Department of Physics Orientation
For new (incoming) students

Part One: Overview of the Department (Dr. Laszlo Kalman)

Break: Small Group Discussions

Part Two: Academic Advising (Matthew Storms)

Part Three: CUBCAPS Presentation (Valérie Courval, Julia Horeczky)
COVID-19 Course Delivery Format

Outline

• Latest COVID 19 information
• People to Know in the Department
• Some useful spaces in the Department
• Program Overview
• Summer Programs/Extracurricular Activities
• Resources for Students
• Policies and Regulations
This **Fall 2021** term will be a combination of in-person, online, remote, and blended learning at Concordia University.

**Fall 2021 PHYS courses**

<table>
<thead>
<tr>
<th>In-person</th>
<th>Online (eConcordia)</th>
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<tbody>
<tr>
<td>204/01 205/01 230 440</td>
<td>204 EC1 284 EC</td>
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<tr>
<td>206 232 330 459</td>
<td>204 EC2</td>
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<td>224 245 334 460</td>
<td>204 EC3</td>
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<tr>
<td>225 253 377 497</td>
<td>205 EC</td>
</tr>
<tr>
<td>226 289 389</td>
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</tbody>
</table>

& Weekly research colloquia

**Remote (Zoom)**

most 224/225/226
345
436
Physics Student Spaces

Where PHYS students can study or attend online classes

• Undergraduate Physics Study Room (SP 365.14)
  Capacity: 4, mask required at all times

• Data Analysis Study Room (SP 265.03)
  Capacity: 6, mask required at all times

• Department of Physics Conference Room (SP 365.11)
  Back-up space, also used for meetings by department
  Capacity: 10, mask required at all times
COVID-19 safety!

- Physical distancing is not required while wearing a procedural mask
- Procedural mask is required at all time in buildings (follow mask etiquette)
- Wash hands frequently / use hand sanitizers
- **Self-evaluation** must be completed every day before coming to campus
- If COVID symptoms are detected, one must stay at home (quarantine)
- For up-to-date information follow [EHS guidelines](#)
People to know in the Dept.

❖ Matthew Storms (BSc Coordinator and Advisor)
  o Office: SP-367.01 (matthew.storms@concordia.ca)
  o In-person (on campus): Monday-Thursday

❖ Marie-Anne Cheong Youne (Assistant to the Chair & GPA)
  o Office: SP-365.02 (marie-anne.cheongyoune@concordia.ca)
  o In-person (on campus): Monday, Wednesday, Friday

❖ Patrick Doane (Teaching Labs Coordinator)
  o Office: SP 265.01 (patrick.doane@concordia.ca)
  o In-person (on campus): Tuesday-Friday

❖ Casey Rae Nunn (Departmental Administrator)
  o Office: SP-365.02 (physics.da@concordia.ca)
  o Available online mostly, not usually a student contact point
People to know in the Dept.

- Dr. Valter Zazubovits (Department Chair, on short leave)
  - Office: SP-367.03 (valter.zazubovits@concordia.ca)

- Dr. Alexandre Champagne (Acting Chair & Grad Program Director)
  - Office: SP-367.03 until the Chair's return (or SP 553.09)
  - (A.Champagne@concordia.ca)

- Dr. Laszlo Kalman (Undergraduate and Co-op Program Director)
  - Office: SP-365.10 (laszlo.kalman@concordia.ca)

- Dr. Pablo Bianucci (Undergraduate Teaching Labs Director)
  - Office: SP-367.21 (pablo.bianucci@concordia.ca)
Department of Physics Spaces

Loyola Campus, Science Pavilion (SP)
West Broadway side
Department of Physics Spaces

SP Building 2\textsuperscript{nd} Floor (West Broadway side)

- Physics Teaching Labs
Department of Physics Spaces

SP Building 2nd Floor (West Broadway side)

- Physics Teaching Labs

- New! Data Analysis Study Room (SP 265.03)
  Capacity: 6, mask required at all times
Department of Physics Spaces

SP Building 3rd Floor

- Department of Physics Kitchen
- Undergraduate Physics Study Room
- Offices for most Physics Faculty and TAs
Department of Physics Spaces

Research Labs (see also Department of Physics → Research)

SP Basement, 3rd & 5th floor, PERFORM Centre
B.Sc. Degree Programs

Plan, execute, and analyze robust experiments

Physics & Biophysics
- Theory
- Computation
- Experiment

Master theoretical physics and biophysics

Year 1: Physics: An Introduction
Mechanics, Mathematical Theory, Electricity

Year 2: Principles of Natural Science
Quantum Theory, Thermodynamics, Magnetism

Year 3: Modern Directions in Physics
Transistors, MRIs, Lasers, Photosynthesis

Develop computational skills

Year 1: Numerical Analysis
Solve Equations/Problems with a Computer

Year 2: Interfacing Experiments
Remotely Control Instrumentation

Year 3: Computational Physics
Neural Networks, Data Analysis, Monte Carlo

Year 1: Principles of Experimental Physics
Error Analysis, Scientific Reporting

Year 2: Experimental Design
Automated Data Collection, Modelling Results

Year 3: Real Research
For-credit Research in a Lab in the Department!
B.Sc. Degree Programs
(90 credits total)

- Minor in Biophysics (24 credits)
- Major Physics (45 credits + electives/minor)
- Specialization in Physics/Biophysics (66 credits + electives/minor + 1 research project (497))
- Honours – Physics/Biophysics, GPA > 3.3 (72 credits + electives + up-to 3 research projects: 289, 389, 496)
- Co-op program (combine with any of the above)
- Extended Credit Program (+30 basic credits if coming from another province or from abroad)
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/term)
- GPA > 2.8
- Contact Dr. Laszlo Kalman for details
- Visit Institute for Co-operative Education
Getting in touch with fellow students
(both healthy and a professional skill to develop)

- Attend the (free) tutorials for your PHYS courses (see class schedule)
- Homeroom
- Student Success Centre
- Student groups
- Student Hub
- CUBCAPS
1st Year: Get involved

Popular Extra-Curricular Activities

- Build a network of peers by attending our course tutorials
- Space Concordia (Rockets, Microgravity Physics/Biophysics)
- CUBCAPS (Student Association—Activities and Network)
- **Future Bound** Career Development Seminars

Plan your Summer (The best time to get experience!)

- Work part-time: internships / research / volunteer

[http://www.concordia.ca/artsci/physics/current-students/summer-programs-extracurricular-activities.html](http://www.concordia.ca/artsci/physics/current-students/summer-programs-extracurricular-activities.html)

- Katalís (STEM Outreach)
Resources for Students

**Administrative:**
- Birks Student Centre
- International Student Office
- Student Accounts
- Office of Rights and Responsibilities

**Library and Bookstore:**
- Concordia Library
- Concordia Book Stop (Bookstore)

**Physical and mental health:**
- Health Services
- Access Centre for Students with Disabilities
- Counselling and Psychological Services
- Recreation and Athletics

**Student association:**
- CUBCAPS

**Additional resources:**
- Campus Security
- Career Planning Services
- CU Off-Campus Housing
- Dean of Students Office
- French courses
- LIVE Centre (volunteering)
- Multi-faith and Spirituality Centre
- Navigator Program/Welcome Crew
Academic Integrity

Concordia University places the principle of academic integrity, that is, honesty, responsibility and fairness in all aspects of academic life, as one of its highest values.

Academic Code of Conduct

The most common offense under the Academic Code of Conduct is plagiarism.

- if you complete a homework with someone else, write it down;
- if you use references, mention it in your work;
- be honest on exams,
- respect the intellectual property (IP) of faculty and fellow students.
Diversity and Inclusion: Building the Next Generation Department of Physics

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”.
Diversity and Inclusion

Groups and Resources

- 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
Academic Regulations

Where do I find information about all of the University’s administrative procedures?

• Consult the Undergraduate Calendar

• Be aware of important Undergraduate Academic Dates

• Talk to your Academic Advisor

Matthew Storms (Office: SP-367.01)  
BSc Program Coordinator & Student Advisor  
matthew.storms@concordia.ca
Studying and Homework Skills
Group Exercise (15 min)

(please engage, this is to get to know each other)

- On paper – small groups of 3 (or 2)
- If you need inspiration, you look at this link;
Academic Advising

Outline

• Follow your course sequence!
  • Design of the programs
  • What’s in a BSc degree
  • Plan ahead, avoid pitfalls
• Reach out early and often!
• Tools for success
## Course Sequences
### Major Physics

**YEAR 1: 21 PROGRAM CREDITS**

<table>
<thead>
<tr>
<th>FALL</th>
<th>WINTER</th>
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*Honours students can replace a general elective in Year 1 with PHYS 289 Honours Research Experience I.*
# Course Sequences

## Major Physics

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Design of the Programs

Don’t forget *electives*.

*Honours students can replace a general elective in Year 1 with PHYS 289 Honours Research Experience I.*
# Course Sequences

## Major Physics

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Don’t forget **electives**

Design of the Programs

Honours students can replace a general elective in Year 1 with PHYS 289 Honours Research Experience I.
# Course Sequences

## Major Physics

### YEAR 2: 15 PROGRAM CREDITS

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<th>Prerequisites:</th>
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<tbody>
<tr>
<td>PHYS 253</td>
<td>PHYS 252</td>
<td>PHYS 232</td>
</tr>
<tr>
<td>Electricity and Magnetism I</td>
<td>Optics</td>
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</tr>
<tr>
<td><strong>MAST 219</strong></td>
<td><strong>PHYS 334</strong></td>
<td></td>
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<tr>
<td>Thermodynamics</td>
<td>METHODS OF THEORETICAL PHYSICS II</td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 377</strong></td>
<td><strong>PHYS 367</strong></td>
<td></td>
</tr>
<tr>
<td>Quantum Mechanics I</td>
<td>Elective (3 credits)</td>
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</tr>
<tr>
<td></td>
<td><em>Suggested: PHYS 260 Introductory Biophysics</em></td>
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<tr>
<td>Elective (3 credits)</td>
<td></td>
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</tr>
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<td><em>Suggested: PHYS 355 Electronics</em></td>
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*Honours students can replace a general elective in Year 2 with PHYS 389 Honours Research Experience II.*

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**Design of the Programs**

Don’t forget *electives*

**Plan ahead**

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**Theory**

**Experiment**

**Computation**

**Physics & Biophysics**
# Course Sequences Spec. Physics

## YEAR 1: 24 PROGRAM CREDITS

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Honours students can replace a general elective in Year 1 with PHYS 289 Honours Research Experience I.
Course Sequences
Spec. Physics

One example of what can go wrong.

First Winter: I do not take PHYS 367 (sounds hard)
Second Winter: PHYS 367 was fun and totally manageable (oops)

PHYS 367 Modern Physics and Relativity
Winter Only.

Third Fall: I take PHYS 377 but not PHYS 459 (bad time to start following the sequence blindly)

PHYS 377 Quantum Mechanics
Fall only. Prereq: PHYS 367

Third Winter: I can no longer take PHYS 468
Fourth Fall: I finally take PHYS 459
Fourth Winter: I finish with PHYS 468

Graduation Delayed One Year : ( : ( : (
Specialization: Biophysics

YEAR 1: 24 PROGRAM CREDITS

<table>
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Honours students can replace a general elective in Year 1 with PHYS 289 Honours Research Experience I.
Freshman year (U0 - no CEGEP)

- Strongly suggest to follow sequence exactly
- Example: first Semester
  - **Must take:** PHYS 204 (Mechanics), MATH 203 (Cal I)
  - Otherwise: unable to take 12 required credits!
- Get in touch for full details!
Contact me (Matthew Storms) ext: 5167
Advising: MTWR 10AM-11AM, 3PM-4PM
Zoom ID: 911 741 4138; Password: Montreal

For help & For a leg up
- Course sequence?
- Transfer credits?
- Struggling?
- Personal difficulties?
- Graduate earlier.
- Research opportunities.
- Career questions.
When to reach out?

- Become Familiar with the Academic Calendar

Important Dates:

- **Sept 20: Add/Drop deadline**
  If you want to take a class, you must enroll before this date! Exceptions do occur, but there is no guarantee. If you drop a class after this date, it will appear as a DISC on your transcript and you will not be refunded. Exceptions are extremely rare and require extensive documentation.

- **November 8: DISC deadline**
  If you are enrolled in a class beyond this date, you unable to drop the class for a DISC. Exceptions do occur, but there is no guarantee.
When to reach out?

What does it mean?

▪ If you are on the waitlist for a class, you should follow the materials until Sept 20. If you are enrolled from the waitlist but have not been following the lectures, you will have a hard time catching up.

▪ If you are uncertain whether you should take a class, you should reach out for advising before Sept 20. You will not be able to take the class otherwise.
Tools for success

- **Attend the department-offered tutorials**
  Register for the tutorials.
  You do not have to attend every session.
  Tutorials are supplementary to the course:
  An opportunity to ask questions.
  A chance to interact with your classmates.

- **You best resource is your peers**
  Get in touch with each other
  Moodle—use the online forum to discuss
  Teams—free office 365 for all students!
  CUBCAPS reps — Julia and Valérie
Wishing you a great Fall semester!
Concordia Undergraduate Biochemistry, Chemistry And Physics Society
YOUR REPRESENTATIVES IN CUBCAPS

JULIA HORECZKY
VP INTERNAL PHYSICS

VALÉRIE COURVAL
VP ACADEMICS PHYSICS
Events
Planned For
Fall 2021

CARNIVAL
NEXT WEEK !!! (SEPTEMBER 17)

PROFESSOR SYMPOSIUM
TBD (AFTER MIDTERMS)
MENTEE

- IN YOUR FIRST YEAR OF THE PHYSICS PROGRAM (U0 OR U1)
- LIKE HAVING SOMEONE HELP YOU THROUGH THE YEAR
- WANT HELP MAKING CONNECTIONS WITH PEOPLE IN THE DEPARTMENT

MENTOR

- IN YOUR FINAL YEARS OF THE PHYSICS PROGRAM (U3 AND ABOVE)
- ARE INTERESTED IN SHARING THE KNOWLEDGE YOU’VE GAINED THROUGHOUT THE PAST FEW YEARS

IF YOU ARE INTERESTED IN THE PROGRAM, YOU CAN REACH OUT TO ZOE TSAVOUSSIS:
ZOE.B.TSAVOUSSIS@GMAIL.COM
EVEN IF YOU DON’T CARE ABOUT CUBCAPS, WE HIGHLY RECOMMEND YOU JOIN THE CONCORDIA PHYSICS UNDERGRAD FACEBOOK PAGE AND THE DISCORD SERVER, SINCE IT WILL BE AN EXCELLENT RESOURCE THROUGHOUT YOUR TIME IN THE PROGRAM

**ALL OUR SOCIALS:**

https://linktr.ee/CUBCAPS

JULIA (VP INTERNAL PHYS)
physinternal.cubcaps@asfa.ca

VALÉRIE (VP ACADEMICS PHYS)
physacademic.cubcaps@asfa.ca