

Q2S Binder for Physics and Astronomy

General Info

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Department/School Info

College: A&S(null)

Department: PHYS(Physics and Astronomy)

Mission: The mission of the Department of Physics and Astronomy is to develop a deeper understanding of the natural world, to educate undergraduate and graduate students, and to convey the concepts and logic of our discipline to the broader community. We do this by performing timely original research at the forefront of various scientific sub-fields and by teaching students from several disciplines how to formulate and solve problems in a rigorous and quantitative fashion. We mentor our undergraduate majors, providing them with a solid grounding in scientific skills that they can use in their subsequent careers. We equip our graduate students with the knowledge and techniques required to carry out original research, while nurturing their development as independent scientists. In all these efforts we aim to communicate the excitement and importance of our field, and the nature of rigorous scientific inquiry.

Programs

Moving to Semesters	Code	Name	Degree	Status	Level
Yes	BS1931	ASTROPHYSICS	BACHELOR OF SCIENCE IN ASTROPHYSICS	REVIEW	UCC
Yes	BS1925	ENGINEERING PHYSICS	BACHELOR OF SCIENCE IN ENGINEERING PHYSICS	REVIEW	UCC
Yes	BS3338	PHYS/METEOROLOGY	BACHELOR OF SCIENCE	REVIEW	UCC
Yes	BA3331	PHYSICS	BACHELOR OF ARTS	REVIEW	UCC
Yes	BS1905	PHYSICS	BACHELOR OF SCIENCE IN PHYSICS	REVIEW	UCC
Yes	BS3331	PHYSICS	BACHELOR OF SCIENCE	REVIEW	UCC
Yes	BS3332	PHYSICS APPLIED	BACHELOR OF SCIENCE	REVIEW	UCC
Yes	BS3335	PHYSICS ASTROPHYSICS	BACHELOR OF SCIENCE	REVIEW	UCC
Yes	ORASTR	ASTRONOMY MINOR	ASTRONOMY MINOR	REVIEW	UCC
Yes	OR3331	PHYSICS MINOR	PHYSICS MINOR	REVIEW	UCC
Yes	MA3331	MA in Physics and Astronomy	MASTER OF ARTS	REVIEW	UCC
Yes	MS3331	MS in Physics and Astronomy	MASTER OF SCIENCE	REVIEW	UCC
Yes	PH3331	PhD in Physics and Astronomy	DOCTOR OF PHILOSOPHY	REVIEW	UCC
Yes	SCPHYS	SCPHYS Shared Components	N/A	REVIEW	UCC

Courses

Course ID	Name	Course Type	Doc. Type	Doc. Status	Review Level
ASTR 1000	SURVEY OF ASTRONOMY	TIER2	EXPEDITED	REVIEW	UCC
ASTR 1001	THE SOLAR SYSTEM	TIER2	EXPEDITED	REVIEW	UCC
ASTR 1400	OBSERVA ASTR LAB	TIER2	EXPEDITED	REVIEW	UCC
ASTR 3251	FUNDAMENTALS OF ASTROPHYSICS		SEMESTER	REVIEW	UCC
ASTR 3940	ASTRONOMY LAB		EXPEDITED	REVIEW	UCC
ASTR 4201	STELLAR ASTROPHYS & RADIATION		COMPOSITE	REVIEW	UCC
ASTR 4202	INTERSTELLAR MEDIUM & GALAXIES		COMPOSITE	REVIEW	UCC
ASTR 4271	Observational Astrophysics		SEMESTER	REVIEW	UCC
ASTR 4930	STUDIES IN ASTRONOMY		EXPEDITED	REVIEW	UCC
ASTR 5201	STELLAR ASTROPHYS & RADIATION	GRADUATE	COMPOSITE	REVIEW	UCC
ASTR 5202	INTERSTELLAR MEDIUM & GALAXIES	GRADUATE	COMPOSITE	REVIEW	UCC
ASTR 5271	Observational Astrophysics	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 1901	PHYSICS SEMINAR		EXPEDITED	REVIEW	UCC
PHYS 2001	INTRODUCTION TO PHYSICS	TIER2	EXPEDITED	REVIEW	UCC
PHYS 2002	INTRODUCTION TO PHYSICS	TIER2	EXPEDITED	REVIEW	UCC
PHYS 2051	GENERAL PHYSICS	TIER2	EXPEDITED	REVIEW	UCC
PHYS 2051H	GENERAL PHYSICS		COMPOSITE	REVIEW	UCC
PHYS 2052	General Physics	TIER2	EXPEDITED	REVIEW	UCC
PHYS 2052H	GENERAL PHYSICS		COMPOSITE	REVIEW	UCC
PHYS 2053	CONTEMPORARY PHYSICS		EXPEDITED	REVIEW	UCC

PHYS 2301	GEN PHYS WITH BIOL APP	TIER2	EXPEDITED	REVIEW	UCC
PHYS 2701	ELECTRONICS LAB		COMPOSITE	REVIEW	UCC
PHYS 2930	SPECIAL STUDIES		EXPEDITED	REVIEW	UCC
PHYS 2970T	PHYS TUTORIAL		COMPOSITE	REVIEW	UCC
PHYS 2980T	PHYS TUTORIAL		COMPOSITE	REVIEW	UCC
PHYS 3001	MECHANICS		EXPEDITED	REVIEW	UCC
PHYS 3011	THERMAL PHYSICS		EXPEDITED	REVIEW	UCC
PHYS 3701	INT LAB - ELECTRONS & PHOTONS		COMPOSITE	REVIEW	UCC
PHYS 3702	INT LAB-PHOTONS & NUCLEONS		COMPOSITE	REVIEW	UCC
PHYS 3970T	PHYS TUTORIAL		COMPOSITE	REVIEW	UCC
PHYS 3980T	PHYS TUTORIAL		COMPOSITE	REVIEW	UCC
PHYS 4021	Quantum Mechanics 1		COMPOSITE	REVIEW	UCC
PHYS 4031	Electricity and Magnetism 1		COMPOSITE	REVIEW	UCC
PHYS 4032	Electricity and Magnetism 2		COMPOSITE	REVIEW	UCC
PHYS 4041	MATH METHODS IN PHYSICS 1		EXPEDITED	REVIEW	UCC
PHYS 4051	Modern Physics	TIER3EQUIV	SEMESTER	REVIEW	UCC
PHYS 4061	GEOM & PHYS OPTICS		EXPEDITED	REVIEW	UCC
PHYS 4071	COMPUTER SIMULATION METH		EXPEDITED	REVIEW	UCC
PHYS 4301	CELL & MOL BIOPHYSICS		EXPEDITED	REVIEW	UCC
PHYS 4411	ELECTRONIC DEV. PHYS.		EXPEDITED	REVIEW	UCC
PHYS 4511	RADIATION PHYSICS		EXPEDITED	REVIEW	UCC
PHYS 4701	BAS ELEC MEASM LAB		EXPEDITED	REVIEW	UCC
PHYS 4711	ADVANCED LAB		EXPEDITED	REVIEW	UCC
PHYS 4801	ACOUSTICS		EXPEDITED	REVIEW	UCC
PHYS 4811	DYNAMIC METEOROLOGY 1		EXPEDITED	REVIEW	UCC
PHYS 4812	DYNAMIC METEOROLOGY 2		EXPEDITED	REVIEW	UCC
PHYS 4930	SPECIAL PROBLEMS		EXPEDITED	REVIEW	UCC
PHYS 4940H	HONORS THESIS		EXPEDITED	REVIEW	UCC
PHYS 4942	UNDERGRAD SEMINAR		EXPEDITED	REVIEW	UCC
PHYS 4970T	PHYS TUTORIAL		COMPOSITE	REVIEW	UCC
PHYS 4980T	HTC THESIS		EXPEDITED	REVIEW	UCC
PHYS 5001	MECHANICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5011	THERMAL PHYSICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5021	Quantum Mechanics 1	GRADUATE	COMPOSITE	REVIEW	UCC
PHYS 5031	Electricity and Magnetism 1	GRADUATE	COMPOSITE	REVIEW	UCC
PHYS 5032	Electricity and Magnetism 2	GRADUATE	COMPOSITE	REVIEW	UCC
PHYS 5041	MATH METHODS IN PHYSICS 1	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5051	Modern Physics	GRADUATE	COMPOSITE	REVIEW	UCC
PHYS 5061	GEOM & PHYS OPTICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5071	COMPUTER SIMULATION METH	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5101	Sci-EI&Sec Teachers		EXPEDITED	REVIEW	UCC
PHYS 5301	CELL & MOL BIOPHYSICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5411	ELECTRONIC DEV. PHYS.	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5511	RADIATION PHYSICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5701	BAS ELEC MEASM LAB	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5801	ACOUSTICS	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5811	DYNAMIC METEOROLOGY 1	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 5812	DYNAMIC METEOROLOGY 2	GRADUATE	EXPEDITED	REVIEW	UCC
PHYS 6001	Classical Mechanics		COMPOSITE	REVIEW	UCC
PHYS 6002	Advanced Mechanics		EXPEDITED	REVIEW	UCC
PHYS 6011	Statistical Mechanics 1		COMPOSITE	REVIEW	UCC
PHYS 6021	Quantum Mechanics 2		COMPOSITE	REVIEW	UCC
PHYS 6031	Electrodynamics 1		COMPOSITE	REVIEW	UCC
PHYS 6032	Electrodynamics 2		COMPOSITE	REVIEW	UCC
PHYS 6041	Math Methods 2		COMPOSITE	REVIEW	UCC
PHYS 6201	General Relativity & Cosmology		EXPEDITED	REVIEW	UCC
PHYS 6601	Adv Math Comp Phys		EXPEDITED	REVIEW	UCC
PHYS 6701	Experimental Techniques		COMPOSITE	REVIEW	UCC
PHYS 6741	Grad Lab: Cond Mat & Bio		EXPEDITED	REVIEW	UCC
PHYS 6751	Grad Lab: Nuclear & Particle		EXPEDITED	REVIEW	UCC
PHYS 6940	Special Study		EXPEDITED	REVIEW	UCC
PHYS 6950	Thesis		EXPEDITED	REVIEW	UCC
PHYS 7011	Statistical Mechanics 2		COMPOSITE	REVIEW	UCC
PHYS 7021	Relativistic Quantum Theory		COMPOSITE	REVIEW	UCC
PHYS 7022	Quantum Many-Body Theory		EXPEDITED	REVIEW	UCC

PHYS 7023	Quantum Field Theory		COMPOSITE	REVIEW	UCC
PHYS 7301	Theor. & Comp. Biophysics	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 7401	Condensed Matter 1		COMPOSITE	REVIEW	UCC
PHYS 7402	Condensed Matter 2		COMPOSITE	REVIEW	UCC
PHYS 7403	Contemporary Condensed Matter		COMPOSITE	REVIEW	UCC
PHYS 7411	The physics of nanostructures	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 7421	Phys of Amorphous Materials	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 7461	Meth Cond Mat Theory		COMPOSITE	REVIEW	UCC
PHYS 7501	Particles and Nuclei 1		COMPOSITE	REVIEW	UCC
PHYS 7502	Particles and Nuclei 2		COMPOSITE	REVIEW	UCC
PHYS 7511	Applied Nuclear Physics	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 7561	Contemporary Nuclear Theory		COMPOSITE	REVIEW	UCC
PHYS 7562	Particle Theory		EXPEDITED	REVIEW	UCC
PHYS 7601	Nonlinear Science	GRADUATE	SEMESTER	REVIEW	UCC
PHYS 8001	Colloquium		EXPEDITED	REVIEW	UCC
PHYS 8011	Seminar		EXPEDITED	REVIEW	UCC
PHYS 8101	Probs in Teaching College Phys		EXPEDITED	REVIEW	UCC
PHYS 8201	Res Sem: Astrophysics		EXPEDITED	REVIEW	UCC
PHYS 8301	Res Sem: Biophysics		EXPEDITED	REVIEW	UCC
PHYS 8401	Res Sem: Cond Mat Phys		EXPEDITED	REVIEW	UCC
PHYS 8501	Res Sem: Particles & Nuclei		EXPEDITED	REVIEW	UCC
PHYS 8900	Special Topics in P and A		EXPEDITED	REVIEW	UCC
PHYS 8950	Doctoral Research & Diss		EXPEDITED	REVIEW	UCC
PHYS 8960	Special Study		EXPEDITED	REVIEW	UCC
PSC 1000	SURVEY OF ASTRONOMY	TIER2	EXPEDITED	REVIEW	UCC
PSC 1001	THE SOLAR SYSTEM	TIER2	EXPEDITED	REVIEW	UCC
PSC 1010	PHYSICAL WORLD	TIER2	EXPEDITED	REVIEW	UCC
PSC 1011	PHYSICAL WORLD	TIER2	EXPEDITED	REVIEW	UCC
PSC 1050	COLOR,LIGHT&SOUND	TIER2	EXPEDITED	REVIEW	UCC
PSC 1051	COLOR,LIGHT&SOUND	TIER2	EXPEDITED	REVIEW	UCC
PSC 1110	THE METRIC SYSTEM		EXPEDITED	REVIEW	UCC
PSC 1310	NANO-SCIENCE & TECHNOLOGY	TIER2	EXPEDITED	REVIEW	UCC
PSC 1350	ENERGY IN A MODERN WORLD	TIER2	EXPEDITED	REVIEW	UCC
PSC 1400	OBSERVA ASTR LAB	TIER2	EXPEDITED	REVIEW	UCC
PSC 2050	LIFE ON OTHER WORLDS?	TIER2	EXPEDITED	REVIEW	UCC
T322 4150	MUSIC/INSTRUMENTS/PHYSICS	TIER3	EXPEDITED	REVIEW	UCC
T322 4151	ENTROPY & HUMAN ACTIVITY	TIER3	EXPEDITED	REVIEW	UCC

Exceptions - Credit Analysis

Course ID	Name	Type	Credit Hours	Components	Doc. Status	Review Level
PHYS 2930	SPECIAL STUDIES	EXPEDITED	1.0 - 4.0	INDEPENDENT	2.0	REVIEW UCC
PHYS 2970T	PHYS TUTORIAL	COMPOSITE	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 2980T	PHYS TUTORIAL	COMPOSITE	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 3970T	PHYS TUTORIAL	COMPOSITE	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 3980T	PHYS TUTORIAL	COMPOSITE	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 4711	ADVANCED LAB	EXPEDITED	1.0 - 3.0	LABORATORY	4.0	REVIEW UCC
PHYS 4930	SPECIAL PROBLEMS	EXPEDITED	1.0 - 4.0	INDEPENDENT	4.0	REVIEW UCC
PHYS 4940H	HONORS THESIS	EXPEDITED	1.0 - 6.0	RESEARCH	3.0	REVIEW UCC
PHYS 4970T	PHYS TUTORIAL	COMPOSITE	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 4980T	HTC THESIS	EXPEDITED	1.0 - 15.0	TUTORIAL	2.0	REVIEW UCC
PHYS 5021	Quantum Mechanics 1	COMPOSITE	5.0	LECTURE	3.0	REVIEW UCC
				DISCUSSION	1.0	
PHYS 5031	Electricity and Magnetism 1	COMPOSITE	4.0	LECTURE	3.0	REVIEW UCC
PHYS 5032	Electricity and Magnetism 2	COMPOSITE	4.0	LECTURE	3.0	REVIEW UCC
PHYS 5041	MATH METHODS IN PHYSICS 1	EXPEDITED	5.0	LECTURE	3.0	REVIEW UCC
				DISCUSSION	1.0	
PHYS 5051	Modern Physics	COMPOSITE	4.0	LECTURE	3.0	REVIEW UCC
PHYS 5071	COMPUTER SIMULATION METH	EXPEDITED	4.0	LECTURE	2.0	REVIEW UCC
				LABORATORY	2.0	
PHYS 6001	Classical Mechanics	COMPOSITE	5.0	LECTURE	3.0	REVIEW UCC
				DISCUSSION	1.0	
PHYS 6011	Statistical Mechanics 1	COMPOSITE	5.0	LECTURE	3.0	REVIEW UCC
				DISCUSSION	1.0	

PHYS 6021	Quantum Mechanics 2	COMPOSITE	5.0	LECTURE DISCUSSION	3.0 1.0	REVIEW	UCC
PHYS 6031	Electrodynamics 1	COMPOSITE	5.0	LECTURE DISCUSSION	3.0 1.0	REVIEW	UCC
PHYS 6032	Electrodynamics 2	COMPOSITE	4.0	LECTURE	3.0	REVIEW	UCC
PHYS 6041	Math Methods 2	COMPOSITE	4.0	LECTURE	3.0	REVIEW	UCC
PHYS 8501	Res Sem: Particles & Nuclei	EXPEDITED	1.0 - 4.0	LECTURE SEMINAR	1.0 1.0	REVIEW	UCC
PHYS 8900	Special Topics in P and A	EXPEDITED	1.0 - 3.0	LECTURE	3.0	REVIEW	UCC

Exceptions - Non Three Hour Lecture

The Ohio University Faculty Senate Resolution on the Number of Semester Hours per Course and Course Meeting Times for Quarters to Semesters (<http://www.ohio.edu/facultysenate/upload/CourseHourTimeResolutionfinal4-2009.doc>) resolved that, as a norm, undergraduate lecture courses on the Athens Campus shall be 3 semester hours and that exceptions to these norms will be allowed on the basis of pedagogical justification specific to a course or course sequence.

Three-hour courses are important for balancing student schedules, and three lecture hour per week blocks are important for classroom utilization. It is understood that there are special cases where the 3-lecture hour course norm does not apply, sometimes for categories of courses (recitals or band), sometimes for disciplinary standards, and sometimes for other reasons.

For the semester courses taught by your department that do not meet the 3 lecture hour norm, give a brief explanation of why the norm was not followed and/or what circumstances make these deviations from the norm not create a problem with classroom scheduling or student schedules. (Notes: Categories of courses can be addressed as a group rather than individually. If you are using a 'disciplinary standard' argument, please make comparisons to Ohio Schools on semesters or to Ohio University peer schools on semesters. If you are using a block scheduling approach, please list the courses that will be block scheduled and identify the semester(s) where the block scheduling applies.)

Reason: Explanations for courses that do not meet the 3 lecture hour norm:

* ASTR 4271 (2 lecture hours + 1 independent study hour per week)

This is an advanced course focusing on observational methods and is based to a large extent on the quarters course ASTR 410. The class makes use of lectures and homework that includes readings and problem sets, but also includes a very substantial investment of time by the students working individually on an observational project. This project involves the use of portable telescopes and digital imaging equipment to carry out astronomical observations that by necessity take place at night, often at remote locations, scheduled with constraints imposed by weather and location of observed targets in the sky, and with significant interaction with the instructor. This component of the class thus has attributes of a lab, but since it does not take place at a regularly scheduled time, we are not allowed to label it as a lab activity according to the Q2S guidelines. We therefore identify this component of the course as Independent Study, which in conjunction with 2 hours of lecture per week corresponds to the 3 credit hours assigned to this class.

* PHYS 2051H and 2052H (5 contact hours per week):

The honors section of the General Physics series (with calculus) is reserved for Physics and Astronomy majors only. This course uses novel teaching methods that combine laboratory and lecture elements along with active student problem-solving tasks. To be effective, educational studies (Ref: E. Mazur et al., Harvard) have shown that daily sessions between students and instructor are best. Since this is a small class (typically 10-15 students) and does not use a large lecture hall classroom, the scheduling of this honors class to meet five days per week is not expected to be a problem. In addition, a lab section (as for the regular 2051 and 2052 lectures, which have enrollments of 80-120 students) is not needed since the lab is done during class time. Hence, we request an exception from the standard three lecture per week that is typical for semester classes.

* PHYS 3001 (4 contact hours per week):

The Advanced Mechanics course in physics is typically taken in the junior year by students majoring in physics, astronomy and meteorology. This semester class is a merge of a two-quarter sequence that had a total of 60 lectures plus 20 recitations. In transitioning this course to semesters, our department made the decision to retain 60 lectures, which requires 4 contact hours per week, whereas the recitations will be handled as optional help sessions, perhaps run in the evening, or as additional office hours for the instructor. The other option that was considered had two semester classes, but this creates scheduling problems for students who wish to finish a degree in four years. It is important to retain 60 lectures, as this material is crucial to senior-level courses in the physics major. Also, the class size is small, so a large lecture hall classroom is not needed and scheduling a classroom should not be a problem. Hence, we strongly recommend that this course be exempted from the standard three contact hours per week for semester classes.

* PHYS 4071 (2 lecture hours + 2 computer lab hours per week):

The material covered in the 2 lecture hours will be designed into computer code under guidance of the instructor, and previously created code will be discussed and analyzed. Thus, the students will be meeting with the instructor 3 times a week. The scheduling will have to be somewhat individualized due to availability of the computer facilities.

* PHYS 4511 (1 lecture hour per week):

This course is a needed introduction to radiation for students who may use radiation in their research or profession. This can be achieved by a course containing just one lecture hour per week, and this reduced class time will not seriously interfere with the students academic program.

Course ID	Name	Type	Contact Hours	Doc. Status	Review Level
ASTR 4271	Observational Astrophysics	SEMESTER	2.0	REVIEW	UCC
PHYS 2051H	GENERAL PHYSICS	COMPOSITE	5.0	REVIEW	UCC
PHYS 2052H	GENERAL PHYSICS	COMPOSITE	5.0	REVIEW	UCC
PHYS 3001	MECHANICS	EXPEDITED	4.0	REVIEW	UCC
PHYS 4071	COMPUTER SIMULATION METH	EXPEDITED	2.0	REVIEW	UCC
PHYS 4511	RADIATION PHYSICS	EXPEDITED	1.0	REVIEW	UCC
PSC 1110	THE METRIC SYSTEM	EXPEDITED	1.0	REVIEW	UCC