Welcome! The goals for this course are:

- Understanding how we can infer MANY physical stellar properties such as age, mass, size, stage in evolution and composition by simply measuring one quantity – light.
- Generating curiosity about the Universe and how the Earth, us and everything on the planet comes from stars.
- Practice science by engaging in astronomy simulations. To quote the first lecture for this course:

  “Stellar evolution and production of new elements is the physical source for all life in the Universe. Any educated person should have some understanding of this process”

Required Items for Course:

1. **Required:** Get an account for the course lectures managed at [Great River Technologies](#) (should cost $20). This is the textbook and reading material for the course.
2. **Required:** Scientific Calculator (for tests - you cannot use smartphones during tests)
3. **Required:** Updated versions of browsers Firefox (works best on macs with Java) or Chrome. Latest version of JAVA

**Course Materials**

The textbook for this course is a set of web materials handled by the company Great River Technologies. You will need to purchase an access code and I have just found out it is a bit confusing. Click on the button to purchase an access code, select the institution and course (122). It now will show you one selection under the name Bothun. Add this to the cart and proceed to checkout. Now supposedly after you enter in all of your info, it will email you an access code. When you use it, select Johnson. I haven't seen it past the billing information section so I'm guessing as to what the next screens look like.

Unfortunately, nothing is ever straightforward. Attached is a document explaining the steps with pictures. [122springgrtsite.pdf](#)

**Course Structure**

This course is set up in a series of modules, each taking roughly 2 weeks to cover - some will take more, others will take less. The first two modules are the most math intensive for the course. They cover the basic principles of detecting light and the properties determined from measured light such as star temperature, composition and distance. The third module delves into the inner workings of stars like the sun and how we determine stellar mass and lifetime and the fourth module is all about star death and the exotic remnants left behind from massive stellar explosions. The last module covers material
from astronomy 121 and will be briefly discussed as a review. At the end of each module are little quizzes that are there for you to practice problems and test what you know. They don't count for credit and you can take them as many times as you'd like. If you can't access them, please let me know.

**Grading**
You are graded on the following:
- Homework (4 assignments) 32%
- 1 midterm (best of 2 tests) 34%
- Final 34%

All grades are curved based on the class average which is set to a B-. Example: If the class average is 70% for the course, then this is considered a B- and all grades are based on this scale. Traditionally, the averages for the tests are low and the averages for the homework are high. Thus a B on the homework may correspond to an 85%, however a B on a midterm might be a 70%. Because these grade scales are largely different, you can't use one curve scale - say for midterm 1 to determine your grade for midterm 2, your homework, final or course grade. If you took 121 with me, its a similar grading scheme.

The course grade is a weighted sum homework and tests - meaning that points from homework and tests can't be simply added up to give you the final grade for the course. Grade ranges (e.g. A, B,C etc) are determined by the standard deviation of the grade distribution. This is unique for each class. To give you a sense of how the grades break down, here is the grade distribution from the last class:
- 82% to 94%: A- to A+
- 69% to 81% B- to B+
- 50 to 68% C- to C+
- Below 50: D... F

Again, this distribution will change according to the class statistics.
If you are concerned about your grade for this course, I suggest taking it pass/no pass.

**Homework**
You are graded on 4 homework assignments. Each homework is weighted equally meaning that regardless of what the total points, each assignment is worth 8% of your total grade. If you skip even one, it will significantly effect your grade. **Homework is to by typed in the assignment hand-in form and turned in at the beginning of class.** Any diagrams or calculations can be drawn/written by hand - neatly.

All of the homework assignments will require you to run a JAVA script simulation on your computer. These simulations are old and occasionally won't work on certain operating systems or browsers (always try **Firefox** first and be sure to get **JAVA**). It is my intention to demo these and other simulations as much as possible in class. Students who wait to begin the homework on the day its due maybe unpleasantly surprised to find that the simulation doesn't run on their computer. They should all work on the library computers and PCs.
Sometimes you are asked to go look up information on other websites to answer certain questions. You are to respond to these questions by writing the answer in your own words. Do cite sources (a link to the website is just fine), but don't use quotes from the articles to answer the question. Again use your own words.

**Math:** Math is a necessary tool needed to explain physical processes - you just can't avoid it in stellar astronomy. You will be calculating quantities such as wavelength, stellar surface temperature, distance and mass using some basic astronomy equations given in the first 3 modules of this course. I emphasize basic because the math in this course is all algebra-based. You will be given ample examples in class utilizing each equation.

**Copying:** Homework is to be done on an individual basis. It is okay to work with someone, but if you and your study partner have identical answers or even just switch a few words or sentences around, this is considered copying and results in zero credit for all similar answers. In a class this size, it is easy to catch so don't do it! This goes for simulations as well - do it yourself! I don't want to see identical data on different homework assignments!

**Avoiding Plagiarism**
Don't cut and paste text from sources to answer questions - even if you cite these sources. This is very very bad! Some professors make it a mission to go after students by notifying administrators and professors of the suspected plagiarist. Don't sabotage yourself! If you are confused as to what is considered plagiarism click on this example.

**Late Policy:** Late homework is accepted but loses 10% of the total assignment points for each day they are overdue, and yes this includes weekends.

**Redos:** There are no “redos” for homework or tests.

**Homework Pick up:** Graded homework is left outside my office (Wil 417) on a desk for you to pick up at your leisure. Usually it takes 1-2 weeks to get homework graded.

**Policy for Emailing Homework:** Unless you are absent and can't find someone to submit for you, you must hand in your homework in class. However, if you are not able to attend class, you may email it to me. **The format must be in word or pdf (not Pages).** The drawback is that you will not get your homework back so you won't be able to find out what you got correct and what you missed. You will simply receive a score in blackboard. If your homework is late you can also email it as well. Again, same rules apply.

**Responsibility:** You are responsible to monitor your grades. If you don't see a grade for an assignment you submitted, you must let me know ASAP. Since it takes 1-2 weeks to grade homework, I will post a column in blackboard that shows your homework has been received. This column will be available the evening of the homework due date. If you don't see that your homework has been received in blackboard, then it is your
responsibility to hand-in the homework again. Thus homework lost or inadvertently unattached to an email is not an acceptable excuse for missing homework!

Tests
You will have two midterms and a final. The final is cumulative but the midterms are generally not. However, tools/techniques learned prior to the first midterm are applicable to the second midterm material. Test material comes from the readings on the Great River Technologies site, homework and class notes. Your midterm grade will be the best of the two midterms. This was created as a response of giving too many make up exams. For example, if you get an 87% on one test and a 72% on the 2nd midterm, your midterm grade is 87%. If you take the first midterm and then miss the 2nd midterm it won’t count against you, but you won’t have a chance to improve your midterm score. All tests may contain some combination of multiple choice, true/false, matching and written answer portion.

Make up policy: Make up tests are only given to those who had a serious illness and provide a note from a doctor or have a family emergency that can be documented. If you do need to make up a test and have the proper documentation, it will be an essay-question exam. Traditionally, students get lower scores on these than the in class tests.

You can’t make up a test due to vacation, etc.
Final: The final will be in class TUESDAY June 11 at 3:15 pm in Fenton 110. You have 2 hours for the test. If you have more than 3 finals in one day, you can reschedule the test, but it will be a long answer style test - no multiple choice. If you qualify, provide proof that you have 3 other tests on Tuesday and a new test will be scheduled for you.

Email, Questions and Homework Help
Come to class for homework hints and examples of using equations. Come to office hours or email me for more help. There are no TAs for the course - only graders. Be smart about email - if it can be answered on the syllabus, I probably won't answer it.

Extra Credit
There is none for this course.

Students and Disability Services
If you require extra assistance, such as notes, extra time on assignments, exams, etc., please contact me before or after class and provide the appropriate documentation from Accessible Education Center as soon as you can. Also let me know what works best for you.

Academic Dishonesty
If you are caught cheating looking at your neighbor’s test or with notes either on your phone, mp3 player, a piece of paper, hat, arm, water bottle or whatever, you get an automatic 0 on the test. Therefore, no headphones, sunglasses, hats or phones during test time. You can't use your phone or any web-capable device to do calculations for the tests.