

ASTR 101: PRINCIPLES OF ASTRONOMY

SPRING 2020

Section 4 Schedule #20317

COURSE INFORMATION

Class Days: Monday, Wednesday, Friday

Class Times: 1:00-1:50 pm

Class Location: EBA-345

Mode of Delivery: Lecture

Office hours: M, W 2:00-3:00 pm, and by appointment

Instructor: Prof. William Welsh

Phone: (619) 594-2288

E-mail: wwelsh@sdsu.edu

Office Location: Physics P-235

E-mail is the best way to contact me. I will normally answer within one business day.

STUDENT LEARNING OUTCOMES

Official Course Catalog Description:

Discover the universe: planets, stars, galaxies, and our place in the cosmos; the Big Bang; how stars shine; comets, meteors, nebulae, the Milky Way; black holes and other exotic objects.

This course is not open to students with credit in Astronomy 201.

Purpose and Course Content:

The goal of this course to help students understand and appreciate the wonders of the Universe. Students will be able to answer such questions as: What makes the Sun shine? Why do stars twinkle? How do telescopes work? What makes Mars such an interesting planet? What is a planet and what is a galaxy? What is a black hole? How old is the Universe? Students will not only learn the answers to these questions, but will also learn *how we know the answers*. Thus students will learn about telescopes, atoms, nuclear fusion, electromagnetic radiation, spectroscopy, gravity, and other relevant physical processes and laws. As a science class, emphasis will be placed on the importance of data and the testing of hypotheses, as opposed to belief and/or doctrine.

Student Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- apply physical laws of atoms and light to understand celestial phenomena
- cite the content and large-scale structure of the Universe
- explain the phases of the Moon and the cause of the seasons
- compare and contrast the different types of planets
- summarize how stars shine through the process of thermonuclear fusion
- identify/recall the stages of stellar evolution
- describe characteristics of our Milky Way and other galaxies
- synthesize the evidence for the Big Bang cosmology

Relation to Other Courses:

This course satisfies the General Education requirement outlined in Part A (Natural Sciences and Quantitative Reasoning), Section 1 (Physical Sciences). A related class is ASTR 109 (Astronomy Laboratory). Although concurrent enrollment is encouraged, ASTR 101 can be taken without taking ASTR 109.

ENROLLMENT INFORMATION

Prerequisites: The only prerequisite is student interest; there are no *college-level* prerequisites required. However, some basic mathematical skills are useful, such as:

- The use of the metric system.
- The use of scientific notation, as in $M = 2 \times 10^{33}$ grams.
- The use of simple relations such as $y = 1/x^2$.

The use of mathematics will be kept to a minimum, and in most cases is not needed for a basic understanding of the *concepts*. However, in some cases a *quantitative* understanding is as important as a *qualitative* understanding. We will review the mathematical concepts as we go along.

Adding/Dropping Procedures: Add codes are no longer used. The last day to add or drop the class or change the grading basis is February 4, 2020.

UNIVERSITY POLICIES

Accommodations: If you are a student with a disability and are in need of accommodations for this class, please contact Student Ability Success Center at (619) 594-6473 as soon as possible. Please know accommodations are not retroactive, and I cannot provide accommodations based upon disability until I have received an accommodation letter from Student Ability Success Center.

Student Privacy and Intellectual Property: The Family Educational Rights and Privacy Act (FERPA¹) mandates the protection of student information, including contact information, grades, and graded assignments. I will use Blackboard to communicate with you, and I will not post grades or leave graded assignments in public places. Students will be notified at the time of an assignment if copies of student work will be retained beyond the end of the semester or used as examples for future students or the wider public. Students maintain intellectual property rights to work products they create as part of this course unless they are formally notified otherwise.

Religious observances: According to the University Policy File, students should notify the instructors of affected courses of planned absences for religious observances by the end of the second week of classes.

Academic Honesty: The University adheres to a strict policy prohibiting cheating and plagiarism². Examples of academic dishonesty include but are not limited to:

- copying, in part or in whole, from another's test or other examination;
- obtaining copies of a test, an examination, or other course material without the permission of the instructor;
- collaborating with another or others in work to be presented without the permission of the instructor;
- falsifying records, laboratory work, or other course data;
- submitting work previously presented in another course, if contrary to the rules of the course;
- altering or interfering with grading procedures;
- assisting another student in any of the above;
- using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work);

¹<https://bfa.sdsu.edu/oerc/students/ferpa.aspx>

²http://go.sdsu.edu/student_affairs/srr/cheating-plagiarism.aspx

- copying and pasting work from an online or offline source directly and calling it your own;
- using information you find from an online or offline source without giving the author credit;
- replacing words or phrases from another source and inserting your own words or phrases.

The California State University system requires instructors to report all instances of academic misconduct to the Center for Student Rights and Responsibilities. Academic dishonesty will result in disciplinary review by the University and may lead to probation, suspension, or expulsion. Instructors may also, at their discretion, penalize student grades on any assignment or assessment discovered to have been produced in an academically dishonest manner.

Resources for students: A complete list of all academic support services—including the Writing Center³ and Math Learning Center⁴—is available on the Student Affairs Academic Success website⁵. Counseling and Psychological Services (619-594-5220) offers confidential counseling services by licensed therapists; you can Live Chat with a counselor at http://go.sdsu.edu/student_affairs/cps/therapist-consultation.aspx between 4:00pm and 10:00pm, or call San Diego Access and Crisis 24-hour Hotline at (888) 724-7240.

Classroom Conduct Standards: SDSU students are expected to abide by the terms of the Student Conduct Code in classrooms and other instructional settings. Prohibited conduct includes:

- Willful, material and substantial disruption or obstruction of a University-related activity, or any on-campus activity.
- Participating in an activity that substantially and materially disrupts the normal operations of the University, or infringes on the rights of members of the University community.
- Unauthorized recording, dissemination, or publication (including on websites or social media) of lectures or other course materials.
- Conduct that threatens or endangers the health or safety of any person within or related to the University community, including
 - physical abuse, threats, intimidation, or harassment.
 - sexual misconduct.

Violation of these standards will result in referral to appropriate campus authorities.

Medical-related absences: Students are instructed to contact their professor/instructor/coach in the event they need to miss class, etc. due to an illness, injury or emergency. All decisions about the impact of an absence, as well as any arrangements for making up work, rest with the instructors. Student Health Services (SHS⁶) does not provide medical excuses for short-term absences due to illness or injury. When a medical-related absence persists beyond five days, SHS will work with students to provide appropriate documentation. When a student is hospitalized or has a serious, ongoing illness or injury, SHS will, at the student's request and with the students consent, communicate with the students instructors via the Vice President for Student Affairs and may communicate with the students Assistant Dean and/or the Student Ability Success Center⁷.

SDSU Economic Crisis Response Team: If you or a friend are experiencing food or housing insecurity, or any unforeseen financial crisis, visit sdsu.edu/ecrt, email ecrt@sdsu.edu, or walk-in to Well-Being & Health Promotion on the 3rd floor of Calpulli Center.

³<https://writingcenter.sdsu.edu>

⁴<https://mlc.sdsu.edu>

⁵http://go.sdsu.edu/student_affairs/academic_success.aspx

⁶<https://sa.sdsu.edu/student-health-services>

⁷http://go.sdsu.edu/student_affairs/sds/

COURSE MATERIALS

Required Textbook: *Astronomy - The Universe at a Glance* (1st edition), by Chaisson and McMillan (Pearson Publishers; ISBN-13: 978-0-321-79976-0).

The on-line companion web site “MasteringAstronomy” at <http://www.MasteringAstronomy.com> is also required. You will need to purchase access to MasteringAstronomy for the homework. It comes with your textbook, or e-textbook, or you can purchase access separately. It can be accessed through BlackBoard (see the end of this document for instructions).

Students are required to read a small number of on-line web sites such as *spaceweather.com* and NASA’s *Mars Exploration Program*.

A subset of the class notes will be made available (in .pdf format), with the following important restriction: The lecture notes will be available only for a limited time prior to the lecture. The notes will be posted a few days before the lecture, and will expire after the lecture on that topic is given. Students should download and bring the notes to the lectures, and add content and updates to the notes in class. After the lecture is given, the corresponding notes will no longer be available. These notes are learning aides, not substitutes for the lectures.

Recommended Materials: The Astronomy Department provides a free *Astronomy Help Room* for assistance and tutoring for this course. The schedule is posted on the class website.

Immediate Access Course: Some or all of the required course materials for this class are provided in a digital format by the first day of classes and are free through the add/drop date. Your SDSU student account will then be charged a special reduced price for use of the materials for the remainder of the semester unless you opt-out of the content by 11:59 PM on the add/drop date. Please visit www.shopaztecs.com/immediateaccess for additional information about Immediate Access pricing, digital subscription duration, print add-ons, opting out and other frequently asked questions.

Recommended (Optional) Materials: A good on-line resource is “Astronomy Notes” by Nick Stobel: <http://www.astronomynotes.com/>.

COURSE DESIGN

Style of the Course: This course will be a traditional lecture course. The subjects covered will include five main areas:

- The *Rules and Tools* of astronomy/astrophysics
- The celestial sphere and the motions of bodies in the Solar System
- Planets and other objects in our Solar System and beyond
- The structure, activity, and evolution of the Sun and other stars
- Galaxies, the large-scale structure of the Universe, and cosmology

Individual and Group Activities Required: Astronomy is an observational science, so there may be a component of the homework assignments that requires students to look at the sky and report what they observe (e.g. brightness and color of some stars or planets).

Students may work and study together, but *exams and homework assignments must be completed individually*. Homework that is not done independently will result in a zero grade for the assignment and loss of any extra credit points. Cheating in any form will result in failure of the assignment or exam and be reported to the Center for Student Rights and Responsibilities.

There will be frequent assignments on the Mastering Astronomy website. These are mainly interactive tutorials and multiple choice quizzes. Like all homework assignments, these should be done individually. Late homework will earn no points, though students can still do the assignment to help study the material.

GRADING POLICIES

Scored Activities and Weighting by Percentage of Total Score:

- 20% Homework Assignments (mostly MasteringAstronomy)
- 20% Exam #1 (multiple choice format)
- 20% Exam #2 (multiple choice format)
- 20% Exam #3 (multiple choice format)
- 20% Final Exam (comprehensive; multiple choice format)

Exam Dates:

- Exam #1: Friday February 14
- Exam #2: Friday March 13
- Exam #3: Friday April 17
- Final Exam: Friday May 8 at 1:00–3:00 pm

The exams will be multiple-choice format and require a ParScore Enrollment scantron form. Study guides will be posted on the class website. Calculators are allowed, but not smartphones, ipads/tablets, laptops, etc. Exams will be graded on a mild curve.

Exam dates (except the Final Exam) are subject to change. *As per University regulations, the time of the final exam cannot be changed under any circumstances.* Please review the rules regarding final exams at http://registrar.sdsu.edu/calendars/final_exam_schedule/spring_2020_final_exam_schedule

No individual extra credit projects will be accepted. However, extra credit projects that benefit the whole class may be awarded or offered on an ad hoc basis. For example, if a student identifies an error on this syllabus, that may result in that student earning extra credit. Or a student might ask an excellent question that can turn into an extra credit assignment. Extra credit can also be awarded for class participation, coming to office hours, and evidence of effort and enthusiasm to learn the material.

Please review the definitions of letter grades and the SDSU policies regarding grades on page 475-476 of the 2019-2020 General Catalog. If you are taking the course with the “credit/no-credit” option, you need a C or above to earn the credit (see pages 475-476 of the 2019-2020 General Catalog). An incomplete grade (“I”) for the course will only be given in cases involving serious medical or legal issues. The entire responsibility for arranging to make up the lost work lies with the student.

Excused Absence Make-up Policies: No make-up exams will be allowed unless there is a serious, legitimate reason (e.g. medical emergency) and full written documentation. If a make-up exam is deemed appropriate, an oral or essay exam may be administered instead of, or in combination with, multiple-choice questions.

OTHER COURSE POLICIES

Attendance Policy:

Attendance is not mandatory, but be aware that much of the course material is not contained in the textbook. It will be much easier to earn a good grade if you come to class. It is expected that you will attend all the lectures, read all the material assigned for homework - including the web pages assigned, and participate in class (e.g. ask questions, contribute to discussions, etc.). It is likewise expected that you will come to office hours for help or for additional discussion.

Classroom Etiquette:

I expect that the students will maintain a professional atmosphere and show respect to their fellow students. In particular, the following is prohibited in the classroom:

- Cell phones and similar devices (please turn the ringers off!)
- Texting, tweeting, emailing, etc.
- The reading of newspapers, magazines, etc.
- Talking above a whisper

- Eating or drinking anything noisy
- Doing homework for this or any other course
- Disrupting class by handing in homework after the class lecture has started.

Use of laptops/tablets/iPads for taking notes is acceptable, however, if you wish to use such a device in the classroom, you may be asked to sit in a special section reserved for laptop users.

Any form of disrespectful or disruptive behavior will not be tolerated. A student will be advised once by the instructor that his/her behavior is inappropriate. If this inappropriate behavior occurs again, the matter will be turned over to the University's Judicial Procedures Office for appropriate disciplinary action.

SAFETY ISSUES

The CSU takes the issue of classroom and campus safety very seriously. The office of Business and Financial Affairs has set up a web site where SDSU staff, faculty, and students can find information about San Diego State University's emergency preparedness plan and opportunities for training on many aspects of the classroom/workplace. See <http://bfa.sdsu.edu/emergency/>.

In particular, please note the following:

Campus Safety:

- Be aware of your surroundings.
- If you see something suspicious, report it!
- If you have an emergency, call 911 from any phone on campus.
- Other incidents, call Campus Dispatch at 4-1911.
- In the evening, call Campus Escort if you would like an escort to your vehicle or campus dorm.

Classroom Safety

- If there is an emergency, stay calm, and follow the procedure in the flip book.
- Follow the Evacuation Route if you need to evacuate. Please show up at the evacuation area since your absence from roll call could cause resources to be used that could be used to help others who may actually be in trouble.
- "Shelter in place" is usually called when a person that is carrying a weapon on campus has become violent and has injured others, or is threatening to injure others. Lock the door from outsiders, only open to the Department Safety Officer, PDS, or other officials of the University.

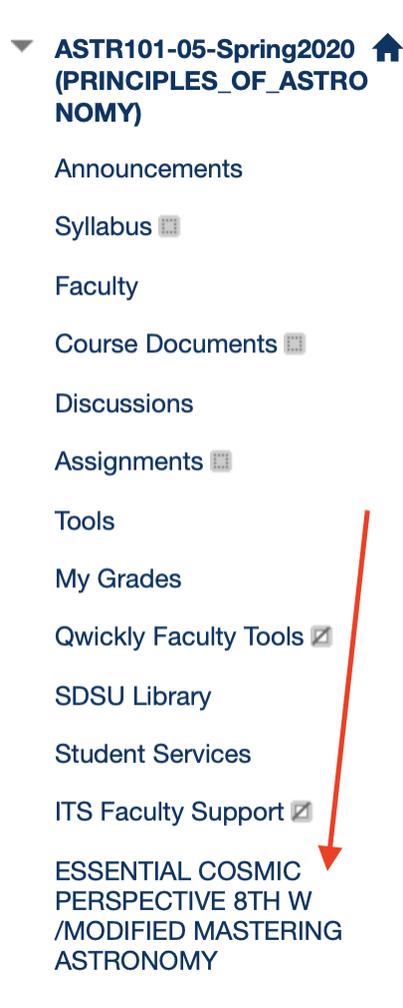
Note that during any emergency, *students should not use their cell phones*. The lines of communication are critical to keep open for emergency information. Only Staff and Faculty should keep their cell phones on, and only receive calls if the situation calls for it.

Registering for access to Pearson course materials via Partner Integration for ASTR 101.

[Launch Pearson Content](#) (Google Chrome or Firefox are strongly recommended, Safari is not supported)

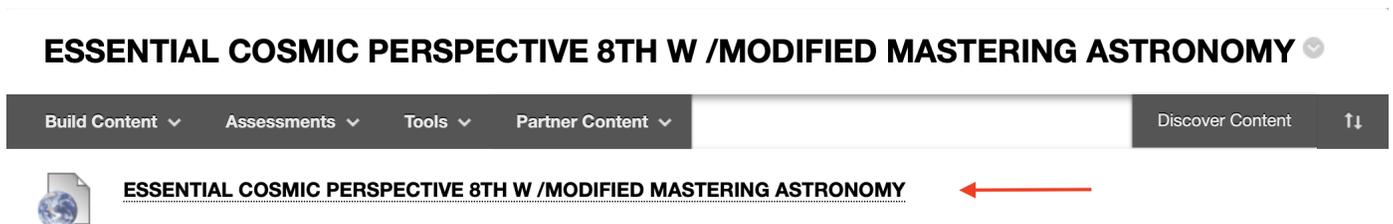
1.) Enter our Blackboard course.

2.) Select the link for “ESSENTIAL COSMIC PERSPECTIVE 8TH W/MODIFIED MASTERING ASTRONOMY”.



- ▼ **ASTR101-05-Spring2020** 
- (PRINCIPLES_OF_ASTRONOMY)
- Announcements
- Syllabus 
- Faculty
- Course Documents 
- Discussions
- Assignments 
- Tools
- My Grades
- Quickly Faculty Tools 
- SDSU Library
- Student Services
- ITS Faculty Support 
- ESSENTIAL COSMIC PERSPECTIVE 8TH W /MODIFIED MASTERING ASTRONOMY

3.) Next, click on “ESSENTIAL COSMIC PERSPECTIVE 8TH W/MODIFIED MASTERING ASTRONOMY”



ESSENTIAL COSMIC PERSPECTIVE 8TH W /MODIFIED MASTERING ASTRONOMY 

Build Content ▼ Assessments ▼ Tools ▼ Partner Content ▼ Discover Content ↑↓

 **ESSENTIAL COSMIC PERSPECTIVE 8TH W /MODIFIED MASTERING ASTRONOMY**

4.) Scroll down and click on the **Launch** button.



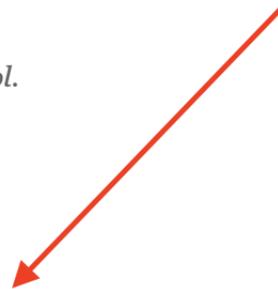
ATTENTION!

The LTI launch will open a new tool.

Welcome to RedShelf!

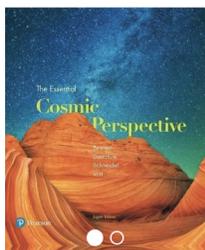
Cancel

Launch



5.) Click on “View Course Materials”.

ASTR 101 Section 5



Essential Cosmic P...

Textbooks 2

Total Students 40

[View Course Analytics](#)

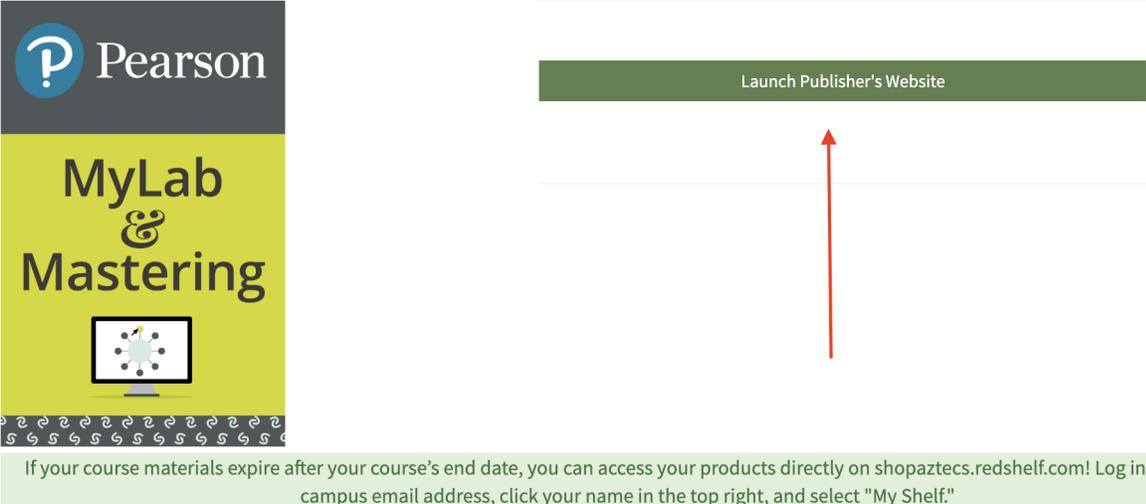
This course has 2 required titles.

[View Course Materials](#)



6.) Scroll down to find "Launch Publisher Website".

Modified MasteringAstronomy with Pearson eText -- Standalone Access Card -- for Essential Cosmic Perspective, The



If your course materials expire after your course's end date, you can access your products directly on shopaztecs.redshelf.com! Log in with your campus email address, click your name in the top right, and select "My Shelf."

7.) Select the **Open MyLab & Mastering** button to launch your Pearson course.



[Link User Accounts, if needed](#)

If prompted, select **I Accept** to agree to Pearson's End User License Agreement.

End-User License Agreement and Privacy Policy

By registering to use a Pearson Education online learning system, I certify that I have read and agree to the **Pearson End-User License Agreement and Privacy Policy** and the **Pearson Privacy Statement**.

I understand that my personal information may be stored in and/or accessed from jurisdictions outside of my resident country. I consent to this storage and/or access.

The personal information that I use with a Pearson Education online learning system can include my name and contact information, my answers to questions that are part of the course, my marks on tests or other course requirements, and any comments about me made by my instructor.

Pearson Privacy Statement

Pearson Privacy Statement

Pearson Education ("Pearson") recognizes the importance of protecting the privacy of Personally Identifiable Information about you as a user of our online learning applications, websites and educational evaluation tools ("applications"). Follows is an overview of Pearson's Privacy Policy which is wholly contained within the [Pearson End-User License and Privacy Agreement](#) to which end users consent when registering for a Pearson application.

Information considered by Pearson to be Personally Identifiable Information ("PII") is: your full name, address,

Pearson End-User License Agreement and Privacy Policy

End-User License Agreement and Privacy Policy

Last Revision Posted: 15 June 2012

These terms constitute an agreement between You and Pearson Education, Inc, and its direct and indirect affiliates ("Pearson"). By accessing or using the website and/or service with which these terms are associated, You acknowledge that You have read and accepted the terms of this Agreement. If You do not agree to abide by the terms and conditions of this Agreement, please do not register for or otherwise access or use this Website.

I Decline **I Accept**

Link your Blackboard user account to either (i) an existing Pearson account by entering your Pearson Username and Password, or (ii) to a new user Pearson account by selecting the **Create** button.



Register

Sign In with Your Pearson Account

Your account gives you access to your Pearson online courses and products.

Username

Password

Sign In

[Forgot your username or password?](#)

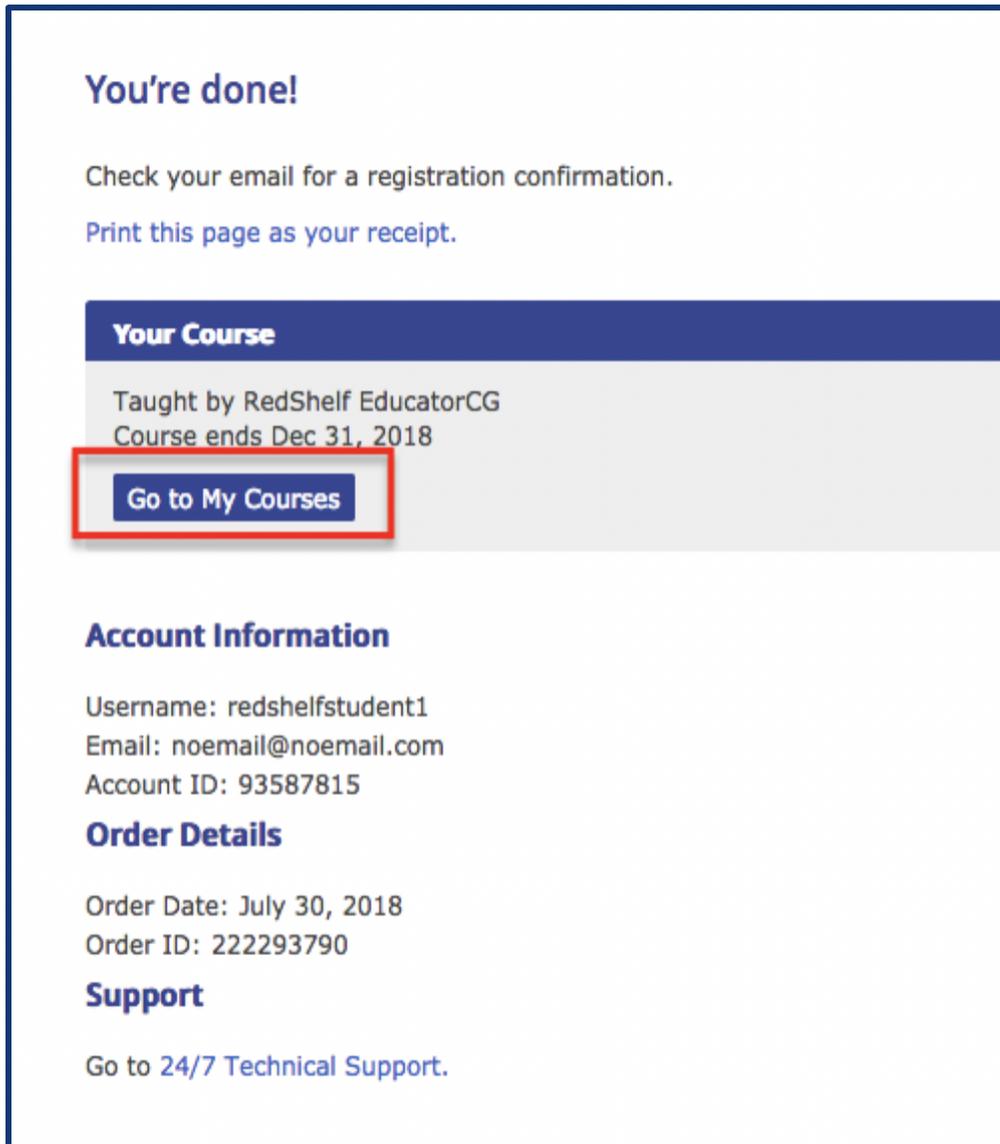
Create a Pearson Account

If you don't already have an account, create one.

Create

[Not sure if you have an account?](#)

After linking your accounts, select **Go to My Courses**.



You're done!

Check your email for a registration confirmation.

[Print this page as your receipt.](#)

Your Course

Taught by RedShelf EducatorCG
Course ends Dec 31, 2018

Go to My Courses

Account Information

Username: redshelfstudent1
Email: noemail@noemail.com
Account ID: 93587815

Order Details

Order Date: July 30, 2018
Order ID: 222293790

Support

[Go to 24/7 Technical Support.](#)

Pearson Technical Support: <https://support.pearson.com/getsupport/s/>

If Blackboard is DOWN, please go to www.pearsonmylabandmastering.com and click on **SIGN IN**. Login with your Username and Password to continue your homework.