

AST2000

Introduction to Astronomy

Course Outline

2020-2021

Pre-requisite(s)	N/A
Co-requisite(s)	N/A
Prepared by	Elizabeth Howell, Professor
Approved by	Adam Shane, Academic Chair, ASET
Normative hours	42.00
Grading system	A+ Through F
Experiential Learning	No

Applicable Program(s)	Level	Core/Elective
Multiple Programs	Multiple Levels	Multiple Core/Elective

COVID-19 Notice

Due to COVID-19 this course may be offered via remote delivery in 2020-21. Your course may have changes that are not reflected in the Course Outline. Please see the Course Section Information document for updated information about your course. If you have questions please contact your professor.

Course Description

What can the sky tell us about our place in the universe, and how life began? This introductory course to astronomy will teach students indigenous and Western constellations in the sky, as well as introduce them to the major planets. Students will act as beginning astronomers and engineers by performing sketches, doing research on astronomy topics, and learning about missions to Mars that are on the hunt for signs of life.

General Education Theme Area(s)

This is a General Education course that supports learning in the following theme area(s): Social and Cultural Understanding, Science and Technology

Essential Employability Skills

This course contributes to your program by helping you achieve the following Essential Employability Skills:

- EES 1** Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. (A)
- EES 2** Respond to written, spoken or visual messages in a manner that ensures effective communication. (A)
- EES 7** Analyze, evaluate and apply relevant information from a variety of sources. (A)
- EES 8** Show respect for diverse opinions, values, belief systems and contributions of others. (A)
- EES 10** Manage the use of time and other resources to complete projects. (A)

Assessment Levels — **T**: Taught **A**: Assessed **CP**: Culminating Performance

Course Learning Requirements / Embedded Knowledge and Skills

When you have earned credit for this course, you will have demonstrated the ability to:

1.) Explain the significance of astronomy in today's scientific work.

- Compare scientific findings in astronomy and other fields to gain a greater understanding of how the world works.
- Combine knowledge of chemistry and physics with astronomical knowledge to understand how planets, stars, galaxies and other astronomical objects are formed.
- Use astronomical principles to solve real-life problems, such as navigation.
- Produce a report on astronomy that will enhance others' knowledge of the field.

2.) Analyze the processes of scientific investigation and research.

- Evaluate how astronomers conduct science with astronomical observations to contextualize current-day research.
- Assess the strengths and weaknesses of astronomical observations to gain an understanding of the scientific method.
- Perform observations of planets and stars to gain a sense of how real-life astronomers perform their work.
- Compare older scientific findings with newer understandings to develop a sense of the progress of the field of astronomy and scientific discovery.

3.) Apply Indigenous knowledge to contemporary science.

- Identify Indigenous constellations in the sky to gain cultural understanding.
- Research folklore associated with Indigenous constellations to learn about the importance of folklore in Indigenous life.
- Compare Indigenous astronomical knowledge to other types of astronomical knowledge to merge different types of scientific understanding.
- Devise frameworks for Indigenous co-operation in research that promotes inclusivity in science.

4.) Use word processing software to write technical reports.

- Identify the preferred audience for technical reports to tailor writing.
- Write reports using common grammar and language to enhance the readers' understanding.
- Use Institute of Electrical and Electronics Engineers (IEEE) formatting for references in accordance with standards in the field.
- Compose reports that show how a set of arguments leads to a conclusion, in accordance with standards in the field.

Evaluation / Earning Credit

The following list provides evidence of this course's learning achievements and the outcomes they validate:

Presentation(s) (30%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, EES 1, EES 2, EES 7, EES 8, EES 10

Assignment(s) (40%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, EES 1, EES 2, EES 7, EES 8, EES 10

Quiz(zes) (30%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, EES 1, EES 2, EES 7, EES 8, EES 10

Learning Resources

Required Textbook:

None.

Recommended Resources:

Royal Astronomical Society of Canada. (2020, May 9). *Tips & Expectations for Visual Observers*. Royal Astronomical Society of Canada. <https://www.rasc.ca/observing/tips>.

Sky&Telescope Magazine. (2020). Celestial Objects to Observe. *Sky&Telescope Magazine*. <https://skyandtelescope.org/celestial-objects-observe/>.

Sky&Telescope Magazine. (2020). This Week's Sky At A Glance. *Sky&Telescope Magazine*. <https://skyandtelescope.org/observing/sky-at-a-glance/>.

Hardware and Software:

Please follow the Algonquin College BYOD requirements: <https://www7.algonquincollege.com/byod/>.

Stellarium software is recommended to help with night sky observations. You can download it free here: <https://stellarium.org/>.

Learning Activities

Presentations
Assignments
Quizzes
Slideshows
Field work
Videos

Prior Learning Assessment and Recognition

Students who wish to apply for Prior Learning Assessment and Recognition (PLAR) need to demonstrate competency at a post-secondary level in all outlined course learning requirements. Evidence of learning achievement for PLAR candidates includes:

- Project/Assignment

Course Related Information

- No late assignments will be accepted unless a student can demonstrate a true personal or professional emergency.
- All quizzes will be completed using a Learning Management System (Brightspace)
- All written assignments should be submitted in .doc, .docx or .pdf formats.
- All presentations should be submitted using an online video platform, such as YouTube or Vimeo. Please make sure the video is accessible for evaluation, such as providing a private link to the professor.

College Related Information

Email

Algonquin College provides all full-time students with an e-mail account. This is the address that will be used when the College, your professors, or your fellow students communicate important information about your program or course events. It is your responsibility to ensure that you know how to send and receive e-mail using your Algonquin account and to check it regularly.

Students with Disabilities

If you are a student with a disability, you are strongly encouraged to make an appointment at the Centre for Accessible Learning to identify your needs. Ideally, this should be done within the first month of your program, so that a Letter of Accommodation (LOA) can be provided to your professors. If you are a returning student, please ensure that professors are given a copy of your LOA each semester.

Retroactive Accommodations

Students are expected to meet evaluation and completion deadlines as stated in course outline and course section information documents. In circumstances where evaluation and/or completion deadlines are missed or student performance has been affected by a temporary or permanent disability (including mental health), interim or retroactive accommodations may be considered. In such instances, please consult your course faculty member. For other situations where deferral of evaluations may be warranted, please refer to college policy AA21.

Academic Integrity & Plagiarism

Algonquin College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process. Academic work submitted by a student is evaluated on the assumption that the work presented by the student is his or her own, unless designated otherwise. The College's Policies AA18: Academic Dishonesty and Discipline and AA20: Plagiarism seeks to ensure that all students understand their rights and responsibilities in upholding the values of academic integrity.

In some courses, online proctoring may be used. Additional information can be found at

<https://www.algonquincollege.com/student-support-services/student-learning-kit/preparing-to-learn-online/>

Student Course Feedback

It is Algonquin College's policy to give students the opportunity to share their course experience by completing a student course feedback survey for each course they take. For further details consult Algonquin College Policy AA25: Student Course Feedback

Use of Mobile Devices in Class

With the proliferation of small, personal mobile devices used for communications and data storage, Algonquin College believes there is a need to address their use during classes and examinations. During classes, the use of such devices is disruptive and disrespectful to others. During examinations, the use of such devices may facilitate cheating. For further details consult Algonquin College Policy AA32: Use of Mobile Devices in Class

Technology Requirements – New for 2020-21

As Algonquin College continues to respond to public health guidelines, many courses will be offered through remote delivery. As such, students will be required to have access to a computer and to the internet. There may also be additional technology-related resources required to participate in a course that are not included in the course materials fee, such as headphones, webcams, specialized software, etc. Details on these requirements can be found in the Course Section Information of the course outline for each course.

Transfer of Credit

It is the student's responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.

Note: *It is the student's responsibility to refer to the Algonquin College Policies website for the most current information at <http://www.algonquincollege.com/policies/>*