

**George Mason University – Office of the Registrar
Form**

Undergraduate Course Approval

Please complete this form and attach a copy of the syllabus and catalog description for new courses. Forward the form and attachments to your departmental curriculum committee for approval, and then to your College/School curriculum committee, or Dean's office, for final approval. The approved form should then be forwarded to the Academic Scheduling Office, MS 3D1. This form is for **undergraduate course approval only**. Please see the Provost Office/Graduate Council website to obtain a copy of the Graduate Course Approval Form and for details about the graduate course approval process.

Note: Colleges and Schools are responsible for submitting new or modified catalog descriptions (35 words or less, using catalog format) to Creative Services by deadlines outlined in the yearly Catalog production calendar.

Please indicate: New _____ **Modify** X **Delete** _____

Department/Unit: Physics and Astronomy **Course Subject/Number** ASTR 114

Submitted by: Joseph Weingartner **Ext:** 3-4596 **Email:** jweinga1@gmu.edu

Course Title: Introductory Astronomy Lab: Stars, Galaxies, and the Universe

Effective Term (New/Modified Courses only): S 08 **Final Term** (deleted courses only): _____

Credit Hours: (Fixed) 1 (Var.) _____ to _____ **Grade Type** (check one): X Regular undergrad (A, B, C, etc.)
_____ Satisfactory/No Credit only
_____ Special undergrad (A, B, C, etc. + IP)

Repeat Status* (check one): _____ NR-Not repeatable _____ RD-Repeatable within degree _____ RT-Repeatable within term

*Note: Used only for special topics, independent study, or internships courses **Total Number of Hours Allowed:** _____

Schedule Type Code(s): 1. _____ LEC=Lecture SEM=Seminar STU=Studio INT=Internship IND=Independent Study
2. LAB LAB=Lab RCT=Recitation (second code used only for courses with Lab or Rct component)

Prereq _____ **Coreq** _____ (check one): _____

Note: Modified courses - review prereq or coreq for necessary changes; Deleted courses - review other courses to correct prereqs that list the deleted course.

Description of Modification (for modified courses): Change title from "Introduction to Modern Astronomy Lab II" to above title and eliminate coreq (ASTR 113).

Special Instructions (major/college/class code restrictions, if needed): _____

Approval Signatures:

Department or Unit: Robert Shulul **Date:** 10/18/06
(Signature)

College/School Committee: _____ **Date:** _____
(Signature)

Astronomy 114

Section _____

Office Hours: 1:30 – 2:30 Monday**Spring Semester/2006****Instructor: Becky Ericson****Schedule of Labs and Quizzes**

Please note that this is a general syllabus for all sections. Each section will cover the same material during the designated week, however the specific time and date will depend on the section you are registered for. Quizzes are available for each section immediately after the scheduled class time each week.

Week of	Lab Exercise
23 January	Introduction to Astronomy Laboratory
	No quiz –first day attendance mandatory or instructor may drop you from class
30 January	Atomic Spectra
	Quiz - Atomic Spectra and Energy Flow out of the Sun
6 February	Energy Flow Out of the Sun
	Quiz - Energy Flow out of the Sun and Stellar Classification
13 February	Stellar Classification
	Quiz - Stellar Classification and H-R Diagram
20 February	Rotation of the Sun
	Quiz – No Quiz this week
27 February	The Hertzsprung-Russell Diagram
	Quiz - H-R Diagram and Photoelectric Photometry
6 March	Photoelectric Photometry of the Pleiades
	Quiz - Photoelectric Photometry and Observation of Variable Stars
13 March	NO CLASSES – SPRING BREAK
	Quiz – No Quiz this week
20 March	Observation of Variable Stars
	Quiz - Observation of Variable Stars and Radio Astronomy
27 March	Radio Astronomy of Pulsars
	Quiz - Radio Astronomy of Pulsars and Supernova 1987A
3 April	Supernova 1987A
	Quiz – Supernova 1987A and Expansion of the universe
10 April	NO ASTRONOMY LABS SCHEDULED (unless we need to make up a lab, etc.)
	Quiz – NO QUIZ THIS WEEK
17 April	Expansion of the Universe
24 April	Make-up Lab - Large Scale Structures of the Universe
1 May	NO ASTRONOMY LABS SCHEDULED (unless we need to make up a lab, etc.)

OBJECTIVE: This is the laboratory portion of the introductory course Astronomy 113. As part of the General Education Program, the lab portion of the course will help you develop skills in analytical and quantitative reasoning. It will also give you an introduction to the methods of inquiry used in scientific thought, an important way of thinking in today's world. Hands-on experimentation and the use of realistic computer program simulations will help you better understand what we know about the universe we live in and how we are coming to know it better.

You will be expected to prepare for each lab before coming to class. Your instructor may spend some time at the beginning of each session reviewing the background material for the lab exercise and answering any questions you may have about the lab write-up. **Make sure that you bring to each class whatever supplies are needed** (i.e. laboratory manual, pencils, ruler, calculator, answer sheets, etc.). Reports are due at the end of each class. Lab reports should be neatly organized, completely legible, and have a conclusion of 5-10 sentences about what you learned from the lab and how the lab exercise illustrated the purpose. Sometimes a specific question to address will be supplied by the instructor. A working knowledge of algebra, geometry, and trigonometry is necessary for arriving at the quantitative results of some of the laboratory exercises. Familiarity with using personal desktop computers is also essential.

Grading: Each lab exercise will be graded on a scale of 0-10 points. In all, ten lab exercises and a make-up are scheduled. You must complete at least ten of these lab exercises, which will comprise 85% of your final lab grade. (If you complete all eleven, including the make-up lab, your best ten lab exercise grades will be counted.) You must attend your scheduled lab time. Come on time and expect the lab to take the entire time scheduled. There are provisions for only one missed lab. Other make-up labs will be held at the instructor's discretion for labs missed due to bad weather, etc. Additional missed labs will be entered as a zero grade.

Quizzes will account for the remaining 15% of your grade. Quizzes will be conducted in the CAS Testing and Tutoring Center (See "Quizzes at the TTC" below). **There will be no make-up quizzes.** One quiz grade will be dropped if you have taken all of the quizzes. *Note: No quiz will be conducted during the first week of classes or after the final regularly scheduled lab.*

Extra credit may be considered on an individual basis, at the instructor's discretion, but will count for no more than one (missed) lab exercise.

The following categories will be used to determine your midterm/final grade:

Letter Grade	%
A+	97-100
A	93-96.9
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	75-79.9
C	70-74.9
C-	67-69.9
D	60-66.9
F	below 60

Quizzes at the Testing and Tutoring Center:
Student Union Building II, Room 2002 and 2002A
<http://ttc.gmu.edu/> .

The hours of operation are posted on the website and may be subject to change during the semester. Please make sure to check the site frequently for updates.

Rules and regulations governing conduct while in the center are located on the website. Please review them before going to the center for testing or tutoring services. You will need your student ID to sign in before taking a quiz.

You must go to the center to complete a quiz no later than **the day before** your section's scheduled meeting time each week. The *next* quiz will be available **after** lab class and **until** the end of the business day before the next lab class is held. If you change sections at the beginning of the term you must also change the section number at the testing center to make sure that your test is available and that the instructor gets your scores.

Quizzes will consist of 10 multiple choice questions, 5 questions from the **last** lab exercise and 5 from the **upcoming** lab exercise that will be done during the **next** class. Therefore, you should read the laboratory write-up for the upcoming laboratory **before** taking a quiz.

Classroom Environment

Your success in this course depends, in part, on a classroom environment that is conducive to learning, and this is something that can only be achieved with your participation. In addition to being involved in the discussion at the beginning of class and staying focused on the laboratory exercise to follow, the manner in which you conduct yourself in the classroom will also impact your grade. Students who are late for class or leave class before completing the entire assignment may have points deducted for that lab.

The astronomy lab is not the appropriate place to socialize, sleep, surf the web, take or make phone calls, or catch up on work from your other courses. Disruptive behavior will not be tolerated and may result in expulsion from the classroom, or from the class. You and your classmates have enrolled in this course to learn. Show each other the same consideration and respect that you would like to be shown. .

Food and drink are not permitted in the astronomy laboratory. Please leave all food and drink containers outside the lab, or packed away in your bag. Make sure that all cell phones and pagers are turned off during lab class. The keyboard trays are not very sturdy, try not to lean on them, or place heavy objects on the tray.

Before leaving the lab, clear your work station and push the computer keyboard and chair back in place.

Honor Code Adherence

You are expected to adhere to the George Mason University student honor code, as noted in the school catalog:

"George Mason University shares in the tradition of an honor system that has existed in Virginia since 1842. The Honor Code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Therefore, students are responsible for understanding the provisions of the code. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Therefore, cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report all alleged violations of the Honor Code to the Honor Committee. Any student who has knowledge of, but does not report, an Honor Code violation may be accused of lying under the Honor Code."

Collaborative work:

Occasionally you will be asked to work in groups, or to turn in one lab report for a group of students. Each member of a group should participate fully and should be able to provide an overview of the entire lab if requested.

While group work is an important part of the lab, it is also important that you do individual work at times in the lab. Individual assignments should be your own work. Copying another's work and presenting it as your own is basis for an Honor Code violation. If you are not sure whether you are allowed to work with lab partners on an assignment, ask your instructor for clarification.

Memo re. modification to ASTR 114

Catalog description:

ASTR 114 Introductory Astronomy Lab: Stars, Galaxies, and the Universe (3:3:0) Laboratory course associated with ASTR 113. ASTR 113 and 114 can be used to fulfil a 4-credit lab science requirement; not for physics majors.

Course objectives:

1. Understand the basic principles of astronomy
2. Understand the structure of the solar system and nature of its constituents.
3. Understand the scientific method.

Necessity for the revision:

ASTR 111/112 and ASTR 113/114 are each self-contained. It is not necessary to take ASTR 111/112 before ASTR 113/114. ASTR 112 is not, and has not been, a prereq for ASTR 114. The current names, with the "I" and "II" designations, imply otherwise. The proposed names rectify this problem.

Relationship to similar courses in the department:

No change, as no course content is changing.

Relationship to similar courses in other departments:

Again, no change.

Anticipated change in audience and enrollment:

No anticipated change.

List of potential instructors:

1. Rebecca Ericson (lab coordinator)
2. Graduate Teaching Assistants

Anticipated change in frequency at which course will be offered:

No change.

Additional resources necessitated by the revision:

None.

ASTR 111/112 plus ASTR 113/114 satisfied the previous 2-semester lab science gen ed requirement. Now, ASTR 113/114 alone will satisfy the gen ed requirement for one semester's worth of lab science.

A syllabus from a previous semester is attached. Since the course content is not changing, future syllabi will be similar.