

# ECE 260: Continuous-Time Signals and Systems

Michael Adams

Department of Electrical and Computer Engineering  
University of Victoria  
Victoria, BC, Canada

<https://www.ece.uvic.ca/~mdadams>

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[youtube.com/iamcanadian1867](https://www.youtube.com/iamcanadian1867)



[github.com/mdadams](https://github.com/mdadams)



[@mdadams16](https://twitter.com/mdadams16)



Course Outline URL:

<https://heat.csc.uvic.ca/coview/course/2024051/ECE260?unp=t>

# Agenda

- 1 video conferencing
- 2 course overview
- 3 various course details
  - general teaching strategy
  - course web site and Brightspace site
  - video lectures
  - lecture sessions
  - office hours
  - tutorial sessions
  - required textbook and lecture slides
  - computer and software requirements
  - assignments and exams
  - course outline and other handouts
- 4 advice for succeeding in course
- 5 questions

# Joining Zoom Meetings With Single Sign-On (SSO)

- users are required to join Zoom meetings using Zoom Single Sign-On (SSO) with their UVic Netlink credentials (i.e., Netlink username and password)
- use of SSO allows identity of person to be verified using their UVic Netlink credentials
- allowing person to enter meeting anonymously would pose significant security risk (e.g., Zoom-bombing attacks)
- *if you are placed in waiting room* instead of being directly admitted into meeting, you *did not use SSO* correctly
- users placed in waiting room *will not be admitted* to meeting
- therefore, *anyone who does not use SSO will be blocked from joining meeting*

# Video Conferencing Etiquette

- *always use real (first and last) name* for your screen name (or you may be removed from meeting)
- always *use headset* in order to minimize feedback when microphone is not muted
- always *mute microphone* when not speaking
- in larger meetings, always *disable video camera* when it is not strictly needed to avoid network bandwidth problems
- unless instructed otherwise, if you have question for meeting host, *raise your virtual hand* (accessible via “Participants” on Zoom), rather than interrupting host

- course studies mathematics of:
  - signals (i.e., functions and sequences); and
  - systems (i.e., aircraft, car, cell phones, MRI machines, and all other useful things that engineers build)
- course provides formal mathematical framework for design and analysis of complex systems
- main topics of course:
  - 1 complex analysis (mostly review)
  - 2 continuous-time signals and systems
  - 3 continuous-time linear time-invariant (LTI) systems
  - 4 continuous-time Fourier series (CTFS) with applications
  - 5 continuous-time Fourier transform (CTFT) with applications
  - 6 partial fraction expansions (PFEs)
  - 7 bilateral and unilateral Laplace transforms (LT) with applications
- CTFS, CTFT, and LT all essential mathematical tools for analyzing signals and designing and analyzing systems

- course employs *flipped classroom* approach to teaching
- students introduced to course materials through *prerecorded video lectures* prepared by instructor (which are required viewing)
- then, students given opportunity to engage with course materials in *interactive lecture sessions* held by instructor during lecture time slots

# Course Web Site and Brightspace Site

- course employs both course web site and Brightspace site
- course web site:
  - <https://www.ece.uvic.ca/~mdadams/courses/ece260>
- primary information source for course is course web site, which has all handouts and links to other important information/resources for course
- some areas of course web site are password protected
- Brightspace site:
  - <https://bright.uvic.ca/d21/home/350691>
- Brightspace site only intended to be used for:
  - posting important course announcements and other information, such as:
    - assignment submission deadlines, exam dates, and username and password required to access password-protected areas of course web site
  - submitting and grading of assignments
  - providing students with means to review their course grades
- students should enable Brightspace notifications (via email) so that course announcements received in timely fashion

- all core instructional content available as *prerecorded videos* via instructor's YouTube channel:
  - <https://www.youtube.com/iamcanadian1867>
- video lectures are required viewing for course
- video lecture information package available that contains:
  - copy of version of slides used in video lectures [PDF]
  - copy of all worked-through examples (including annotations) used in video lectures [PDF]
  - fully-cataloged list of slides covered in lectures, where each slide in list has *link to corresponding time offset* in YouTube video where slide is covered [PDF] [HTML]
- schedule for viewing video lectures provided [PDF]
- *critically important to follow this viewing schedule*
- for more information on video lectures, see “[Video Lectures](#)” section of course web site



- lecture time slots will be used by instructor to hold interactive lecture sessions to assist students in learning course materials more effectively
- sessions held *face-to-face* with *provision for online attendance* (assuming instructor has computer setup necessary to accommodate online attendance)
- some potential uses of lecture sessions include (but are not limited to):
  - providing brief summary of course materials covered
  - discussing more difficult aspects of course materials and addressing common misunderstandings
  - working through additional examples
  - answering student questions about course materials
  - giving demonstrations to illustrate practical applications of theory covered in course
- students *not required to attend* lecture sessions *unless explicitly indicated* by instructor
- students *strongly encouraged* to participate in at least some of lecture sessions, as this will likely lead to improved understanding of course materials

- normally, lecture sessions *will not be recorded* by instructor
- some reasons for not recording lecture sessions include:
  - main objective of lecture sessions is to provide opportunity for *interactive engagement*, and recording lecture sessions would run completely contrary to this objective
  - recording any interactions with students raises many *privacy concerns*, which are best avoided whenever possible
  - some students *may feel uncomfortable* to participate if being recorded
  - students may take photos/screenshots of materials presented, which reduces need to record these materials for future reference
  - all core instructional content for course already available in video format
- additional information on lecture sessions available from “[Lecture Sessions](#)” section of course web site

# Office Hours

- office hours will be held by instructor in order to provide extra help with course materials as well as discuss other course-related matters with students
- office-hour sessions will be offered *online only*
- time slot for office hours will be determined by Brightspace survey and posted on course web site
- questions about course materials will be answered in main room so that all students can benefit from questions asked
- private/confidential matters will be discussed one-on-one with student in breakout room
- student may attend simply to listen to questions from other students or comments from instructor
- office hours cancelled during reading break (and on holidays)
- more information on office hours available from “[Office Hours](#)” section of course web site

- tutorial time slots will be used by tutorial TAs to hold sessions in order to help students with course materials
- tutorial sessions to be held *face-to-face*
- TA may additionally allow for online attendance *if this is feasible*
- student may attend session for tutorial section different from one in which they registered as long as this does not prevent those registered in section from having seat in classroom
- tutorials start in *second week* of classes

# Required Textbook and Lecture Slides

- textbook:
  - M. D. Adams, *Signals and Systems*, Edition 5.0, Dec. 2022, ISBN 978-1-990707-00-1 (PDF).
- lecture slides:
  - M. D. Adams, *Lecture Slides for Signals and Systems*, Edition 5.0, Dec. 2022, ISBN 978-1-990707-02-5 (PDF).
- textbook web site:
  - <https://www.ece.uvic.ca/~mdadams/sigsysbook>
- available under Creative Commons (i.e., open-access) license
- can be obtained in PDF format from textbook web site (***do not download from Google Play or Google Books*** since Google removes all hyperlinks from documents)
- video lectures mentioned in Section G.2 (titled “2020-05 ECE 260 Video Lectures”) of textbook same as ones used for course

# Computer and Software Requirements

- need computer to use for viewing video lectures, accessing MATLAB software, and participating in online meetings
- Zoom video conferencing software used for all online meetings in course
- MATLAB software necessary for most assignments in course
- students are *required to install MATLAB software* on their computer or ensure that they have access to MATLAB through some other means
- UVic has site license for MATLAB software so that students can obtain this software free of charge
- for information on how to obtain MATLAB software, refer to:
  - <http://matlab.uvic.ca>
- might also be possible to access MATLAB via remote login to undergraduate lab machines

# Assignments

- all assignments must be submitted *using Brightspace site*
- submissions must be in *PDF format* (not JPEG, Word, or other formats)
- *nominal* submission deadlines for assignments posted *on Brightspace site*; if any changes necessary, will be announced to class
- late assignments will *receive grade of zero*
- assignments will also be graded via Brightspace
- most assignments have some MATLAB exercises and *MATLAB considered fair game for exams* in course
- some assignments split into two parts (i.e., Parts A and B)
- splitting of assignments, mainly intended to:
  - reduce size of PDF documents being scanned for submission
  - allow TAs to return graded assignments more quickly
- for split assignments, submission deadlines for Parts A and B will often only be couple of days apart
- *do not wait until after submission deadline for Part A to start work on Part B*, as there will not be sufficient time to complete Part B

- exams held *face-to-face* during *lecture time slot*
- since exams held face-to-face, Brightspace will not be used in writing of exams
- *nominal* exam dates posted on course web site or Brightspace site; if any changes necessary, will be announced as much in advance as possible



- some information on course web site includes:
  - 1 course outline [\[web\]](#) [\[PDF\]](#) [\[annotated PDF\]](#)
  - 2 online meetings handout [\[PDF\]](#)
  - 3 video-lecture information package [\[Zip\]](#)
    - lecture examples [\[PDF\]](#)
    - video-lecture catalog [\[HTML\]](#) [\[PDF\]](#)
  - 4 video-lecture schedule handout [\[PDF\]](#)
  - 5 assignments handout [\[PDF\]](#) [\[annotated PDF\]](#)
  - 6 supporting affordable learning resources handout [\[PDF\]](#)
  - 7 course-materials bug-bounty program (CMBBP) handout [\[PDF\]](#)
  - 8 course-materials errata handout [\[text\]](#)
  - 9 optional textbook handout [\[PDF\]](#) [\[annotated PDF\]](#)

- use office hours and/or lecture sessions (*not email*) for questions about course materials (cannot guarantee response to questions asked via email)
- most handouts versioned (i.e., include date on each page) so that newer versions can be distinguished from older ones
- if you downloaded any handouts (including course outline) before day of first lecture, check to ensure that those handouts have not changed since time downloaded

# Advice for Succeeding in Course

- avoid falling behind, since easy to reach point where catching up is impossible
- work ahead to whatever extent is possible so that unexpected problems less likely to result in falling behind
- watch video lectures with pace that does not fall behind provided schedule
- avoid binge watching videos as this prevents effective learning
- when having difficulties with course materials, seek help as soon as possible
- do not leave assignments until last minute or copy solutions from other students or old solution sets, as this will bypass learning



Course Web Site URL:

<https://www.ece.uvic.ca/~mdadams/courses/ece260>

These course-introduction slides are available from the course web site under the “Miscellany” section.