Alexander College
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CURRICULUM GUIDE: OFFICIAL COURSE OUTLINE

Course Code	PHYS 191	Course Title	Introduction to Astronomy			
Credit Value	3	Department	Mathematics and Science			
No. of weeks	14	Hrs. per week	*Lecture*	*Tutorial*	*Laboratory*	*Total*
			3	0	0	3
Course Description	This is a general astronomy course designed to acquaint the student with the heavenly bodies and their seasonal migration throughout the sky. Emphasis will be placed on the methods and tools used in exploring the solar system and the local galaxy. Theories about the rest of the universe will be included. Students will spend time observing the night sky and using computer simulations as an important part of the course. (Not for credit for Associate of Science degree)					
Prerequisite(s)	ENGL 099, Math 12 (C) or MATH 100					

Initial Articulation Targets	*UBC*	*SFU*	*UVic*	*UNBC*	*TRU*
	ASTR 1st (3)	PHYS 190 (3) Q/B-Sci	ASTR 1XX (1.5)		ASTR 1XXX (3)
	For updated information on the transferability of this course, please consult the BC Transfer Guide, www.bctransferguide.ca				

Learning Outcomes

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

- Explain the interplay of observation, theory, and hypothesis in the development of astronomical knowledge.
- Identify major features of the night sky.
- Describe the motions of objects in the solar system and explain how these motions cause such effects as day and night, seasons, phases of the moon, and the nightly motions of stars and planets across the sky.
- Use concepts that include the general nature of light, gravity, and nuclear reactions to explain processes relevant to astronomy.
- Compare and contrast the general nature of astronomical objects.
- Explain modern cosmological theories.

Content

Core topics – all of the following will be covered:

- Celestial Sphere and Constellations
- Seasons and Precession
- Interstellar Distances
- Telescopes
- Sun
- Stellar Evolution
- The Milky Way Galaxy

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- Galaxy Evolution
- Dark Matter and Supermassive Black Holes
- Cosmology

Additional topics may also be covered, at the discretion of the instructor.
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<tr><td>Methods of Instruction</td><td colspan="3">Lectures, assignments, projects, observing the sky at night, computer simulations, assigned reading, quizzes and exams.</td></tr>
<tr><td>Required Textbook(s)</td><td colspan="3">The following textbook(s) is/are required, or approved equivalent(s).

Franknoi, Andrew, et al Astronomy. Houston, TX: OpenStax College, 2022.</td></tr>
<tr><td>Required Equipment and Technology</td><td colspan="3">Students are required to have a computer with internet access.
The following resources are provided by the College:
• Office 365
• Student email</td></tr>
<tr><td>Homework Hours</td><td colspan="3">At minimum, students can expect one hour of homework for every hour of instructional time.</td></tr>
<tr><td rowspan="2">Evaluation</td><td>Component</td><td colspan="2">% Value</td></tr>
<tr><td>Assignments, quizzes, projects
Midterms (2)
Final examination</td><td colspan="2">20-30%
20-40%
30-35%</td></tr>
<tr><td>Completion Requirements</td><td colspan="3">The minimum grade to pass this course is D (50%). Unless otherwise stated, a minimum grade of C- (55%) is required for this course to fulfil a prerequisite.</td></tr>
<tr><td>Course Designer(s)</td><td>Kelly Cheung, Ph.D. Department Head, Physics Department, Alexander College</td><td>Consultant(s), if applicable</td><td>Howard Trottier, Physics Department, Simon Fraser University</td></tr>
<tr><td>Dean’s Approval</td><td>Barbara Moon, Ph.D.
Professor Emeritus, Department of Biology, University of the Fraser Valley</td><td>Dean’s Approval Date</td><td>January 1, 2015</td></tr>
<tr><td>Curriculum Committee Approval Date</td><td>January 1, 2015</td><td>First Term Offered</td><td>Spring 2015</td></tr>
<tr><td>Last Review Date</td><td>September 28, 2022</td><td>Next Review Date</td><td>September 28, 2027</td></tr>
<tr><td>Revision History</td><td colspan="3">September 28, 2022-Minor edits by Kelly Cheung</td></tr>
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