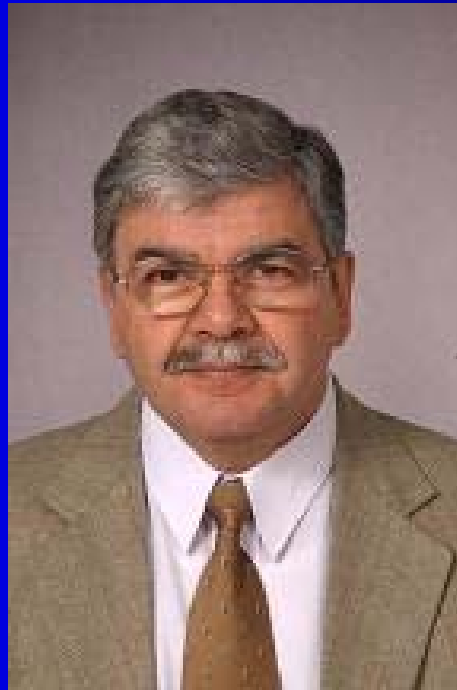


Department of Mechanical & Mechatronics Engineering

Welcome to 2A Mechanical Engineering !

Some People in Mechanical Engineering You Should Know



Professor Fathy Ismail
Interim Department Chair



Professor David Weckman
Associate Chair Undergraduate Studies,
Welding & Joining Specialization Coordinator,
(E5-3107, me-ugchair@uwaterloo.ca, ext. 37200)

A Very Important Person in Mechanical Engineering !



Lynn Crema, ME Academic Advisor
E5 – 3106, ext. 33625 lcrema@uwaterloo.ca

Communication is Important !

For important deadlines, class lecture schedule, term /make-up lecture schedule, and other information on safety, work term reports, etc., please review the

Information for Current Students web page:

<http://www.mme.uwaterloo.ca>

- > Undergraduate Students
 - > Mechanical Engineering
 - > Current Students

(hard copies of class schedules are still available in Lynn Crema's office.)

Communication is Important !

Student/Faculty Committee:

Your class should elect:

- one Class-Professor
- 2 Student Class Representatives
(co-chairs of the Committee)



Please let Lynn Crema know by **Friday Sept. 14th**

First Student/Faculty Lunch Meeting is

Thursday, Sept. 20th at 11:30 am in E5-3101

Safety Lecture

- The Safety Lecture by your Class Professor is Tuesday September 25th at 11:30 am in your Class/Professor Hour
- **The Safety Lecture is Compulsory**
- You will be required to sign a form acknowledging that you have read the Department of Mechanical Engineering & Mechatronics Engineering Lab. Safety Manual and have attended the Safety lecture.

Course Drop/Add Deadlines

- **Add:** Friday, September 21st
- **Drop:** Friday, September 28th
- **Late Drop:** Sept. 29th to Nov. 16th – WD grade
- **Late Drop with Penalty:** starts Nov. 17th
 - WF (withdraw/fail) grade shows
 - grade of 38% is included in average
- **CHECK YOUR COURSE LIST on QUEST!**

Mid-Term Exam Week & Make-up Lectures

For 2nd and 3rd year terms only (not 4th year):

- There are no lectures during midterm week
- Midterms are usually 4:30 - 6:30 pm, Monday-Friday of week 6 or 7.
- There will be 3 make-up lectures for each course at 11:30 am Tuesdays & 8:30 am Thursdays throughout the term except ME 202 which is 2:30 pm Fridays (see make-up lecture schedule)

Final Exams

- First day of exams is Thursday, Dec. 6th
- Last day of exams is Thursday, Dec. 20th
- Final Exam Emergency Day is Fri., Dec 21st
- Remember, after this is when you can book:
 - plane tickets,
 - holidays,
 - anything else you like !

Some University of Waterloo Examinations Regulations

- Examinations, test, or lectures are not permitted between the last day of lectures and the first day of exams.
- Final exams are not allowed during the formal lecture period.
- Major term tests ($>25\%$) normally may not be held in the last five days of lectures.

Final Exam Scheduling Rules

- There will be four (4) – 2.5 hour final examination time slots/day
- Final exam scheduling rules:
 - No back-to-back exams.
 - No last slot (evening) – first slot (next morning) exams.
 - No more than two (2) exams in one day.

Academic Offences

- Students are expected to know what constitutes academic integrity, to avoid committing academic offences and to take responsibility for their actions.
- Students who are unsure whether an action constitutes an offence, or who need help learning how to avoid offences e.g., plagiarism, copying, cheating, etc., or about “rules” for group work/collaboration should seek guidance from the course instructor, TA, Academic Advisor or the Associate Chair Undergraduate Studies.
- University Policy #71 Student Discipline defines academic offences to include plagiarism, copying and cheating.
- Students who believe that they have been wrongfully or unjustly penalized have the right to file a grievance as per Policy #70 Student Grievance.

The Mechanical Engineering Curriculum

- Meets Canadian Engineering Accreditation Board (CEAB) requirements
- Is fully described in the online calendar at:
<http://www.ucalendar.uwaterloo.ca/>
- Graduation from a CEAB certified Engineering program satisfies the academic requirements for licensing as a Professional Engineer in Ontario (PEng)
- Note: You get up to 12 months credit towards your 4 year work experience requirement for your work terms after 2B provided you fill out the required PEO form.

The Mechanical Engineering Curriculum

1A

MATH 115
Linear Algebra
for Engineering

MATH 116
Calculus for
Engineering

PHYS 115
Mechanics

CH E 102
Chemistry for
Engineers

ME 100
Commun'n &
Profess'ism

1B

MATH 118
Calculus 2

GEN E 121
Digital
Computation

PHYS 125
Physics for
Engineers

GENE 123
Elec. Eng. for
Mech. Eng's.

ME 115
Materials 1

M SCI 261
Managerial &
Eng. Economics

2A

ME 201
Advanced
Calculus

ME 230
Materials 2

ME 202
Statistics for
Engineers

ME 269
Elec'mech Dev
Power Proc'ing

ME 219
Deformable
Solids 1

CSE #2

2B

ME 203
Ordinary Diff'l
Equations

ME 212
Dynamics

ME 220
Deformable
Solids 2

ME 262
Microproc's &
Digital Logic

ME 250
Thermo-
dynamics 1

3A

ME 303
Advanced
Eng. Math

ME 354
Thermo-
dynamics 2

ME 351
Fluid
Mechanics 1

ME 321
Kinematics and
Dynamics

ME 340
Manufacturing
Processes

3B

ME 322
Mechanical
Design 1

ME 353
Heat Transfer 1

ME 360
Control
Systems

ME 362
Fluid
Mechanics 2

ME 380
Mech. Eng.
Design Work'p

CSE #3

4A

ME 481
Mech. Eng.
Design Proj. 1

Technical
Elective 1

Technical
Elective 2

Technical
Elective 3

CSE #4

4B

ME 482
Mech. Eng.
Design Proj. 2

Technical
Elective 4

Technical
Elective 5

Technical
Elective 6

Technical
Elective 7

CSE #5

Mechanical Engineering Core Courses

1A

MATH 115
Linear Algebra
for Engineering

MATH 116
Calculus for
Engineering

PHYS 115
Mechanics

CH E 102
Chemistry for
Engineers

ME 100
Commun'n &
Profess'ism

1B

MATH 118
Calculus 2

GENE 121
Digital
Computation

PHYS 125
Physics for
Engineers

GENE 123
Elec. Eng. for
Mech. Eng's.

ME 115
Materials 1

M SCI 261
Managerial &
Eng. Economics

2A

ME 201
Advanced
Calculus

ME 230
Materials 2

ME 202
Statistics for
Engineers

ME 269
Elec'mech Dev
Power Proc'ing

ME 219
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Solids 1

CSE #2

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ME 203
Ordinary Diff'l
Equations

ME 212
Dynamics

ME 220
Deformable
Solids 2

ME 262
Microproc's &
Digital Logic

ME 250
Thermo-
dynamics 1

3A

ME 303
Advanced
Eng. Math

ME 354
Thermo-
dynamics 2

ME 351
Fluid
Mechanics 1

ME 321
Kinematics and
Dynamics

ME 340
Manufacturing
Processes

3B

ME 322
Mechanical
Design 1

ME 353
Heat Transfer 1

ME 360
Control
Systems

ME 362
Fluid
Mechanics 2

ME 380
Mech. Eng.
Design Work'p

CSE #3

4A

ME 481
Mech. Eng.
Design Proj. 1

Technical
Elective 1

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Elective 2

Technical
Elective 3

CSE #4

4B

ME 482
Mech. Eng.
Design Proj. 2

Technical
Elective 4

Technical
Elective 5

Technical
Elective 6

Technical
Elective 7

CSE #5

Note: new 8-month compulsory capstone design project

Mechanical Engineering Complementary Studies Electives

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	GEN E 121 Digital Computation	PHYS 125 Physics for Engineers	GENE 123 Elec. Eng. for Mech. Eng's.	ME 115 Materials 1	M SCI 261 Managerial & Eng. Economics
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	CSE #3
4A	ME 481 Mech. Eng. Design Proj. 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Proj. 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

Complementary Studies Elective (CSE) Courses

- 5 CSE Courses are required:
- (see <http://www.ucalendar.uwaterloo.ca/ENG/cse.html>)
- 1 “List A” course (Impact)
- 1 “List B” course (Economics): **MSCI 261 in 1B***
- 2 “List C” courses (Humanities and Social Sciences)
- One additional CSE (from List A, C or D)

* MSCI 261 is a “List B” CORE course

Mechanical Engineering Technical Electives (7 Req'd)

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	GEN E 121 Digital Computation	PHYS 125 Physics for Engineers	GENE 123 Elec. Eng. for Mech. Eng's.	ME 115 Materials 1	M SCI 261 Managerial & Eng. Economics
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	CSE #3
4A	ME 481 Mech. Eng. Design Proj. 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Proj. 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

Technical Elective (TE) Courses

- 7 TEs (ME 4xx and ME 5xx level) are required
- A minimum of 5 TEs must be from Mechanical Engineering, i.e., ME 4xx or ME 5xx
- A wide variety of TE courses are available within Mechanical Engineering

Mechanical Engineering TEs

- Automation and Control
- Fluid Mechanics
- Machine Design and Solid Mechanics
- Materials Engineering and Processing
- Thermal Engineering

... you can specialize, diversify, or ...

Some Designated Faculty Options

- Biomechanics Option
- Management Sciences Option
- Mechatronics Option (is coming back), etc.

Mechanical Engineering Specialization

- Welding & Joining Specialization

Some require extra course load ... all require planning.

Talks about each Option or Specialization will be organized for you the term before the option starts.

International Exchanges

- 4 or 8 month International Exchange experiences at Universities around the world
- Mech. Eng. students normally do this in 3rd year
- must be in good standing with $> 70\%$ GPA
- Much pre-planning is required!
- See the Faculty of Engineering Int'l Exchange web pages and our MME Int'l Exchange Officer, Prof. Adrian Gerlich, for more information



Mechanical Engineering Curriculum Requirements

Before you graduate, you must have:

- Passed all 32 required core courses
- Passed 5 CSE and 7 TE courses
- Passed PD 20 & 21, and any three from PD 3 to 7 (see the WatPD-Engineering web site.)
- Cleared all failed courses
- Have CR for WHMIS & ELPE
- Have CR for 3 work term reports (WKRPT 200, 300 & 400)
- Have CR for 5 of 6 work terms

Quest & Course Enrolment

- You will receive instructions for enrollment each term
- Lynn Crema and the Registrar's Office will enroll you in your core courses on Quest each term; you only need to add CSEs, TEs or “extra” courses on QUEST.

Do not drop core courses on Quest

- If you miss your Quest appointment during your work term, do not worry about it, and do not call Lynn. You will have another opportunity later during open enrolment.
- It is your responsibility to make sure you have the core, CSE and TE courses you need to graduate.

Quest, “Extra” Courses, etc.

- The “Extra” course designation is usually done automatically by Lynn Crema, but you must check.
- Normally, we will assign “Extra” status to Faculty Option courses with a requirement designation of **DRNA** (Degree Requirement, Not in Average); no action is required by you, but you should check that it is correct on Quest.
- Also, **NRNA** (Not a Degree Requirement, Not in Avg.)

See Lynn Crema for the “Extra” course designations

Work Report Deadlines

- Three (3) work reports are required prior to graduation
- See the calendar for the schedule of terms when you are required to submit your Work Reports
- Work reports must be submitted to Mechanical Engineering (Lynn Crema) by 4:00 pm, one week after the first day of lectures for marking
- Late reports will be stored and marked the next term
 - a failed grade (38%) stays on your transcript and SUPP S appears when you clear the work report.

Personal Problems?

- Personal problems that interfere with your academic studies, e.g., hospitalization, death in the family, study skills, learning disabilities, etc.?
- Seek help; do not try to handle it yourself.
- For illness: go to Health Services, your family doctor or hospital, etc. (with a Verification of Illness form).
- Counselling Services:
 - group or individual sessions
 - study skills
 - exam anxiety workshops
 - contact the First-Year Office (CPH 1320)
- University of Waterloo Office for Persons with Disabilities (Needles Hall)

Documenting Personal Problems

Documentation is extremely important!

If you have difficulty such as illness or a death in the family during the term, make sure you inform the Mechanical Engineering Undergraduate Office (Lynn Crema) immediately – and be sure to obtain **documentation** such as letters from counsellors or doctors immediately. **Print out and give your doctor the Health Services “Verification of Illness” form from their web site to fill out.**

Never miss or not show up for a mid-term or final exam, i.e., you will get a grade of DNW (Did Not Write).

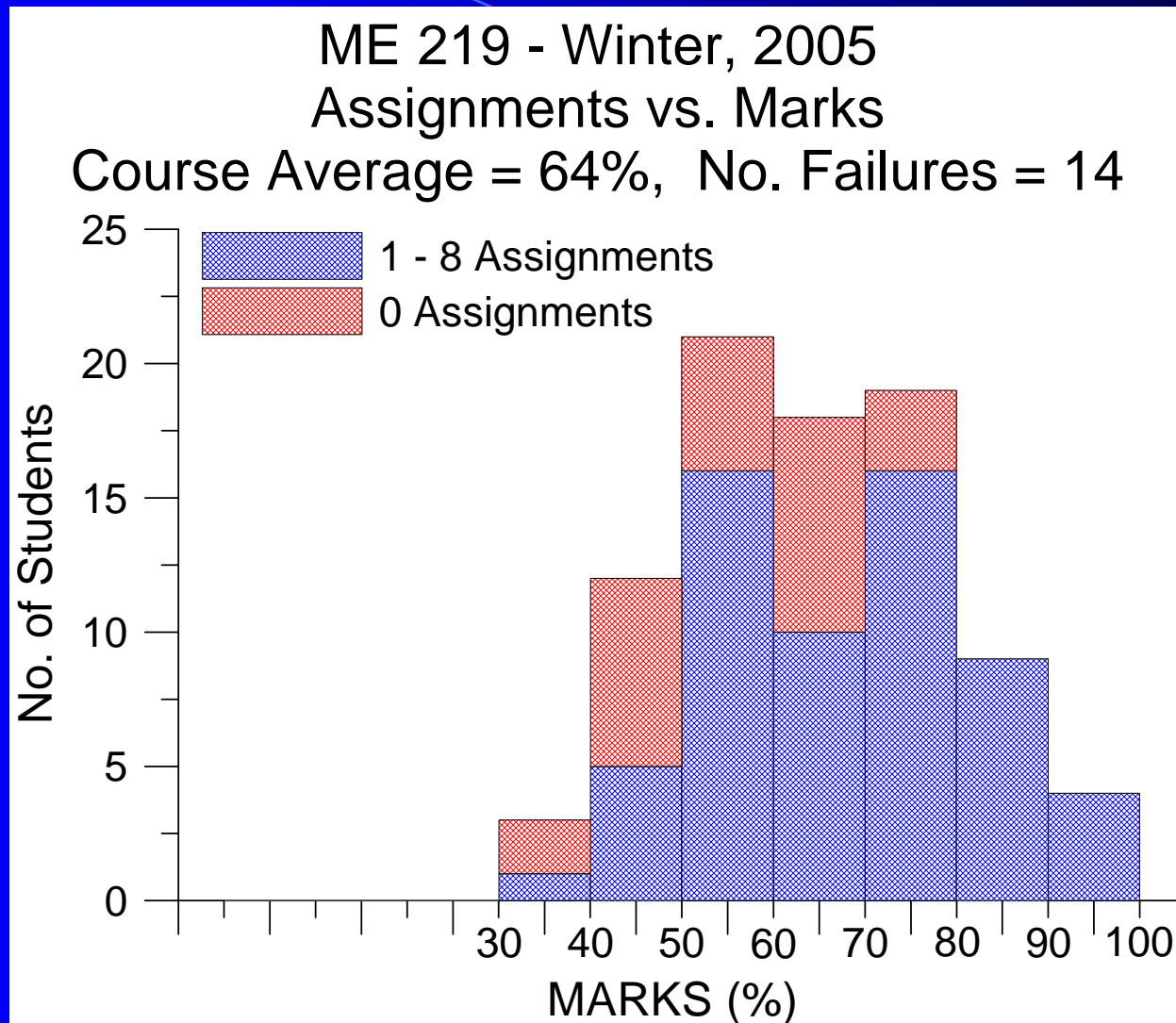
Always inform the instructor &/or Lynn Crema **before** the exam. **Bring documented evidence.**

Assignments

Marks are not given for assignments in 2nd and 3rd year Mechanical Engineering; however:

- assignments will be given,
- they are invaluable study aids
- you are strongly recommended to do all assignments.

Assignments are Important!



You are strongly recommended to do all assignments.

Course Averages

- Course marks and averages are not “belled” or otherwise adjusted in Mechanical Engineering:
 - If you work hard and do well, the course average will be high and there will be no failures 😊; however,
 - If you do not work hard, then 😞

2A Mechanical Engineering, Fall, 2005

Course	ME 201	ME 202	ME 219	ME 230	ME 269
Course Average	67	67	70	78	63
No. Failures	6	12	7	0	16

Keys to Success

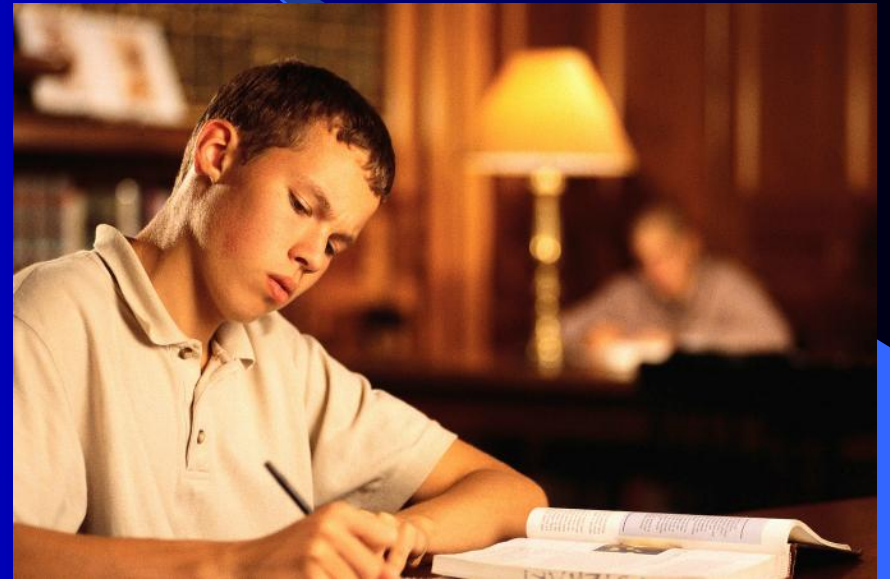
Make the most of lectures and tutorials

- be on time, pay attention,
- turn off your cell phone and laptop
- be a proactive learner: ask questions during class, during tutorials or go see the TA or professor if you do not understand something
- be courteous (disruptions during lectures are rude and inconsiderate , unprofessional, and will not be tolerated: Policy #33 Ethical Behaviour and Policy #71 Student Discipline...)

Keys to Success

- Keep pace with the lecture material:
 - **Buy!, read and study your textbooks**
even before the lectures
 - review your notes, text, etc., regularly
 - sort out problems as they occur
(talk to friends, TAs, Professors ...)

Keys to Success



Study &

Work Hard!

Keys to Success

SLEEP!

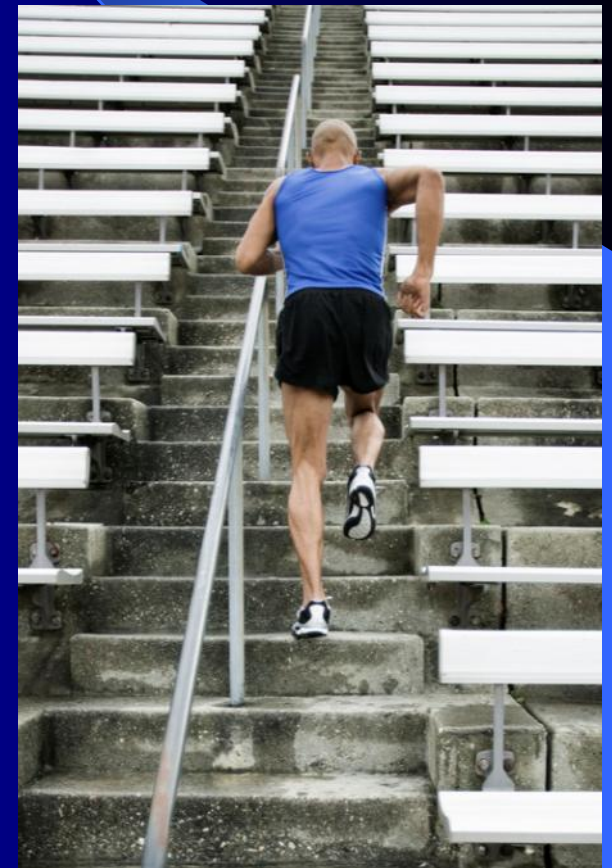


Keys to Success

Eat Properly!



Keys to Success Exercise!



Mechanical Engineering at the University of Waterloo



Good luck this term!

Questions?