

PHYSICS
INFO SESSION

- 
- OVERVIEW OF THE DEPARTMENT
 - PROGRAM OVERVIEW
 - CO-OP PROGRAM AND C-EDGE
 - AWARDS and RESEARCH OPPORTUNITIES
 - CAREER OPPORTUNITIES
 - USEFUL LINKS and RESOURCES
 - DIVERSITY and INCLUSION
 - BOOK AN APPOINTMENT WITH ACADEMIC ADVISOR
 - Q&A



PEOPLE

Dr. Laszlo Kalman

Undergraduate and Co-op Program Director

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Nata Zazubovits (M.Sc.)

BSc Coordinator and Academic Advisor

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physics-advising@concordia.ca

- [BOOK a ZOOM meeting](#)
- [BOOK an IN-PERSON meeting](#)



PEOPLE

Dr. Valter Zazubovits

Department Chair

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Patrick Doane

Teaching Lab Supervisor

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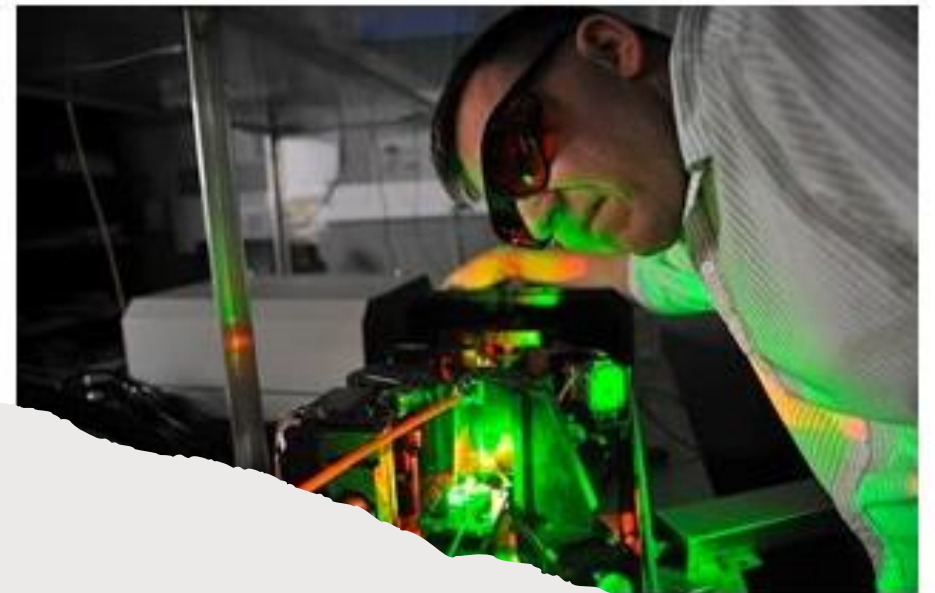
In-person (on campus): Tuesday-Friday

CAMPUS



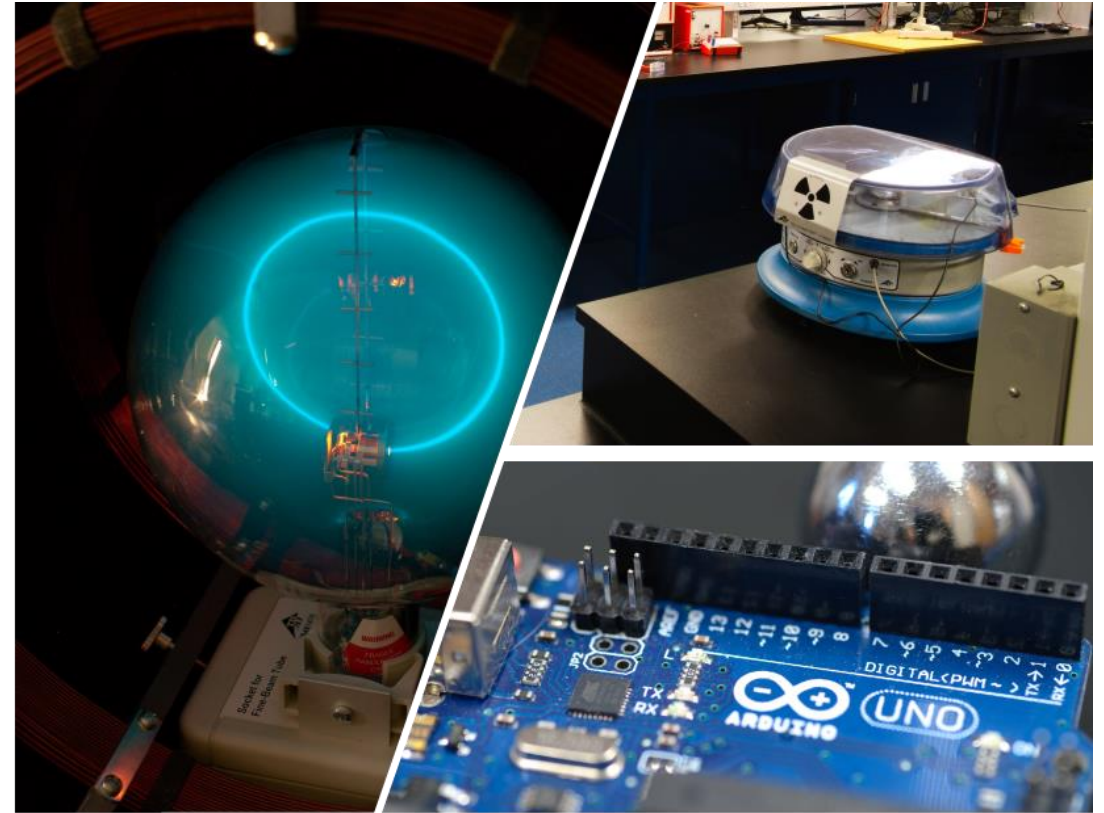
[Shuttle](#) schedule

[link](#)



[link](#)

DEPARTMENT OF PHYSICS SPACES



+ Kitchen

UGRD Student study room

UGRD Student social room (2d floor)

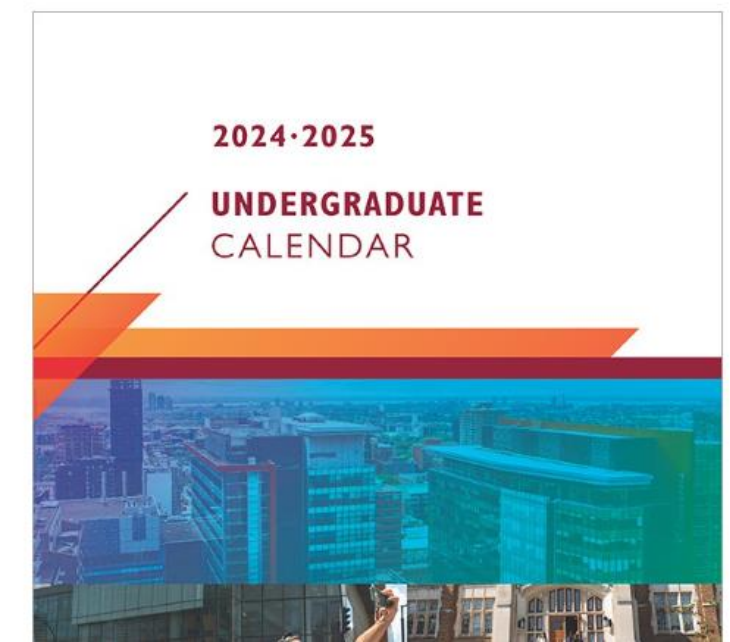
DEPARTMENT OF PHYSICS SPACES

[link](#)

PROGRAMS

- [MAJOR IN PHYSICS](#) (45 credits + major in MATH possible)
- [SPECIALIZATION IN PHYSICS](#) (66 credits + minor in Comp Sci)
Quantum, nano, also pathway to astrophysics, particle physics
- [SPECIALIZATION IN BIOPHYSICS](#) (industry, multidisciplinary or interdisciplinary field (med phys, renewable energy) understanding complex bio systems from the phys point of view. Medical discoveries.

2024-2025 Undergraduate Calendar



- View the 2024-2025 Undergraduate Calendar
- Quick links to courses
- Download the 2024-2025 Undergraduate Calendar (PDF, 10MB)

UNDERGRADUATE CALENDAR

Use the internal Concordia
SEARCH option to search for the
Undergraduate Calendar

Specialization, Opt A (66 credits) FALL ENTRY					
	FALL	PRE-RECS	CO-RECS		WINTER
YEAR 1	MAST 218 Multivariable Calculus I (3.00)	MATH 204 MATH 205 PHYS 204-206, PHYS 224-226; or equivalent		YEAR 1	MAST 219 Multivariable Calculus II (3.00)
	PHYS 230 Experimental Physics I (3.00)				PHYS 236 Numerical Methods in Physics with Python (3.00)
	PHYS 232 Methods of Theoretical Physics I (3.00)		MAST 218		PHYS 245 Classical Mechanics (3.00)
	PHYS 252 Optics (3.00)	PHYS 206			PHYS 330 Experimental Physics II (3.00)
	Elective (3.00)				Elective (3.00)
	PHYS 253 Electricity and Magnetism I (3.00)	PHYS 205	MAST 218	YEAR 2	PHYS 335 Methods of Theoretical Physics II (3.00)
	PHYS 334 Thermodynamics (3.00) L PHYS 393	PHYS 204, MAST 218 PHYS 232, PHYS 245	MAST 219		PHYS 354 Electricity and Magnetism II (3.00)
	PHYS 345 Advanced Classical Mechanics (3.00)	MAST 219			PHYS 367 Modern Physics and Relativity (3.00)
	PHYS 355 Electronics (3.00)	PHYS 205			Elective (3.00)
	Elective (3.00)				Elective (3.00)
	PHYS 497 Specialization Research Project (3.00) can be taken during Fall, Winter or Summer terms				
	PHYS 377 Quantum Mechanics I (3.00)	PHYS 206		YEAR 3	PHYS 435 Statistical Physics (3.00)
	PHYS 399 Condensed Matter Physics I (3.00)	PHYS 377			PHYS 468 Condensed Matter Physics II (3.00)
	Specialization Research Project (3.00)				PHYS 478 Quantum Mechanics II (3.00)
	One course from List 1 (see below) OR Elective (3.00)				One course from List 1 (see below) (if not taken during F
	Elective (3.00)				Elective (3.00)
	PHYS 496 is a two-term course that is to be taken in Fall/Winter.				
	(total)				
	by	PRE-RECS	CO-RECS		List 1 for WINTER only
	Numerical Methods in Physics with Python (3.00)	PHYS 236, PHYS 335,			PHYS 385 Astrophysics
	Integrative Human Systems Physiology (3.00)	PHYS 377			PHYS 445 Principles of Medical Imaging (3.00)
		45 credits			PHYS 498 Advanced Topics in Physics (3.00)
	CORE PHYSICS (42)				All courses except MAST 218. MAST 219, PHYS 230, PHYS 330 offered once per year
	6 credits				66 BSc Specialization in Physics
	Multivariable Calculus I (3.00)				42 Core Program
	Multivariable Calculus II (3.00)				21 PHYS 330, 345, 355, 459, 468, 478, 497
	36 credits:				13 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498
	Experimental Physics I (3.00)				Total: 90 credits program = 66 + 24
	Methods of Theoretical Physics I (3.00)				66 Spec in Physics
	Numerical Methods in Physics with Python (3.00)				24 = electives outside of Physics (6 outside of Sciences)
	Classical Mechanics (3.00)				Sciences:
	Electricity and Magnetism I (3.00)				Department of Biology,
	Electronics (3.00)				Department of Chemistry and Biochemistry
	Methods of Theoretical Physics II (3.00)				Department of Health, Kinesiology, and Applied Physiology
	Electricity and Magnetism II (3.00)				Department of Mathematics and Statistics
	Modern Physics and Relativity (3.00)				Department of Physics
	Quantum Mechanics I (3.00)				

Specialization, Opt A (66 credits) FALL ENTRY					
	FALL	PRE-RECS	CO-RECS		WINTER
YEAR 1	MAST 218 Multivariable Calculus I (3.00)	MATH 204 MATH 205 PHYS 204-206, PHYS 224-226; or equivalent		YEAR 1	MAST 219 Multivariable Calculus II (3.00)
	PHYS 230 Experimental Physics I (3.00)				PHYS 236 Numerical Methods in Physics with Python (3.00)
	PHYS 232 Methods of Theoretical Physics I (3.00)		MAST 218		PHYS 245 Classical Mechanics (3.00)
	PHYS 252 Optics (3.00)	PHYS 206			PHYS 330 Experimental Physics II (3.00)
	Elective (3.00)				Elective (3.00)
	PHYS 253 Electricity and Magnetism I (3.00)	PHYS 205	MAST 218	YEAR 2	PHYS 335 Methods of Theoretical Physics II (3.00)
	PHYS 334 Thermodynamics (3.00) L PHYS 393	PHYS 204, MAST 218 PHYS 232, PHYS 245	MAST 219		PHYS 354 Electricity and Magnetism II (3.00)
	PHYS 345 Advanced Classical Mechanics (3.00)	MAST 219			PHYS 367 Modern Physics and Relativity (3.00)
	PHYS 355 Electronics (3.00)	PHYS 205			Elective (3.00)
	Elective (3.00)				Elective (3.00)
	PHYS 497 Specialization Research Project (3.00) can be taken during Fall, Winter or Summer terms				
	PHYS 377 Quantum Mechanics I (3.00)	PHYS 206		YEAR 3	PHYS 435 Statistical Physics (3.00)
	PHYS 399 Condensed Matter Physics I (3.00)	PHYS 377			PHYS 468 Condensed Matter Physics II (3.00)
	Specialization Research Project (3.00)				PHYS 478 Quantum Mechanics II (3.00)
	One course from List 1 (see below) OR Elective (3.00)				One course from List 1 (see below) (if not taken during F
	Elective (3.00)				Elective (3.00)
	PHYS 496 is a two-term course that is to be taken in Fall/Winter.				
	(total)				
	by	PRE-RECS	CO-RECS		List 1 for WINTER only
	Numerical Methods in Physics with Python (3.00)	PHYS 236, PHYS 335,			PHYS 385 Astrophysics
	Integrative Human Systems Physiology (3.00)	PHYS 377			PHYS 445 Principles of Medical Imaging (3.00)
		45 credits			PHYS 498 Advanced Topics in Physics (3.00)
	CORE PHYSICS (42)				All courses except MAST 218. MAST 219, PHYS 230, PHYS 330 offered once per year
	6 credits				66 BSc Specialization in Physics
	Multivariable Calculus I (3.00)				42 Core Program
	Multivariable Calculus II (3.00)				21 PHYS 330, 345, 355, 459, 468, 478, 497
	36 credits:				13 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498
	Experimental Physics I (3.00)				Total: 90 credits program = 66 + 24
	Methods of Theoretical Physics I (3.00)				66 Spec in Physics
	Numerical Methods in Physics with Python (3.00)				24 = electives outside of Physics (6 outside of Sciences)
	Classical Mechanics (3.00)				Sciences:
	Electricity and Magnetism I (3.00)				Department of Biology,
	Electronics (3.00)				Department of Chemistry and Biochemistry
	Methods of Theoretical Physics II (3.00)				Department of Health, Kinesiology, and Applied Physiology
	Electricity and Magnetism II (3.00)				Department of Mathematics and Statistics
	Modern Physics and Relativity (3.00)				Department of Physics
	Quantum Mechanics I (3.00)				

MAJOR COURSE LOAD/ COURSE SEQUENCE

MAJOR (42+3 credits) FALL ENTRY					
YEAR 1	FALL	PRE-RECS	CO-RECS	YEAR 1	WINTER
	MAST 218 Multivariable Calculus I (3.00) PHYS 230 Experimental Physics I (3.00) PHYS 252 Optics (3.00) Elective (3:00) Elective (3:00)	MATH 204 MATH 205 PHYS 204-206, PHYS 224-226; or equivalent PHYS 206			MAST 219 Multivariable Calculus II (3.00) PHYS 236 Numerical Methods in Physics with Python (3.00) PHYS 245 Classical Mechanics (3.00) Elective (3:00) Elective (3:00) <i>PHYS 230 (3.00) can be taken during Fall, Winter or Summer terms</i>
YEAR 2	PHYS 232 Methods of Theoretical Physics I (3.00) PHYS 253 Electricity and Magnetism I (3.00) PHYS 334 Thermodynamics (3.00) L PHYS 393 Elective (3:00) Elective (3:00)	PHYS 205 PHYS 204, MAST 218	MAST 218 MAST 218 MAST 219		PHYS 354 Electricity and Magnetism II (3.00) PHYS 367 Modern Physics and Relativity (3.00) Elective (3:00) Elective (3:00) Elective (3:00) <i>PHYS 230 (3.00) can be taken during Fall, Winter or Summer terms</i>
YEAR 3	PHYS 377 Quantum Mechanics I (3.00) MAJOR 3 credit of PHYS, see recommendation (3:00) Elective (3:00) Elective (3:00) Elective (3:00)	PHYS 206			PHYS 335 Methods of Theoretical Physics II (3.00) PHYS 435 Statistical Physics (3.00) Elective (3:00) Elective (3:00) Elective (3:00)
YEAR 4	PHYS electives for FALL: Introduction to Astronomy (3.00) Experimental Physics II (3.00) Advanced Classical Mechanics (3.00) Elective (3.00) Numerical Methods in Physics with Python (3.00) Integrative Human Systems Physiology (3.00) Condensed Matter Physics I (3.00)	PRE-RECS cannot go towards concentration PHYS 230 PHYS 232, PHYS 245, MAST 219 PHYS 205 PHYS 236, PHYS 335, PHYS 377 PHYS 377	CO-RECS		Recommended PHYS electives for WINTER: PHYS 260 Introductory Biophysics (3.00) PHYS 330 Experimental Physics II (3.00) PHYS 385 Astrophysics PHYS 445 Principles of Medical Imaging (3.00) PHYS 460 Chemical Aspects of Biophysics (3:0) PHYS 468 Condensed Matter and Nanophysics PHYS 478 Quantum Mechanics II (3.00) PHYS 498 Advanced Topics in Physics (3.00)
YEAR 5	CORE PHYSICS (42) 6 credits Multivariable Calculus I (3.00) Multivariable Calculus II (3.00) 36 credits: Physics I (3.00) Theoretical Physics I (3.00) Numerical Methods in Physics with Python (3.00) Optics (3.00) Electricity and Magnetism I (3.00)				All courses except MAST 218, MAST 219, PHYS 230, PHYS 330 and offered once per year 45 BSc Major in Physics 42 Core Program 3 Chosen from PHYS electives Total: 90 credits program = 45 of BSc Major + (24 + 21) of Electives 24 = Electives outside of Physics, including 6 outside of Sciences 21 = Electives, can be Physics (if you are taking a lot of Physics electives consider switching to Specialization) Sciences:

66 BSc Specialization in Physics

42 Core Program

21 PHYS 330, 345, 355, 459, 468, 478, 497

3 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498

Total: 90 credits program = **66 + 24**

66 Spec in Physics

24 = electives outside of Physics (**6** outside of **Sciences**)

Sciences:

Department of Biology,

Department of Chemistry and Biochemistry

Department of Health, Kinesiology, and Applied Physiology

Department of Mathematics and Statistics

Department of Physics

Department of Psychology

Science College

All courses except MAST 218, MAST 219, PHYS 230, PHYS 330 and PHYS 497 are offered once per year

CORE PHYSICS (42)

6 credits

MAST 218 Multivariable Calculus I (3.00)

MAST 219 Multivariable Calculus II (3.00)

36 credits:

PHYS 230 Experimental Physics I (3.00)

PHYS 232 Methods of Theoretical Physics I (3.00)

PHYS 236 Numerical Methods in Physics with Python (3.00)

PHYS 245 Classical Mechanics (3.00)

PHYS 252 Optics (3.00)

PHYS 253 Electricity and Magnetism I (3.00)

PHYS 334 Thermodynamics (3.00)

PHYS 335 Methods of Theoretical Physics II (3.00)

PHYS 354 Electricity and Magnetism II (3.00)

PHYS 367 Modern Physics and Relativity (3.00)

PHYS 377 Quantum Mechanics I (3.00)

PHYS 435 Statistical Physics (3.00)

COURSE LOAD / COURSE SEQUENCE

ELECTIVES

- ELECTIVE COURSES
- eConcordia ELECTIVE COURSES

ing



COMM 315

Business Law and Ethics



COMM 316

Business Law and Ethics



COMP 218

Fundamentals of
Programming



ECON 201

Introduction to
Microeconomics



ECON 203

Introduction to
Macroeconomics



ECON 319

International Economic
Policy and Institutions



EDUC 270

Educational
Communication



EDUC 307

Integrating Digital
Technologies and Social
Media In Learning
Environments



ELEC 321

Introduction to
Semiconductor Materials
and Devices

ning and

SHOULD I TAKE 5, 4 OR 3
COURSES PER TERM?

SUGGESTED
COURSE
SEQUENCES LINK

The screenshot shows the website concordia.ca/artsci/physics/programs/undergraduate.html. The page title is "Department of Physics". The navigation menu includes "ABOUT THE DEPARTMENT", "PROGRAMS", "RESEARCH", "CURRENT STUDENTS", and "CONTACT". The breadcrumb trail is "Concordia University / Faculty of Arts and Science / Undergraduate / Department of Physics / Programs / Undergraduate". The main heading is "Undergraduate programs". The text below the heading says: "Interested in studying physics? Read the new book, "Physics for the Curious: Why Study Physics?" by Prof. Truong Vo-Van. of physicists including our own Prof. Truong Vo-Van." Below this are two dark grey boxes with white text: "Academic Advising, Forms, and Student Requests" and "What order do I take my classes in?". The section "Suggested Course Sequence for Fall Entry" is partially visible at the bottom, showing two options: "3 courses per term" and "4 courses per term". Red annotations include a circle around the URL, an arrow pointing to the "Undergraduate" link in the breadcrumb, a circle around the "Undergraduate" link, and a circle around the "4 courses per term" option.

concordia.ca/artsci/physics/programs/undergraduate.html

Department of Physics

ABOUT THE DEPARTMENT PROGRAMS RESEARCH CURRENT STUDENTS CONTACT

Concordia University / Faculty of Arts and Science / [Undergraduate](#) / Department of Physics / Programs / Undergraduate

Undergraduate programs

Interested in studying physics? Read the new book, "[Physics for the Curious: Why Study Physics?](#)" by Prof. Truong Vo-Van. of physicists including our own Prof. Truong Vo-Van.

Academic Advising, Forms, and Student Requests

What order do I take my classes in?

Suggested Course Sequence for Fall Entry

3 courses per term 
4 courses per term 

CONSIDERING GOING TO GRADUATE SCHOOL?

66 BSc Specialization in Physics

42 Core Program

21 PHYS 330, 345, 355, 459, 468, 478, 497

3 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498

Total: 90 credits program = **66 + 24**

66 Spec in Physics

24 = electives outside of Physics (**6** outside of **Sciences**)

★ **Keep your GPA up (Honours)**

ONE CAN DO RESEARCH
DURING THE FIRST
YEAR

PHYS 289

(HONOURS RESEARCH PROJECT)
IS EXACTLY FOR THAT

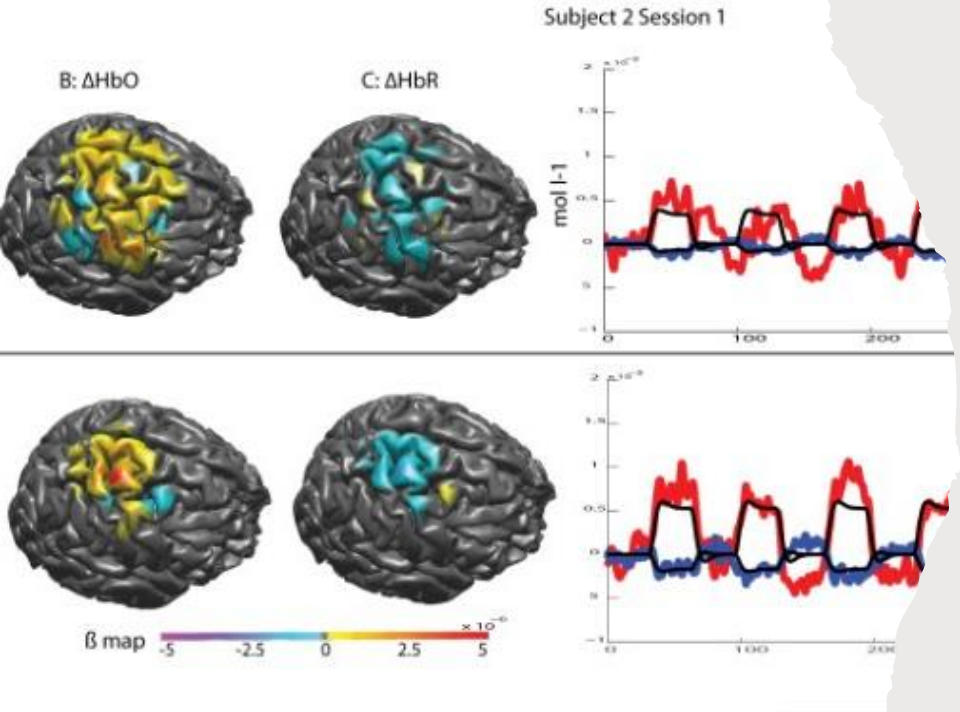
Coordinator/UPD Acceptance:

STUDENT INFORMATION (Checklist filled in by the Coordinator/Program Director)

- ☐ **GPA requirements met** (GPA $\geq$ 3.3)
- ☐ **GPA requirements not met** (2 references needed from faculty members other than the supervisor)
- ☐ **Not in honours program yet**, recommended to take the course (PHYS 289 only)

Name: _____ Signature: _____

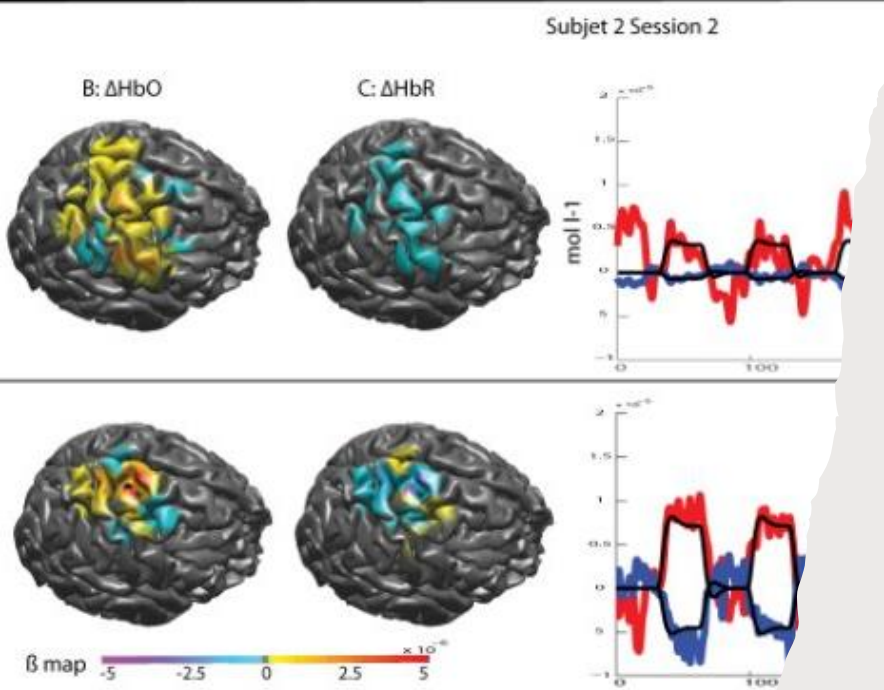
Date: _____



RESEARCH OPPORTUNITIES

[AWARDS](#) and more [AWARDS](#)

[SUMMER RESEARCH OPPORTUNITIES](#)



[RESEARCH OPPORTUNITIES](#)

[SCIENCE COLLEGE](#)



CO-OP PROGRAM AND C-EDGE

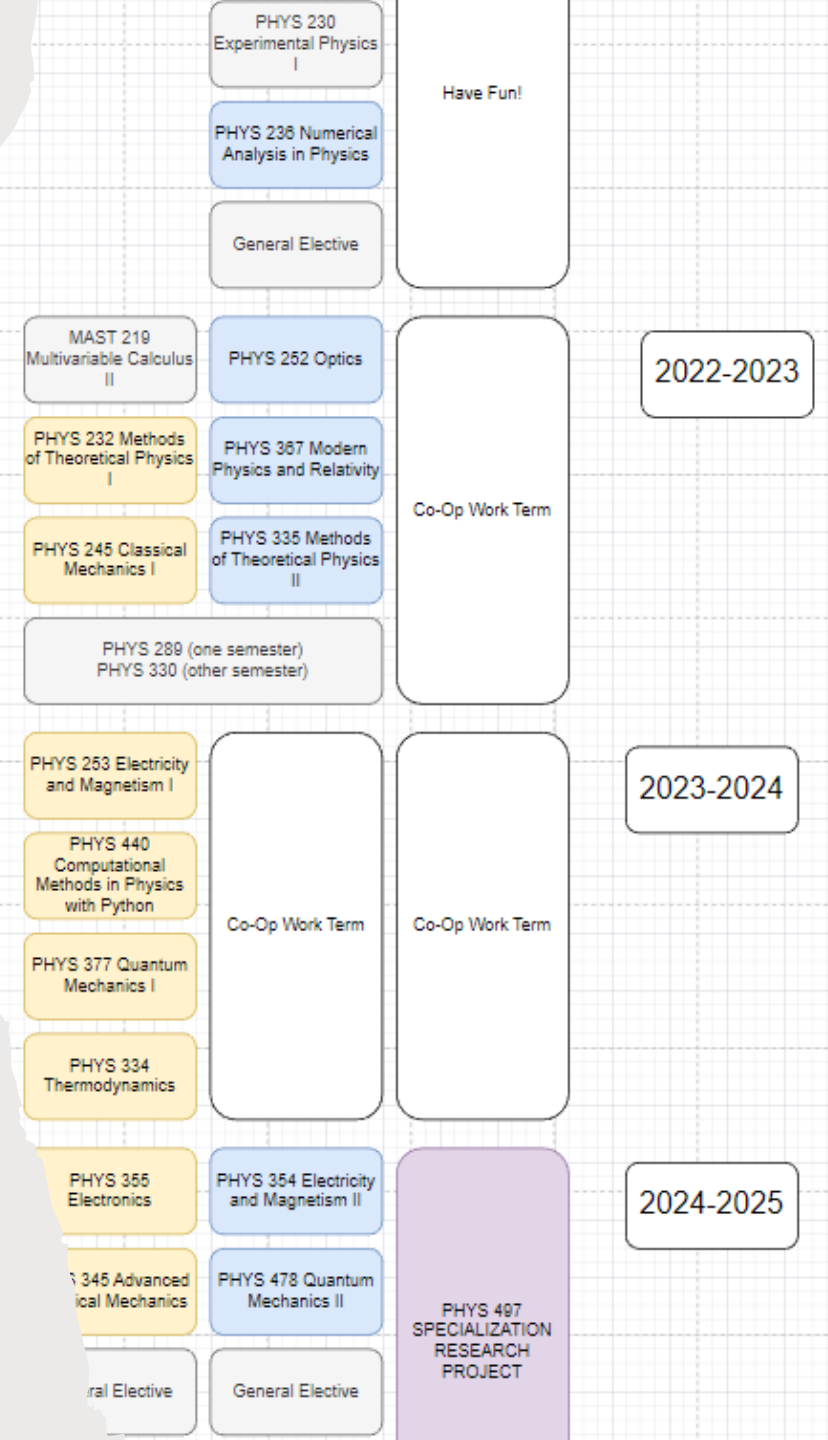
- Co-op program overview
- Co-op sequence
- A couple of examples
- C-Edge program overview

CO-OP PROGRAM

COMBINING STUDY WITH WORK EXPERIENCE

- Three paid work terms as part of your degree
- Training in CV writing and job application
- Must be a FULL-TIME student (>12 credits)
- GPA 2.8
- Contact Laszlo Kalman for details
- Requires detailed planning with Academic Advisor
- Visit [Institute for Co-operative Education](#)

CO-OP PROGRAM



CO-OP PROGRAM

Mariya Krasteva:

Co-op Internships:

McGill Space Institute

Presto Heinrich-Heine-Universität

European Space Agency

<https://nl.linkedin.com/in/mariya-krasteva>

NOW: CNES PhD Optics for Planetary Sciences



Anastasia Kolokotronis:

Coop Internships:

PERFORM Research Center,

Agilent Technologies (twice)

<https://ca.linkedin.com/in/anastasia-kolokotronis-649747a8>

NOW: Medical Physicist at Hôpital Maisonneuve-Rosemont



C - E D G E

ONE OR TWO TERMS OF WORK EXPERIENCE

- Less restrictive
- One or two work terms whenever, as long not the last term
- Training in CV writing and job application
- Contact Laszlo Kalman for details
- Visit [Institute for Co-operative Education](#)

COMMUNITY

- ADVISING
- Monthly Tea for women and LGBTQ+ community members
- Monthly UGRD meeting
- Monthly GOPHER (Physics Club)
- Mentorship (students mentoring students)
- Mentoring events (Medical Physics, Microsoft, Astrophysics and more)
- [SPACE Concordia](#)
- [CUBCAPS](#) (Physics Students [DISCORD](#) is a MUST!)

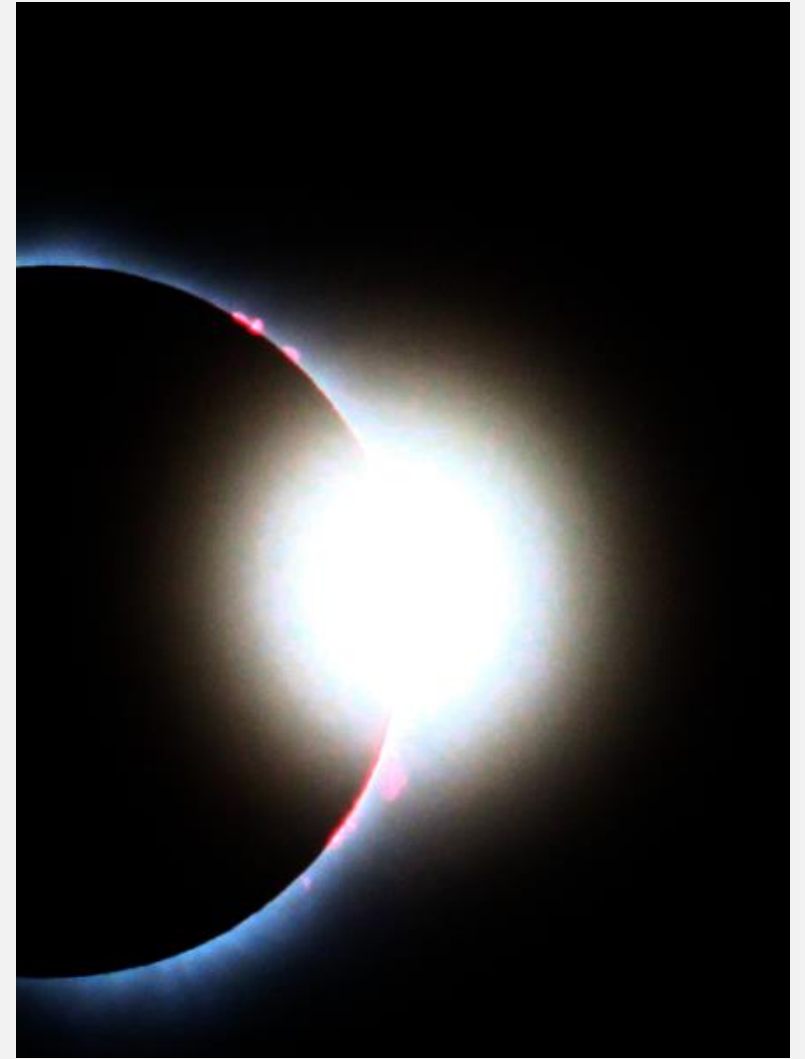


Photo taken by Professor Laszlo Kalman



CAREER OPPORTUNITIES

- **MUST WATCH:**

2019 Career Trajectories Keynote:
The Real Story About
Employment for Physics Graduates
- YouTube

CAREER OPPORTUNITIES (LINK)

- Simulations, predictions, creating models (Finances, Insurance companies)
- Working with big data.
- Astrophysics.
- Gaming industry
- Aerospace Flight simulators.
- Medical devices – creating, developing, consulting.
- High TECH – knowing the background of things and processes.
- Medical physics

image

Grafoid

Group NanoXplore

- Raymor

Medical/Healthcare

- Hexoskin
- Muse
- Verily

Optics and Photonics

- ASEA Brown Boveri (ABB)
- Avalon Holographics

- IBM

- Google

- Huawei Canada

- Microsoft

- Nuance Communications

- Optiwave Systems

- Ranovus

Telecommunication

- Bell Canada

- Ciena

- EXFO

- Keysight Technologies

- MPB Communications

Technology

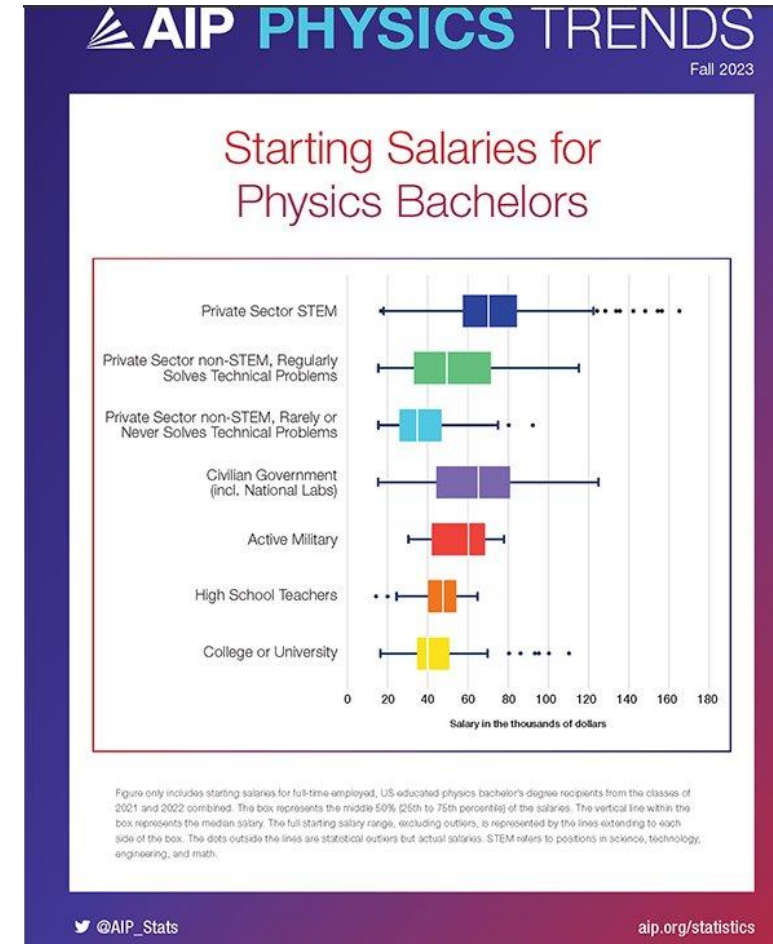
CAREER OPPORTUNITIES

During studies:

Tutoring Physics and Math

Working (paid or volunteer) on a project in a physics research lab

- [LINK](#)
- <https://www.aps.org/careers/physicists/data.cfm>
- <https://www.aip.org/statistics/multiple>



Careers Toolbox

Undergraduate Physics Students & their M

CAREER IN PHYSICS



CAREER TOOLBOX



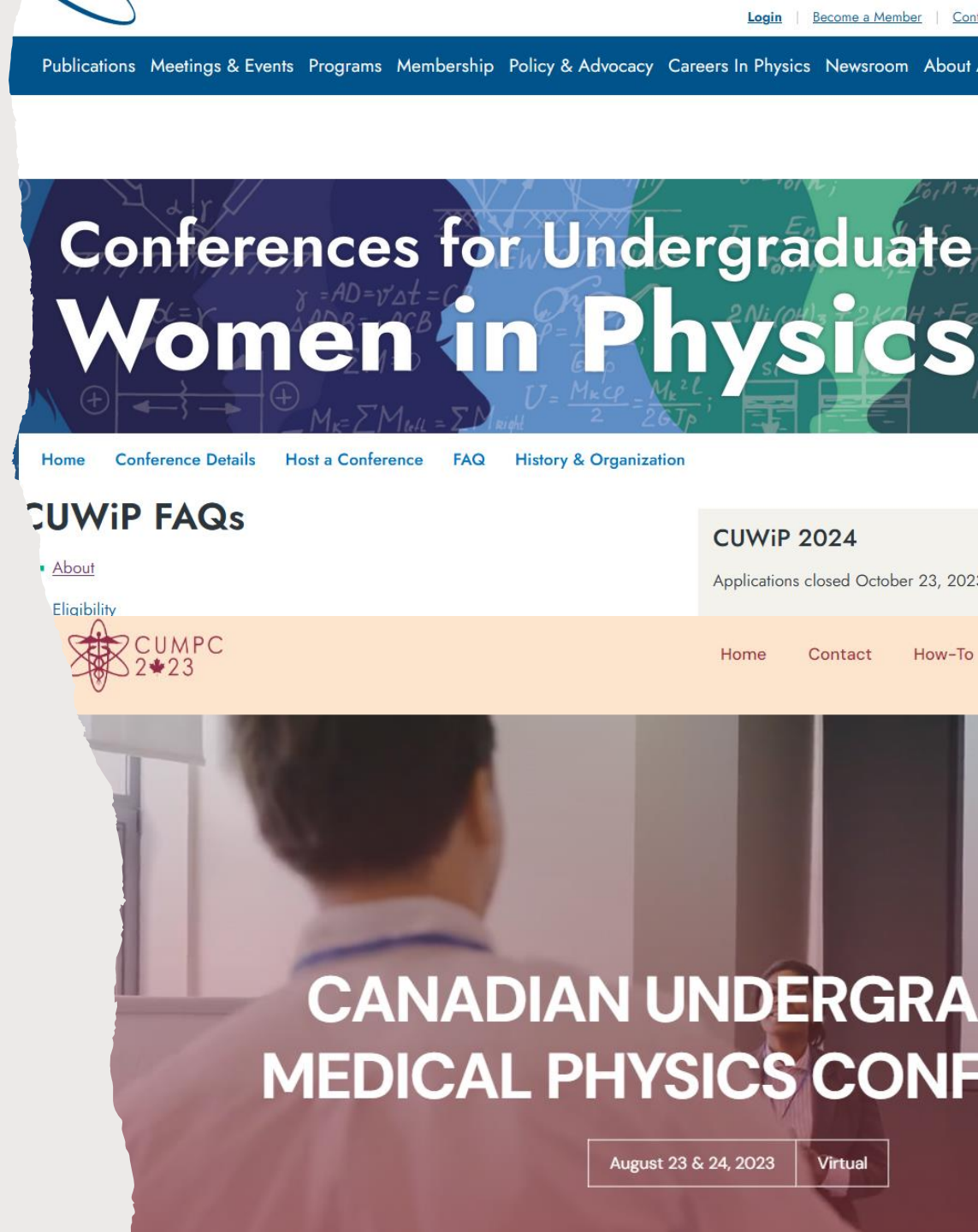
! Connect with a career counsellor

NETWORKING

CONFERENCES
ONLINE

(FREE OR NOT EXPENSIVE)

PARTICIPATE IN
ORGANIZING!



HAVE A BALANCED LIFE

[STUDENT SUCCESS CENTRE](#)

[STUDENT HUB](#)

[STUDENTS SERVICES](#)

[ZEN DENS](#)

[FUTURE BOUNDS](#)





USEFUL LINKS RESOURCES

- [Career Planning Services](#)
- [CU Off-Campus Housing](#)
- [Concordia Student Union / CUBCAPS](#)
- [Counselling & Psychological Services](#)
- [Women in Physics Canada](#)
- [Queer Concordia](#)
- [Aboriginal Student Resource Centre](#)
- [Multi-Faith and Spirituality Centre](#)
- [Access Centre for Students with Disabilities](#)
- [French courses](#)
- [Multi-faith and Spirituality Centre](#)
- [Navigator Program/Welcome Crew](#)
- [Health Services](#)
- [Recreation and Athletics](#)

DIVERSITY AND INCLUSION

Our statement:

“Our Department of Physics at Concordia University is a rapidly diversifying environment. We embrace this diversity by a firm commitment to inclusiveness. Everyone who dedicates their time and passion to physics belongs here and deserves to feel equally valued and respected no matter their gender, sexual orientation, ethnicity, religion, age, or disability”.

UNIVERSITÉ
Concordia
UNIVERSITY

arrefour

Y CU ACCOUNT

SERVICES & RESOURCES



physics advising|

unt

PRESENTATION
DOWNLOAD OR
BOOK AN
APPOINTMENT

THANK YOU

Q&A