will be given on Mondays, September 24 and October 29 during a regular class; the final exam will be given during the finals week on December 14 at 12:30pm
- Final exam will only include the material covered after the second midterm
- Both the midterms and the final will consist of 4 problem(s)/question(s) of medium difficulty level
- Test questions will be based on the problems from the textbook and the stated chapter objectives
- Tests are in closed-book, closed-notes format. Formula sheet with the key equations will be provided
- On-campus student will take the test in class (or S&T’s testing center with a prior arrangement)
- UMSL students will need to arrange for time (on Monday or Tuesday for the midterms, or during the finals week for the final exam) with the on-site faculty sponsor (Prof. Flores) who would (i) administer the test; (ii) ensure the test security; (iii) transmit the tests to me for grading.

Test makeup policy:
- In exceptional cases of documented medical or personal emergencies, a makeup test will be provided
- I have to be notified of such an emergency prior to the test
- A makeup test will be composed using the same guidelines as the test to be missed

Final grade:
- Throughout the course the intermediated grades will be posted in Canvas
- The final letter grades will be assigned according to the following rules:
  A – 89.5% of total possible points
  B – 79.5% of total possible points
  C – 69.5% of total possible points
  D – 59.5% of total possible points
  F – below 59.5% of total possible points

Disability:
- If you have a documented disability, please, provide me with the letter from Disability Support Services by the end of the second week of classes.
- I will be happy to work with DSS to accommodate you in this course.
- More resources for students with disabilities are available at http://dss.mst.edu
Class Schedule

August (6)
Su Mo Tu We Th Fr Sa
1  2  3  4
5  6  7  8  9 10 11
12 13 14 15 16 17 18
19  20 21 22 23 24 25
26 27 28 29 30 31  
   Homework #1 is due on Wednesday

September (10)
Su Mo Tu We Th Fr Sa
2  3  4  5  6  7  8  
9 10 11  12 13 14 15
16 17 18 19 20 21 22
23  24 25 26 27 28 29
   Homework #2 is due on Wednesday
   Homework #3 is due on Wednesday
   Homework #4 is due on Wednesday
   Midterm #1 on Monday (14 Lectures)

October (13)
Su Mo Tu We Th Fr Sa
1  2  3  4  5  6
7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28  29 30 31
   Homework #5 is due on Wednesday
   Homework #6 is due on Wednesday
   Homework #7 is due on Wednesday
   Homework #8 is due on Wednesday
   Midterm #2 on Monday (14 Lectures)

November (10)
Su Mo Tu We Th Fr Sa
1   2  3
4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25  26 27 28 29 30
   Homework #9 is due on Wednesday
   Homework #10 is due on Wednesday
   Homework #11 is due on Wednesday

December (10)
Su Mo Tu We Th Fr Sa
2  3  4  5  6  7  8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
   Homework #12 is due on Wednesday
   Final 12:30-2:30pm (14 Lectures)

Key: Hybrid lectures, Tests, Online-only lectures, Homework due
Title IX

- Missouri University of Science and Technology is committed to the safety and well-being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.
- Missouri S&T’s Title IX Coordinator is interim chief diversity officer Neil Outar. Contact him (naoutar@mst.edu; (573) 341-6038; Temporary Facility A-1200 N. Pine Street) to report Title IX violations. To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit http://titleix.mst.edu

Student Honor Code and Academic Integrity

- Please take a few minutes to stress the importance of academic integrity in class. Discuss why it should matter to the student, why it matters to you and your discipline, why it matters to Missouri S&T, and why it matters to future employers. Include a statement on your syllabus about the Honor Code developed and endorsed by the Missouri S&T Student Council: the Honor Code can be found at this link: http://stuco.mst.edu/honor-code/. Encourage students to read and reflect upon the Honor code and its emphasis on HONESTY and RESPECT.
- Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage (http://registrar.mst.edu/academicregs/index.html). Additional guidance for faculty, including the University’s Academic Dishonesty Procedures, is available on-line at http://academicsupport.mst.edu. Other informational resources for students regarding ethics and integrity can be found online at http://academicsupport.mst.edu/academicintegrity/studentresources-ai

S&Tconnect: https://canvas.mst.edu/

- S&Tconnect provides an enhanced system that allows students to request appointments with their instructors and advisors via the S&Tconnect calendar, which syncs with the faculty or staff member’s Outlook Exchange calendar. S&Tconnect will also facilitate better communication overall to help build student academic success and increase student retention. S&Tconnect Early Alert has replaced the Academic Alert system used by Missouri S&T. If training is needed, please contact Rachel Morris at rachelm@mst.edu or 341-7600

Classroom Egress Maps

- Faculty should explain where the classroom emergency exits are located. Please include a statement in your course syllabus asking the students to familiarize themselves with the classroom egress maps posted on-line at: http://designconstruction.mst.edu/floorplan/
Accessibility and Accommodations

- It is the university’s goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please contact Student Disability Services at (573) 341-6655, sdsms@mst.edu, visit http://dss.mst.edu/ for information, or go to mineraccess.mst.edu to initiate the accommodation process.

LEAD Learning Assistance http://lead.mst.edu

- The Learning Enhancement Across Disciplines Program (LEAD) sponsors free learning assistance in a wide range of courses for students who wish to increase their understanding, improve their skills, and validate their mastery of concepts and content in order to achieve their full potential. LEAD assistance starts no later than the third week of classes. Check out the online schedule at http://lead.mst.edu/assist, using zoom buttons to enlarge the view. Look to see what courses you are taking have collaborative LEAD learning centers (bottom half of schedule) and/or Individualized LEAD tutoring (top half of the schedule). For more information, contact the LEAD office at 341-7276 or email lead@mst.edu

The Student Success Center

- The Student Success Center is a centralized location designed for students to visit and feel comfortable about utilizing the campus resources available. The Student Success Center was developed as a campus wide initiative to foster a sense of responsibility and self-directedness to all S&T students by providing peer mentors, caring staff, and approachable faculty and administrators who are student centered and supportive of student success. Visit the SSC at 198 Toomey Hall; 573-341-7596; success@mst.edu; facebook: www.facebook.com/SandTssc; web: http://studentsuccess.mst.edu/