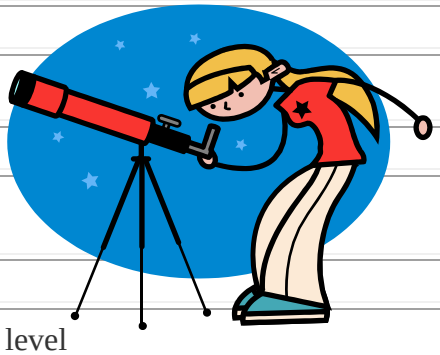
Introduction to Stellar Astronomy (PHYS 2151) Winter 2022

This course is designed to be offered fully online. The are no scheduled classes. Students will need to have access to a networked computer. Please see the minimum computer requirements.

Professor	Svetlana Barkanova
Email Address	sbarkanova@grenfell.mun.ca
Office Location	n/a
Office Hours	By email, anytime
Office Phone	n/a
Prerequisites	6 credit hours in Mathematics at the first year level
Grading	Assignments: 40% Course Project: 20% Final Exam: 40%
Text	"Astronomy Today" eText by Chaisson and McMillan, Prentice - Hall, 9th ed., with "Mastering Astronomy" access, from www.pearson.com/mastering MA Course ID: barkanova48551 MA Course Name: PHYS 2151 Winter 2022



Stellar Astronomy and Astrophysics is atomic structure and spectra. The sun: radiation, energetics, magnetic field. Stars: distance, velocity, size, atmospheres, interiors. Variable stars, multiple stars, clusters and stellar associations. Stellar evolution, interstellar matter, structure of the Milky Way Galaxy. Exterior galaxies, quasi-stellar objects, pulsars. Cosmology.

The major learning goals include solid understanding of physical principles governing our universe and developing a critical and quantitative intellectual style. The students are expected to develop an appreciation for the pleasure of intellectual investigation and the ability to search for, verify, interpret, and communicate scientific information.

All members of the Memorial University of Newfoundland community, including students, faculty, and staff, shall treat others with respect and fairness, be responsible and honest, and uphold the highest standards of academic integrity. By submitting work for this course, the students state that all work is entirely their own and does not violate Memorial University's Academic Integrity policy.

If you have a disability or other condition that requires special arrangement or consideration, please feel free to discuss this with staff in the Learning Centre (Student Services), phone 637-6268, e-mail studentservices@grenfell.mun.ca - in a confidential setting. More information on the University's policy is available at http://www.grenfell.mun.ca/student-services/disability-services.

Course Schedule

Week	Dates	Module	Homework
Week 1	January 10 - 16	Study course outline on D2L. Register for Mastering Astronomy. Install planetarium software (Stellarium or similar). Form your group for Course Project.	HA#0 (no credit)
Week 2	January 17 - 23	Chapter 16 - The Sun: Our Parent Star. Chapter 17 - Measuring the Stars: Giants, Dwarfs and the Main Sequence.	HA#1
Week 3	January 24 – 30	Chapter 18 - The Interstellar Medium: Gas and Dust Among the Stars. Chapter 19 - Star Formation: A Traumatic Birth.	HA#2
Week 4	Jan. 31 – Feb. 6	Chapter 20 - Star Evolution: The Life of a Star.	HA#3
Week 5	February 7 - 13	Chapter 21 - Stellar Explosions: Novae, Supernovae, and the Formation of the Elements. Chapter 22 - Neutron Stars and Black Holes: Strange States of Matter.	HA#4
Week 6	February 14 - 20	Chapter 23 - The Milky Way Galaxy: A Spiral in Space.	HA#5
Week 7	February 21 – 27	Reading Week	Course Project
Week 8	Feb. 28 - March 6	Chapter 24 - Galaxies: Building Blocks of the Universe.	HA#6
Week 9	March 7 - 13	Chapter 25 - Galaxies and Dark Matter: The Large-Scale Structure of the Cosmos.	HA#7
Week 10	March 14 - 20	Chapter 26 - Cosmology: The Big Bang and the Fate of the Universe.	HA#8
Week 11	March 21 - 27	Chapter 27 - The Early Universe: Toward the Beginning of Time.	HA#9
Week 12	March 28 – Apr.3	Chapter 28 - Life in the Universe: Are We Alone?	HA#10
Week 13	April 4 - 10	Review and Exam Preparation	
	TBA	Final Exam	

To register for Mastering Astronomy homework platform and eBook:

1. Go to MyLab & Mastering | Pearson (pearsonmylabandmastering.com)
2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor's course ID and click Continue.
5. Enter your existing Pearson account username and password to Sign In.
You have an account if you have ever used a MyLab or Mastering product.
If you don't have an account, select Create and complete the required fields.
6. Select an access option. Enter the access code that came with your textbook or that you purchased separately from the bookstore. » If available for your course, • Buy access using a credit card or PayPal. • Get temporary access.
7. From the You're Done! page, select Go To My Courses.
8. On the My Courses page, select the course name to start your work.

"Mastering Astronomy" provides students with two learning systems in one: the richest self-study media available and the ability to participate in online assignments created by their instructors.

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"My exam scores were significantly higher after using MasteringAstronomy and I understand the material more fully." *Heather Barnhart*

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"I like how the immediate feedback in MasteringAstronomy actually tells me why my answer is wrong. This makes learning and understanding the right answers much easier." *Reece Cook*

"I like the hints and interactivity MasteringAstronomy offers – it's like having a second teacher." *Bo Vernon*

From www.masteringastronomy.com

Some useful links:

www.skymaps.com - Sky maps (star charts) for sky-watchers, educators and publishers. The Evening Sky Map (PDF) for each month, free.

stellarium.org - A planetarium software that shows exactly what you see when you look up at the stars. Free and easy to use.