PHY 376 Laboratory Syllabus

Fall 2016 Instructor: Rob Salgado, Dept. of Physics

Office Cowley 116

Office Hours *to be determined - check D2L for updates*, or
by appointment, or drop by my office [my schedule will be posted there]

Email (the best way to reach me) `rsalgado@uwlax.edu`
Please put "`376`" in the subject line

Course Content: There will be a series of labs over the course of the semester designed to accomplish these three goals:

1. To experience different detector techniques and compare them to each other.
2. To gain an understanding of Nuclear Physics principles by demonstrating them experimentally.
3. To help you gain experience with laboratory techniques in general.

Layout: You will have a chance to gain an understanding of nuclear principles and techniques in a laboratory setting. You will be evaluated on your performance on lab reports.

Attendance: Attendance in lab is required.

Lab Reports: Each student will be required to turn in the lab report at the end of each experiment in the lab manual following the schedule at the end of this syllabus. These reports will be due the following week at the beginning of lab class except where otherwise noted. Absolutely NO late reports will be accepted. These lab reports will be graded on completeness and accuracy according to the point value given in each report. The later labs carry more weight than the earlier labs. The total score will be given to lecture instructor, who alone will incorporate them in a final grade.

Lab Manual: This manual does not just contain the labs you will be performing over the course of the semester but also information useful in writing your lab reports and understanding the material. Make sure to look at these chapters and appendixes.

Expectations for Graded Work: I provide students feedback and/or scores on assignments that require individualized grading before a further assignment of a similar format is due. Generally, I return work that requires individual feedback within 7 days from the date the work was due. I will notify you if I am unable to grade the work within the 7-day timeframe, and will identify a revised return date. After you have completed the course, any copies or records of your graded materials that I retain will be accessible up to 7 weeks into the next academic term.

Evaluation of Instruction (SEI) UWL conducts student evaluations electronically. Approximately 2 weeks prior to the conclusion of a course, you will receive an email at your EagleApps address directing you to complete an evaluation for each of your courses. Electronic reminders will be sent if you do not complete the evaluation. The evaluation will include numerical ratings. The university takes student feedback very seriously and the information gathered from student evaluations is more valuable when a larger percentage of students complete the evaluation. Please be especially mindful to complete the surveys.

Accommodations:

Documented disability: Any student with a documented disability (e.g. ADHD, Autism Spectrum Disorder, Acquired Brain Injury, PTSD, Physical, Sensory, Psychological, or Learning Disability) who needs to arrange academic accommodations must contact The ACCESS Center (165 Murphy Library, 608-785-6900, ACCESSCenter@uwlax.edu) and meet with an advisor to register and develop an accommodation plan. In addition to registering with The ACCESS Center, it is the student's responsibility to discuss their academic needs with their instructors. You can find out more about services available to students with disabilities at The ACCESS Center website: `http://www.uwlax.edu/access-center` .

Religious Observances: Students may complete exams or other requirements that are missed because of a religious observance provided arrangements are made within the first two weeks of class.

Veterans & active military personnel: Veterans and active military personnel with special circumstances (e.g., upcoming deployments, drill requirements, disabilities) are welcome and encouraged to communicate these, in advance if possible, to me. For additional information and assistance, contact the Veterans Services Office (`http://www.uwlax.edu/veteran-services/`). Students who need to withdraw from class or from the university due to military orders should be aware of the military duty withdrawal policy.

Policy on Sexual Harassment: As a faculty member of the University of Wisconsin-La Crosse, I am a mandated reporter of sexual harassment (including sexual violence). This means that I am obligated to disclose any detailed or specific information I receive about such incidents involving a

member of this campus while that person is a member of this campus, regardless of whether the incident takes place on campus or off. I care about your well-being, and our course assignments sometimes lend themselves to disclosure, but you should not share any details of an incident with me until you have discussed your options under the new Title IX guidelines. There are confidential reporters available to students at UWL where you can have this discussion. The contact in Student Life is Ingrid Peterson, Violence Prevention Specialist, at (608) 785-8062 or `ipeterson@uwlax.edu`. I am also happy to help direct you to counseling and support services. Simply ask me to assist you in locating a confidential reporter and I will help you to do so. (`http://www.uwlax.edu/violence-prevention/`)

Lab Schedule:

We will cover 10 labs in this class. At the start, all groups will work on the same 6 labs. Then we will have a "Round Robin" (groups will be assigned a different lab each week). This will give you a chance to work on more advanced equipment.

Starting Labs (13pts each)
1 Operating Plateau
2 Resolving-Time Corrections
3 Geiger Tube Efficiency
4 Inverse Square Law
5 Absorption & Range of β
6 γ-Spectroscopy Using NaI(Tl)

Round-Robin Labs (18pts each)
7 Attenuation of γ
8 Energy Range of α
9 Half-Life
10 γ-Spectra Components

$$\begin{aligned} 6(13 \text{ pts}) + 4(18 \text{ pts}) &= 78 + 72 \\ &= 150 \text{ pts} \end{aligned}$$

Schedule (by group)

Fall 2016	A	B	C	D	E	F	G
14-15 Sep	1						
21-22 Sep	2						
28-29 Sep	3						
5- 6 Oct	4						
12-13 Oct	5						
19-20 Oct	6						
26-27 Oct	7	8	9	10	8	9	10
2- 3 Nov	8	9	10	7	9	10	7
9-10 Nov	9	10	7	8	10	7	8
16-17 Nov	10	7	8	9	7	8	9
TG-break	none						
1- 2 Dec	none; last lab due Thu Dec 2						
7- 8 Dec	none						
14 Dec	none						