

## Physics 1D03 – Course Outline Fall 2017

Physics 1D03 is an introduction to mechanics for students in Engineering. Lectures focus on concepts with some demonstrations and discussions in class. Short quizzes during the lecture, using the “i>clicker” system, are integrated with discussion of concepts.

Lab and tutorials are every other week, alternating. Tutorial sessions develop skills for solving physics problems, and test students on the LON-CAPA assignments they have completed. Labs develop measurement and data analysis skills related to physics. During the three-hour lab period, students complete the measurements and write the report, handing it in before leaving.

### Instructors

C01, C03: Dr. Reza Nejat	ABB–235	<i>nejat@physics.mcmaster.ca</i>
C02, C04: Dr. Waldemar Okoń	ABB–236	<i>okon@physics.mcmaster.ca</i>

Course Home Page: <http://www.physics.mcmaster.ca/phys1d03/>

**Prerequisite:** Registration in Engineering I.

Text (required):	<b>Physics for Scientists and Engineers, ninth edition,</b> by Serway and Jewett, published by Brooks/Cole Cengage Learning
Courseware (required):	<b>Physics 1D3/1E3 September 2017 Lab Manual.</b> (available at the bookstore)
Calculator (required):	Only the McMaster prescribed calculator (Casio <i>fx-991</i> ) is permitted in tests.
“i>clicker” (required)	The “i>clicker” response unit is on sale at the bookstore.

**Marks:** Grade weightings are given below. Averaging and combining of marks is done on a 100-point scale.

Final examination	46% to 51%*	For <b>each</b> lab not completed before the end of term, your final grade will be <u>reduced by 3 percentage points</u> , in addition to a mark of zero on the lab. A make-up week is provided if a lab is missed (arrange with Dr. Buntar, <buntarv@mcmaster.ca>)  <b>Clicker Quizzes:</b> Full marks will be given for answering all of the quizzes, with a sufficient number of correct answers, in at least 85% of the lectures. Details may differ between lecture sections.
Two midterm tests	24% (12% each)	
Tutorials	6%	
LON-CAPA problems	4%	
Clicker Quizzes (in lectures)	0 to 5%*	
Labs	15%	

*\*The exam will be worth 51% if your clicker mark is zero. Otherwise, your clicker mark out of 5 will be added to your grade out of 100, and the weight of your exam will be reduced by that number of percentage points. For example, if your clicker mark is 4/5, your exam will count for 47%, and 4 marks will be added to this to get a mark out of 51 for (exam plus clicker).*

**Tests:** Two tests of 80 minutes each, in the evenings of **Wednesday, Oct. 4** and **Wednesday, Nov. 8**. **One mark will be deducted from tests missing ANY required student information.**

**Labs and Tutorials:** Students complete four labs and five tutorials during the term. **Refer to the lab schedule handed out in class** to know which week you have a lab, and which week you have a tutorial.

**The instructor and university reserve the right to modify elements of the course during the term.** *Any necessary changes to dates, deadlines, marks weightings, etc. will be communicated to you through the course website and/or [avenue.mcmaster.ca](http://avenue.mcmaster.ca).*

### Physics 1D03 2017 Approximate Timetable

Week		Topics	Text: Serway 9 <sup>th</sup> Chapters, Sections
Begins	Number		
Sep 04	1	Introduction, kinematics-1D, vectors	1, 2, 3
Sep 11	2	Kinematics-2D, Newton's Laws	4, 5
Sep 18	3	Newton's Laws	5, 6: 6.1, 6.2
Sep 25	4	Circular Motion, Rotational Kinematics, Torque	6.1-6.2;10.1–10.4
Oct 02	5	Rotational Dynamics; <b>Test Oct. 04, 7:00 p.m.</b>	10.5, 10.7, 9.6
Oct 09	6	Fall Recess	Recess
Oct 16	7	Equilibrium of a Rigid Body, Work	12.1–12.3, 7.1–7.4
Oct 23	8	Work, Kinetic Energy, Potential Energy	7, 8
Oct 30	9	Energy, Rotational Energy, Power	8, 10.8, 9.1-9.3
Nov 06	10	Momentum, Centre of Mass again; <b>Test Nov. 08, 7:00 p.m.</b>	9.1–9.7
Nov 13	11	Rolling, Angular Momentum;	10.9, 11.1–11.4
Nov 20	12	Oscillatory Motion	15.1–15.7
Nov 27	13	Oscillatory Motion	15.1–15.7
Dec 04	14	Last class Dec. 6	

**Help:** Help with physics is available in BSB-B119 at several times during the week from TAs and student volunteers in the Physics Help Initiative (PHI).

**Lab exemptions:** If you are repeating the course, and have completed all the labs, you can **apply at the Physics Office (ABB-241)** to be exempt from the lab portion of the course. You should do this before the first lab. All students must attend the tutorials; **there is no tutorial exemption.**

**Missed work:** For **one brief absence due to minor illness**, you may use the MSAF self-reporting system at <http://mcmaster.ca/msaf>. You may use this **only once per term**, and only for a brief absence due to **medical** reasons. In all other cases, you must take appropriate documentation to the Engineering student advisors in JHE/A214. **Put Cheryl Johnston's <johnstcj@mcmaster.ca>** email in the MSAF form. Missed labs must be made up by the end of term; arrange it with Lab Instructor: Dr. Viktor Buntar, <buntarv@mcmaster.ca>. For missed tutorials or midterms, weight is added to the final exam. See the Physics 1D03 Avenue to Learn page for more detail (<http://avenue.mcmaster.ca>).

**Academic Dishonesty:** Academic dishonesty consists of misrepresentation by deception or other fraudulent means and can result in serious consequences, *e.g.*, a grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty, please refer to <http://www.mcmaster.ca/academicintegrity/>. As well, read the specific rules in the Physics 1D3/1E3 Lab Manual, and on the **course Avenue to Learn page**.

The following illustrates only three forms of academic dishonesty:

1. Having in the lab room, or referring to in the lab, a portion of a previously-written lab report.
2. Communicating or collaborating during a test, or allowing another student to see your work.
3. Using a friend's clicker to submit answers on his behalf.