

# Online Education

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May 2020

# Pictures

- [www.freepik.com](http://www.freepik.com)
- Unless otherwise noted, pictures are designed by Freepik

# Format:

- It is **NOT** a Tutorial



# Layout

- Introduction and Definitions
- Asynchronous content
- Synchronous lectures and labs
- Labs, Exams, and Assessments
  - Hands-on Labs
  - Multiple Choice Questions
  - Long answer Questions
- Miscellaneous
- Recommendation



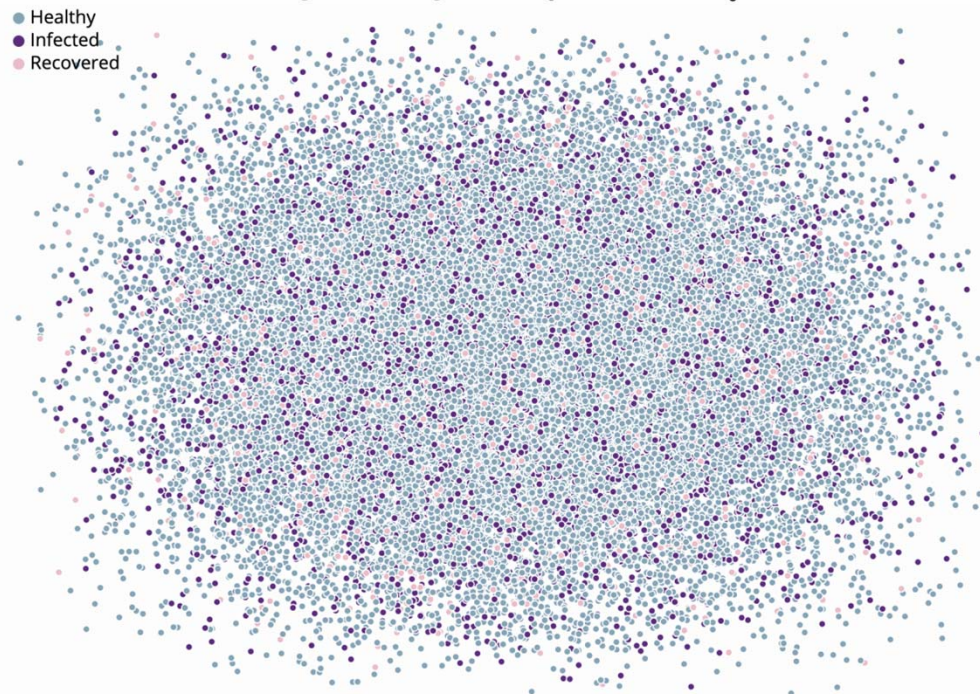
# INTRODUCTION AND DEFINITIONS

( 5 )

- What just happened?
- Who can help us?
- What can we do?

# What Just Happened?

- California State Universities cancel all-in person classes:
- <https://abc7.com/education/csu-campuses-to-remain-closed-through-fall-semester/6176291/>
- <https://stack.dailybruin.com/2020/05/12/covid-model/>



# What Just Happened?

- UBC: “will primarily offer larger classes online with selected smaller classes conducted in-person, adhering to physical distancing and other public health requirements.”
- SFU: “we will endeavour to deliver in-person instruction in those courses whose learning objectives cannot be achieved through remote means”
- UVIC: “predominantly online for the fall term.”
- UNBC: “predominantly via alternative modes of delivery”
- Thompson Rivers University: “many of our programs will no doubt continue to be offered in alternative format – that is to say, virtually.”
- Royal Roads University: “programs, courses and residencies will continue to be delivered entirely online until December 31, 2020. Students in program areas that cannot be shifted to online work will be contacted about alternative arrangements.””
- Uof S: “combine primarily remote online learning, with limited classroom, laboratory, clinical and physical instruction only where warranted and where circumstances permit.”
- U of R: “cautious approach,” specifying that “a continuation of the remote delivery we are now using offers students in the fall term the best chance of academic success.”
- Universite de Montreal: “the fall 2020 semester will be held largely at a distance,” adding that “only certain courses or portions of courses may be given on campus.”
- McGill: ““will be offered primarily through remote delivery platforms.” As the situation evolves, the university “will examine possibilities for on-campus student life and learning activities, which will respect careful safety protocols. These may include activities such as small classroom-based seminars, conferences, tutorials, workshops, or reading groups as well as various campus life and engagement activities.”
- .....

[https://www.universityaffairs.ca/news/news-article/several-universities-announce-their-fall-plans-with-instruction-primarily-online/?utm\\_source=University+Affairs+e-newsletter&utm\\_campaign=6f11f919da-EMAIL\\_CAMPAIGN\\_2020\\_05\\_07&utm\\_medium=email&utm\\_term=0\\_314bc2ee29-6f11f919da-425255341](https://www.universityaffairs.ca/news/news-article/several-universities-announce-their-fall-plans-with-instruction-primarily-online/?utm_source=University+Affairs+e-newsletter&utm_campaign=6f11f919da-EMAIL_CAMPAIGN_2020_05_07&utm_medium=email&utm_term=0_314bc2ee29-6f11f919da-425255341)

# What Just Happened?



Price of education covers<sup>(1)</sup> “Certification” and “Experience”

(1) <https://nymag.com/intelligencer/2020/05/scott-galloway-future-of-college.html>

Bag of money: Designed by studiogstock / Freepik

# What Just Happened?

- Students might choose to go to a “Mega online University”<sup>(1)</sup>



(1) <https://www.chronicle.com/article/Meet-the-New-Mega-University/245049?cid=rclink>

Photo: Designed by starline / Freepik



# What Just Happened?

- “Public universities hardly ever go bankrupt, but they can be permanently diminished.” Kevin Carey <sup>(1)</sup>



(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D5OHujVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPh-DWXbb-Sfhdms2YmlfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>

(2) Debt picture: Designed by macrovector / Freepik

# What Just Happened?

- “This crisis has revealed the importance of good teaching and how difficult it is” Erin Bartram<sup>(1)</sup>



(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D5OHujVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPh-DWXbb-Sfhds2YmlfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>



# Who can help us?

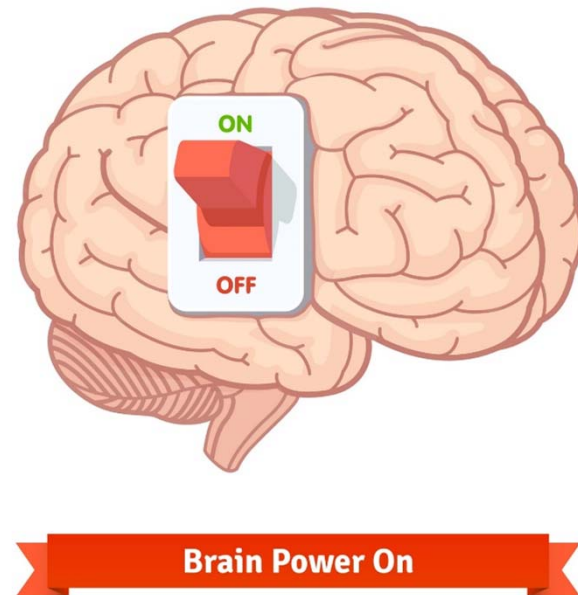
- “The managers won’t save us. No one will save us” Marc Bousquet<sup>(1)</sup>



(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D5OHujVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPh-DWXbb-Sfhdms2YmlfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>

# Who can help us?

- Administrators are concerned with “narrowing the true freedom of thought in the interest of complacent obedience to status quo”<sup>(1)(2)</sup>.



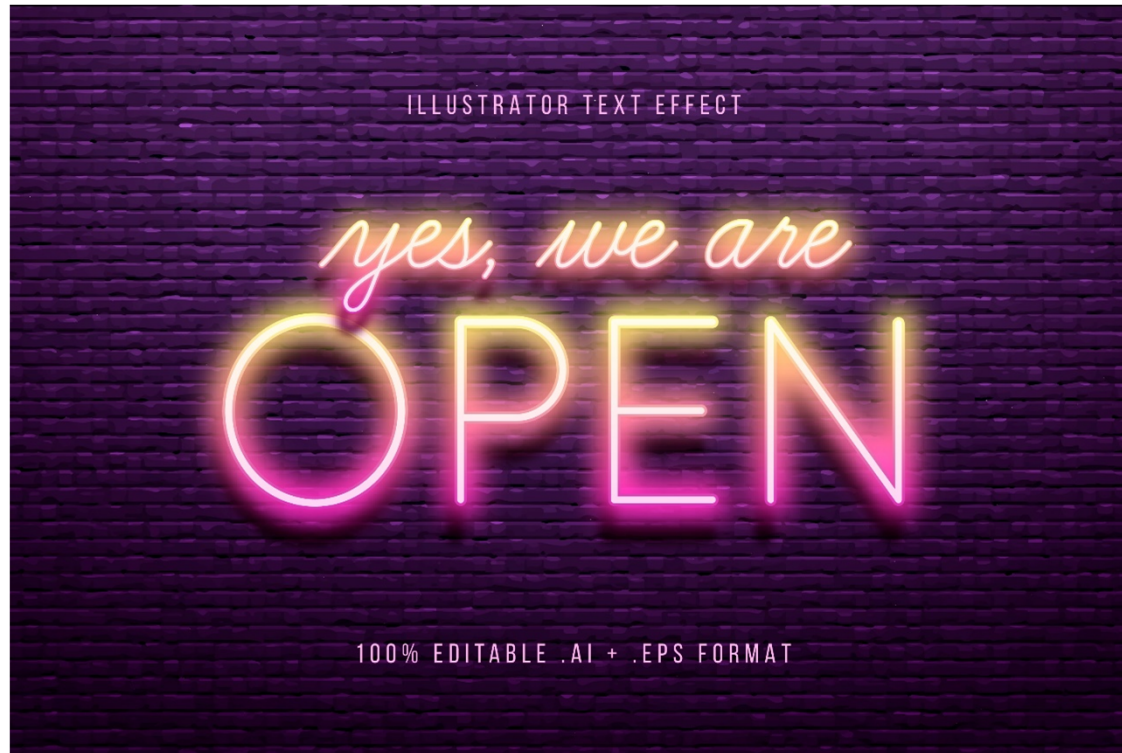
(1) Henry Rosovsky. The University: An Owner's Manual. <https://www.amazon.ca/University-Owners-Mannual-Henry-Rosovsky/dp/0393307832>

(2) Interview with Noam Ghomsky. <https://www.hup.harvard.edu/catalog.php?isbn=9780674002821>

Picture: Designed by iconicbestiary / Freepik

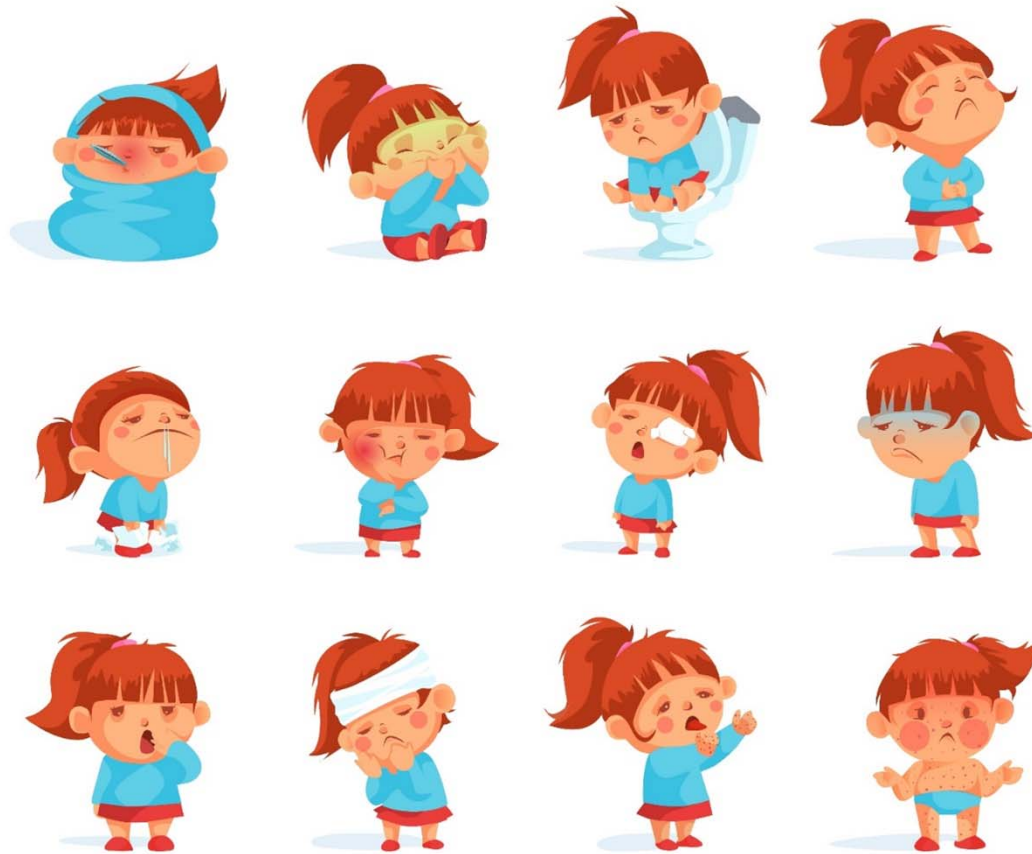
# Who can help us?

- “We, the tenured, must commit to making the university a better place” Aimee Morrison<sup>(1)</sup>



(1) <https://www.universityaffairs.ca/opinion/in-my-opinion/we-the-tenured-must-commit-to-making-the-university-a-better-place/>

# What can we do?



“Let’s reclaim our moral purpose as sources of knowledge, service, and even hope”. Patricia McGuire<sup>(1)</sup>

“Before we even think about a syllabus or videos or Zoom, think about what it means to be a student. Now.” Cathy Davidson<sup>(2)</sup>

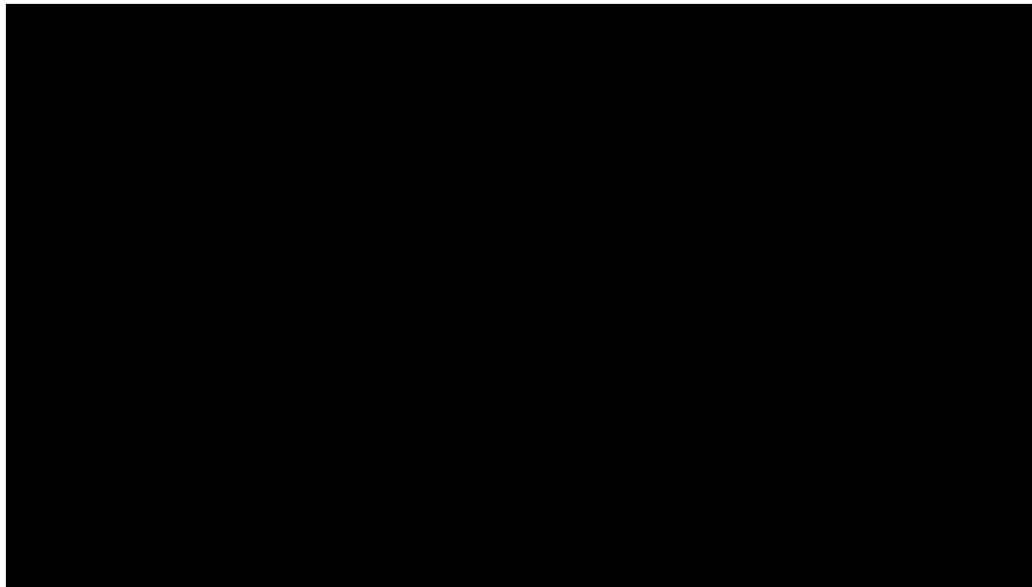
(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D5OHuJVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPh-DWXbb-SfhdmS2YmIfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>

(2) <https://www.hastac.org/blogs/cathy-davidson/2020/05/11/single-most-essential-requirement-designing-fall-online-course>

Picture: Designed by macrovector / Freepik

# What can we do?

- “We can- we must –replicate online the vibrancy of campus life” <sup>(1)</sup>Joseph E. Aoun

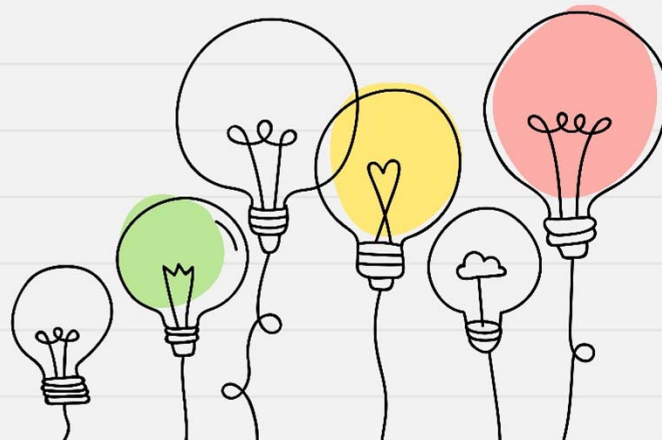


(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D50HuJVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPh-DWXbb-Sfhdms2YmlfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>

Jimmy & the Roots Video: <https://www.youtube.com/watch?v=d1ilvfdvrUI>

# What can we do?

- “. But rather than set up a false choice between online and in-person instruction, we should envision a distinctively hybrid future in which the faculty will have far more freedom to develop instructional designs using both virtual and live classes. ”Patricia McGuire <sup>(1)</sup>



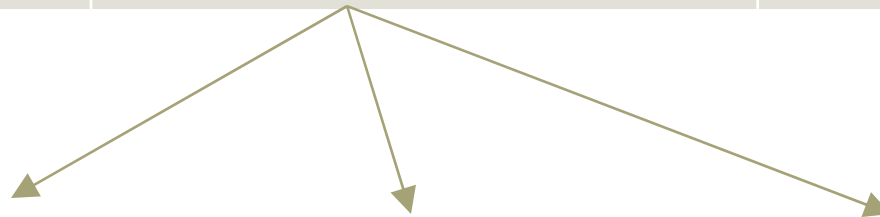
(1) <https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474?key=Q-8a5P7D50HuJVB3ZSRDR1GphAxyJHteTzvSQOkhcVQD5MtPBXKCPH-DWXbb-Sfhdms2YmlfdmpYbVhMdk8zdDI4aU9RVHF4ZG1Qbkhwa0dxMWZaMTA2VFBHcw>

# Definitions:

- Pedagogical Forms
- Online Pedagogy Forms

# Pedagogical Forms:

Traditional	Online	Blended
Traditional lecture	<ul style="list-style-type: none"><li>- Static (on-demand)</li><li>- Interactive (video connection)</li></ul>	Combination of Traditional and online



Synchronous <sup>(1)</sup>	Asynchronous <sup>(1)</sup>	Hybrid
Real time interaction	On-demand	

(1) <https://thebestschools.org/magazine/synchronous-vs-asynchronous-education/>



# Online Lectures

Synchronous <sup>(1)</sup>	Asynchronous <sup>(1)</sup>	Hybrid
Real time interaction Advantages: <ul style="list-style-type: none"><li>- Engagement</li><li>- Dynamic</li><li>- Mentorship</li></ul> Disadvantages: <ul style="list-style-type: none"><li>- Rigid</li><li>- Technical difficulties</li></ul>	On-demand Advantages: <ul style="list-style-type: none"><li>- Flexible</li><li>- Self-pace</li><li>- Affordability</li></ul> Disadvantages: <ul style="list-style-type: none"><li>- Isolation</li><li>- Time lag</li></ul>	

(1) <https://thebestschools.org/magazine/synchronous-vs-asynchronous-education/>

# Online Lectures

Synchronous <sup>(1)</sup>	Asynchronous <sup>(1)</sup>	Hybrid
Instructor should consider: <ul style="list-style-type: none"><li>- learning pace</li><li>- Technical difficulties</li></ul>	Instructor should consider: <ul style="list-style-type: none"><li>- Students learn from interaction with each other and with instructor</li></ul>	

(1) <https://thebestschools.org/magazine/synchronous-vs-asynchronous-education/>

# CREATING ASYNCHRONOUS CONTENT

( 23 )

# Asynchronous Content:

- Civil and Environmental Engineering, Youtube Channel:
  - <https://www.youtube.com/channel/UCU3qMcMLT8sbaaYCY4HogWw/playlists>



- CTL resources:

**Centre for Teaching and Learning**

- <https://www.ualberta.ca/centre-for-teaching-and-learning/resources/online-teaching.html>

# Asynchronous Content:

- **PowerPoint:**

## ■ 13.13.6 GAUSS QUADRATURE

### EXAMPLE

Calculate the exact integral of  $ze^z$  on the interval  $[0, 3]$  and find the absolute relative error if a Gauss 1, 2, 3, and 4 integration point scheme is used

### SOLUTION

First, to differentiate between the given function limits, and the limits after changing variables, we will assume that the function is given in terms of  $z$  as follows:

$$g(z) = ze^z$$

The exact integral is given by:

$$\int_0^3 ze^z dz = e^z(z-1)\Big|_{z=0}^{z=3} = 2e^3 + 1 = 41.1711$$

$$\int_a^b g(z) dz = \int_{-1}^1 g\left(\frac{(b-a)(x) + (b+a)}{2}\right) \frac{(b-a)}{2} dx$$

$$\int_0^3 ze^z dz = \int_{-1}^1 g\left(\frac{3x+3}{2}\right) \frac{3}{2} dx = \int_{-1}^1 \left(\frac{3x+3}{2}\right) e^{\left(\frac{3x+3}{2}\right)} \frac{3}{2} dx$$

- E.g.: <https://www.youtube.com/playlist?list=PLWlJvChadvVyrGBXh7ThvFskJlOO1fnNI>
- Advantages:
  - Narrate each slide at your own pace
  - Export the video without the need of any other software
- Disadvantages:
  - Limited by PPT capabilities



# Asynchronous Content:

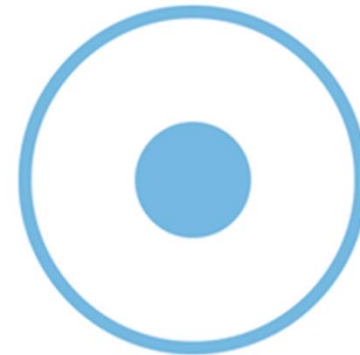
- **Screen Capturing Software:**



Camtasia(\$250)  
(~\$50 onthefhub)



Camstudio



Screencast-o-matic<sup>(1)</sup>

E.g.: [https://www.youtube.com/playlist?list=PLWlJvChadvVwSrn6irdxZ\\_TwTuz5A6DtW](https://www.youtube.com/playlist?list=PLWlJvChadvVwSrn6irdxZ_TwTuz5A6DtW)

E.g.: <https://www.youtube.com/playlist?list=PL9491E4BCFC7CE63A>

- **Advantages:**

- Free to run anything on the screen.
- With the right tools, you can provide vibrant content

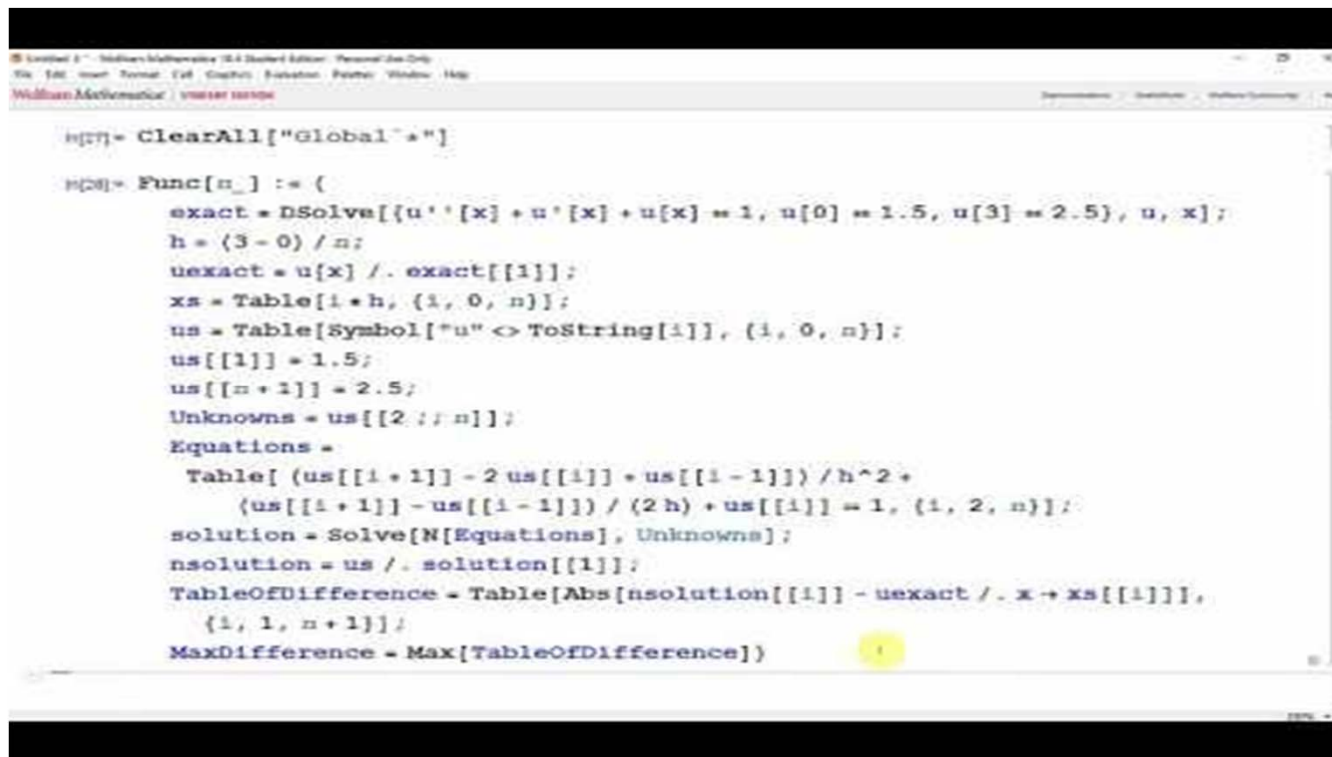
- **Disadvantages:**

- Technically demanding

(1) <https://screencast-o-matic.com/education>

# Asynchronous Content:

- Screen Capturing Software:

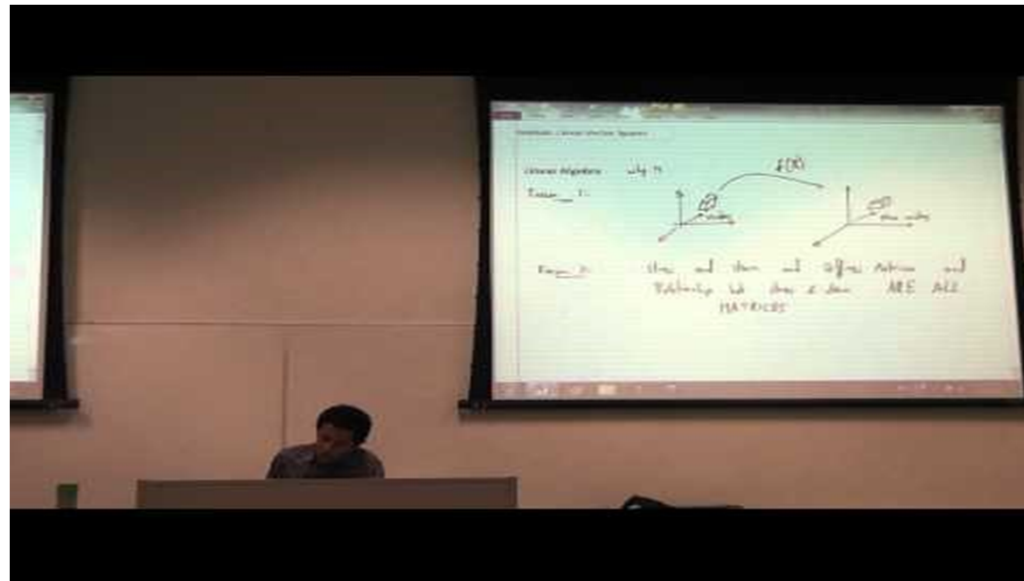


```
In[27]:= ClearAll["Global`*"]

In[28]:= Func[n_] := (
  exact = DSolve[{u''[x] + u'[x] + u[x] == 1, u[0] == 1.5, u[3] == 2.5}, u, x];
  h = (3 - 0) / n;
  uexact = u[x] /. exact[[1]];
  xs = Table[i * h, {i, 0, n}];
  us = Table[Symbol["u" <> ToString[i]], {i, 0, n}];
  us[[1]] = 1.5;
  us[[n + 1]] = 2.5;
  Unknowns = us[[2 ;; n]];
  Equations =
    Table[ (us[[i + 1]] - 2 us[[i]] + us[[i - 1]]) / h^2 +
      (us[[i + 1]] - us[[i - 1]]) / (2 h) + us[[i]] == 1, {i, 2, n}];
  solution = Solve[N[Equations], Unknowns];
  nsolution = us /. solution[[1]];
  TableOfDifference = Table[Abs[nsolution[[i]] - uexact /. x -> xs[[i]]],
    {i, 1, n + 1}];
  MaxDifference = Max[TableOfDifference])
```

# Asynchronous Content:

- **Good old Video Camera:**
- E.g.: <https://www.youtube.com/playlist?list=PLWlJvChadvVxot0R2xLTTalmnVwva41ET>



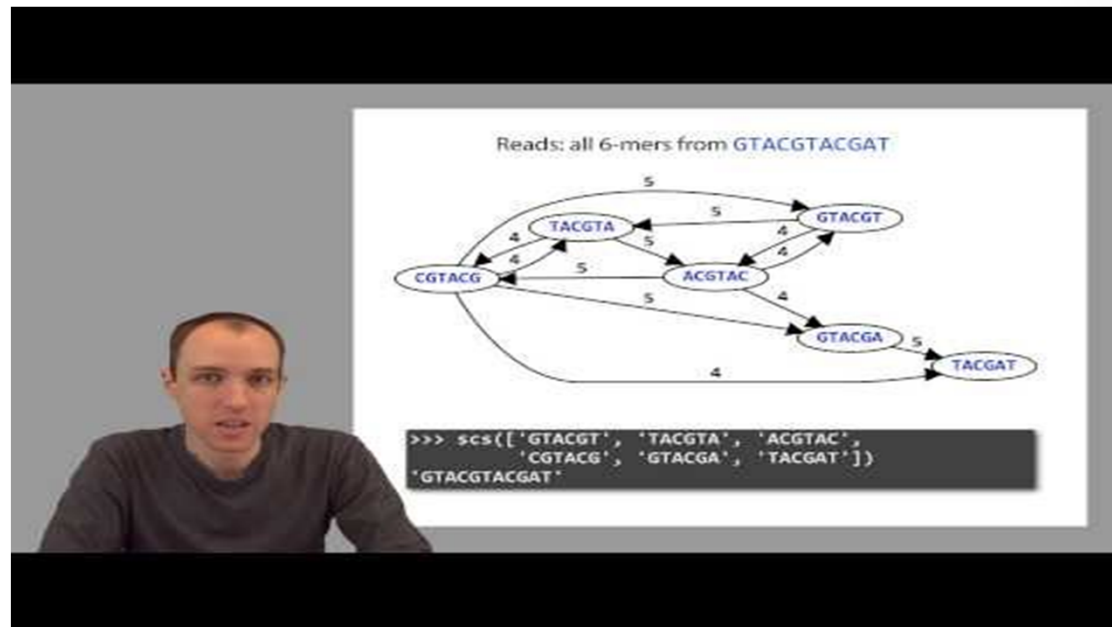
- **Advantages:**
  - Replicate your actual lectures
  - Students can see you
- **Disadvantages:**
  - Will require video editing
  - Requires some resources
  - Might be less engaging



# Asynchronous Content:

- **Split Screen / switch between your face and slides:**

- Google meets
- Zoom
- screen capture
- (@1.26

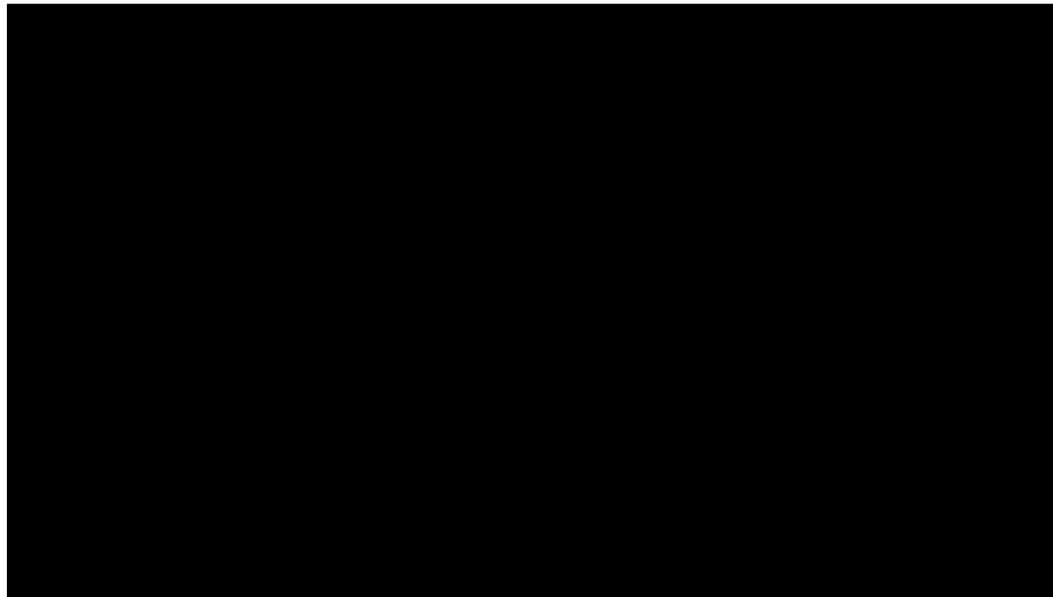


- Advantages:
  - Replicate your actual lectures
  - Students can see you
- Disadvantages:
  - Will require video editing
  - Time consuming
  - [https://www.youtube.com/watch?v=QykgNu0vdos&feature=emb\\_logo](https://www.youtube.com/watch?v=QykgNu0vdos&feature=emb_logo)

# Asynchronous Content:

- **Split Screen / switch between your face and slides:**

- Gaming tools:
- Nvidia Gforce
- Fraps
- Xsplit
- OBS



- **Expert:**

- Dr. Japan Trivedi
- [https://www.youtube.com/watch?v=h2nr7UDEQgU&feature=emb\\_logo](https://www.youtube.com/watch?v=h2nr7UDEQgU&feature=emb_logo)

# Asynchronous Content:

- Tips:
  - Short duration of clips
  - Use visual elements<sup>(1)</sup> <sup>(2)</sup>
  - Test knowledge with quizzes and self assessments <sup>(2)</sup>
  - Do not constrain yourself with lecture length. Sooner or later the concept of Credit Hours will have to be revised. <sup>(3)</sup>
  - New tools are popping up by the minute. Use whichever makes you most comfortable. ***The quality of the lecture depends on the layout, design, and content, not the tool.***

(1) <https://myemail.constantcontact.com/One-Thought-to-Start-Your-Day--Credit-Hours.html?soid=1103080520043&aid=IrVtBOPssRs>

(2) <https://teaching.temple.edu/edvice-exchange/2016/03/6-tips-creating-engaging-video-lectures-students-will-actually-watch>

(3) <https://medium.com/@didolores/tips-for-creating-effective-video-lectures-for-online-courses-8413e32d297b>

# Asynchronous Content:

- Invest in a good microphone: (~\$70).  
E.g. blue Snowball iCE <sup>(1)</sup>



## 13.13.6 GAUSS QUADRATURE

### EXAMPLE

Calculate the exact integral of  $xe^x$  on the interval  $[0, 3]$  and find the absolute relative error if a Gauss 1, 2, 3, and 4 integration point scheme is used.

### SOLUTION

First, to differentiate between the given function limits, and the limits after changing variables, we will assume that the function is given in terms of  $z$  as follows:

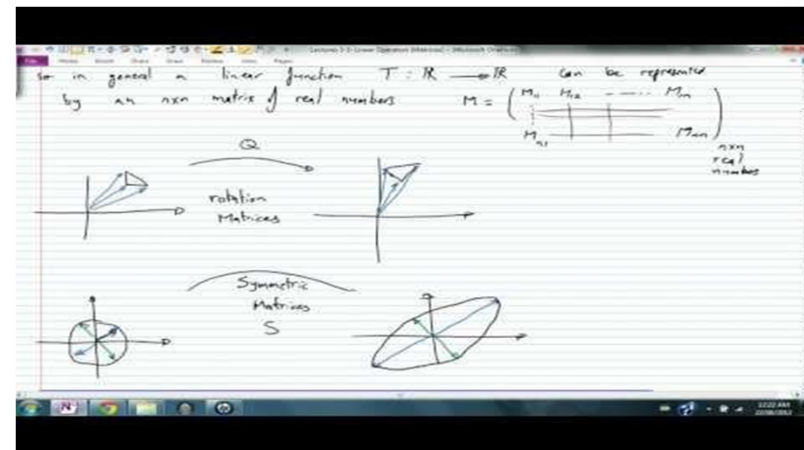
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$$\int_a^b g(z) dz = \int_{-1}^1 g\left(\frac{(b-a)(x) + (b+a)}{2}\right) \frac{(b-a)}{2} dx$$

$$\int_0^3 ze^z dz = \int_{-1}^1 g\left(\frac{3x+3}{2}\right) \frac{3}{2} dx = \int_{-1}^1 \left(\frac{3x+3}{2}\right) e^{\left(\frac{3x+3}{2}\right)} \frac{3}{2} dx$$



With: <https://youtu.be/44ak8dAxzLI>

Without: <https://youtu.be/44ak8dAxzLI>

(1) [https://www.bestbuy.ca/en-ca/product/blue-microphones-blue-microphones-snowball-condenser-mic-black-1929-snowball-blk/10425172?cmp=knc-s-71700000061237381&gclid=EAlaIqobChMIoffj5ee76QIV4wI9Ch1j1QTsEAYYASABEgKuJvD\\_BwE&gclsrc=aw.ds](https://www.bestbuy.ca/en-ca/product/blue-microphones-blue-microphones-snowball-condenser-mic-black-1929-snowball-blk/10425172?cmp=knc-s-71700000061237381&gclid=EAlaIqobChMIoffj5ee76QIV4wI9Ch1j1QTsEAYYASABEgKuJvD_BwE&gclsrc=aw.ds)

# Asynchronous Content:

- Asynchronous content is **essential**, but **not sufficient**
- Majority of students learn through interaction
- Engineering Accreditation stipulates “contact hours”

# SYNCHRONOUS LECTURES

# Synchronous Lectures:

- Simple synchronous lecture:
  - Google meet
  - Zoom
- Tips:
  - Students should **mute** their **mics**
  - Consider turning off your video camera for slow connections
  - **Record** the session and have it available online later
  - Students should use the **chat area** to ask questions.
  - Use **share screen** to share your slides.
  - Use a **headphone set**.

# Synchronous Lectures:

- Multiple Choice Questions or Lecture Exercises:

## Question 4

Not yet  
answered

Marked out of  
1.00

Flag  
question

Edit  
question

Consider the following initial value problem:

$$y'(t) = 0.05y^2t$$

If the initial condition is given by  $y(0) = y_0 = 1$ , and if a step size  $h = 0.5$  is used to find a numerical solution using the explicit Euler method, then the value of  $y_2$  (the value of  $y$  at  $t = 1$ ) is given by:

Select one:

☐ a.  $y_2 = 1.038$

☐ b.  $y_2 = 1.0125$

☐ c.  $y_2 = 1.025$

☐ d.  $y_2 = 1.077$

cross out

cross out

cross out

cross out

Advantage: Participation marks:

- eclass: MCQ questions:

<https://support.ctl.ualberta.ca/index.php?/Knowledgebase/Article/View/286/13/adding-and-managing-quiz-questions>



# Synchronous Lectures:

- Multiple Choice Questions or Lecture Exercises:

## Question 17

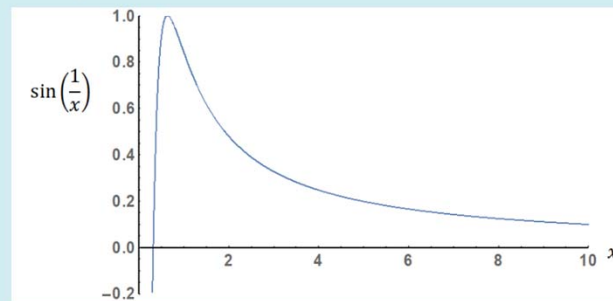
Not yet  
answered

Marked out of  
1.00

Flag  
question

Edit  
question

The function  $f : [0.3, \infty) \rightarrow \mathbb{R}$  is defined as  $f(x) = \sin(1/x)$ . If  $f$  has one root in the specified interval (see graph below) and if the Newton Raphson method is used then the following is true:



Select one:

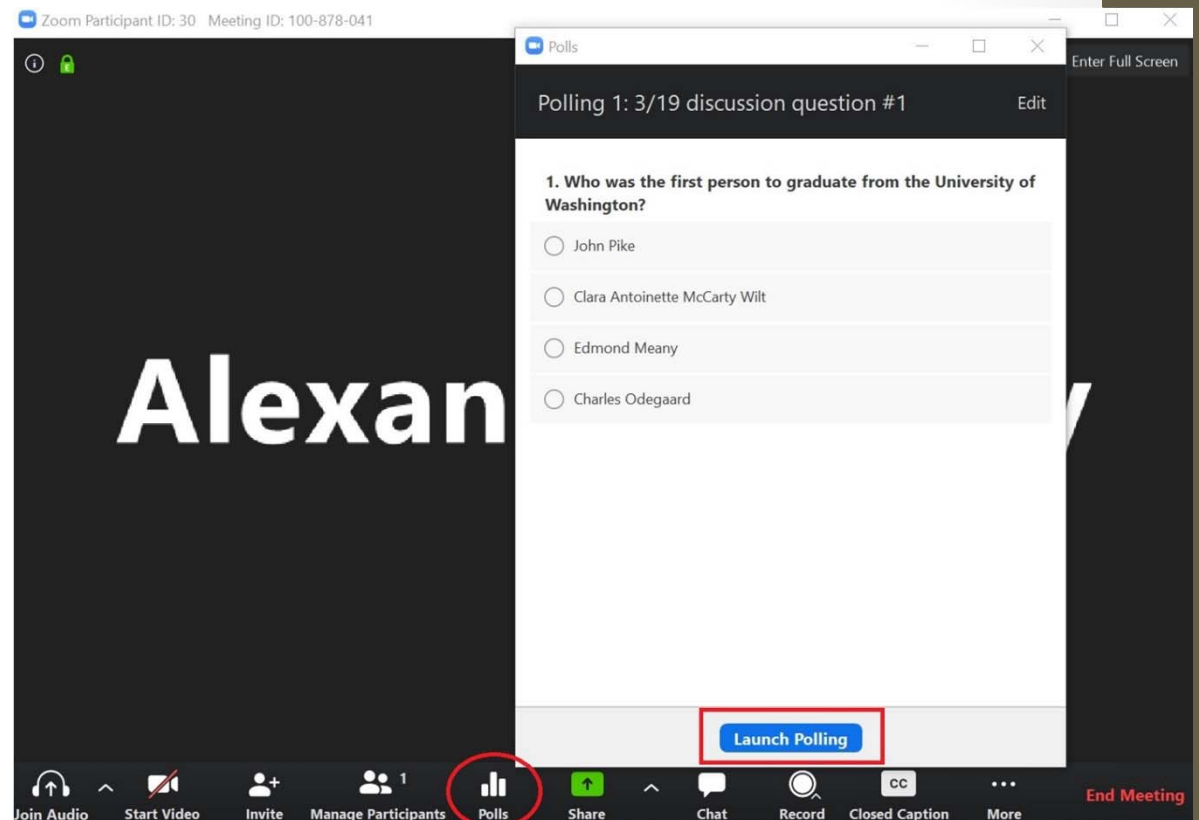
- ☐ a. The Newton Raphson method will never converge no matter what the initial guess is. cross out
- ☐ b. The Newton Raphson method will converge for all values of initial guess equal to or less than 2 cross out
- ☐ c. The Newton Raphson method will always converge no matter what the initial guess is. cross out
- ☐ d. The Newton Raphson method will never converge if the initial guess is greater than 2 cross out

- eclass: MCQ questions:

<https://support.ctl.ualberta.ca/index.php?/Knowledgebase/Article/View/286/13/adding-and-managing-quiz-questions>

# Synchronous Lectures:

- MCQ  
or Lecture Exercises:  
(Zoom Polls)



- Tutorial: <https://www.youtube.com/watch?v=HDHRmvpUVXw>
- Zoom session polls: <https://support.zoom.us/hc/en-us/articles/213756303-Polling-for-meetings>

# Synchronous Lectures:

- Breakout Rooms / Groups



- Zoom:
  - Tutorial: <https://www.youtube.com/watch?v=fIJJLtanyxk>
  - Breakout rooms: <https://support.zoom.us/hc/en-us/articles/206476093-Enabling-breakout-rooms>
- Tip:
  - You need a moderator for each “group”

# Synchronous Lectures:

- Breakout Rooms / Groups
- Google meets:
  - Will have to be done manually!
- Tip:
  - You need a moderator for each “group”

# Synchronous Lectures:

- Poll tools:
  - <https://www.mentimeter.com/>
  - <https://www.polleverywhere.com/>
  - Kahoot <https://kahoot.com/>
  - Zoom polls
  - Eclass quizzes
  - IST E-Poll
    - free tool available to UAlberta instructors called ePoll.  
<https://ist.ualberta.ca/index.php/blog/news/epoll-replaces-iclicker-student-response-tool>  
knowledgebase articles on ePoll  
<https://support.ctl.ualberta.ca/index.php?/IST/Knowledgebase/List/Index/17/iclicker>

# LABS, EXAMS, AND ASSESSMENTS

# Hands-on Labs



- E.G.: CivE 270 labs:  
<https://www.youtube.com/playlist?list=PLt2e1W5DyEIRneafRNTU16XKw9qQ3c7FO>
- Suggestions:
  - Video-tape lab
  - Use a video-editing software to highlight intricacies.
  - Provide data for students to perform calculations

# Multiple Choice Assessments

You can preview this quiz, but if this were a real attempt, you would be blocked because:

This quiz is not currently available

## Question 16

Not yet answered

Marked out of 1.00

Flag question

Edit question

In a numerical procedure to find the root the following estimates were obtained  $x_1 = 1.559$ ,  $x_2 = 1.421$ ,  $x_3 = 1.413$ ,  $x_4 = 1.4135$ ,  $x_5 = 1.4133$ . If the criterion for convergence is that the absolute relative error  $\varepsilon_r < 0.0002$ , then, the first acceptable root is:

Select one:

- ☐ a.  $x_2$
- ☐ b.  $x_3$
- ☐ c.  $x_4$
- ☐ d.  $x_5$

cross out

cross out

cross out

cross out

## Question 17

Not yet answered

Marked out of

The function  $f : [0.3, \infty) \rightarrow \mathbb{R}$  is defined as  $f(x) = \sin(1/x)$ . If  $f$  has one root in the specified interval (see graph below) and if the Newton Raphson method is used then the following is true:

1.0 |  $\wedge$

## Quiz navigation

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50				

Finish attempt ...

Start a new preview

- eclass: MCQ questions:  
<https://support.ctl.ualberta.ca/index.php?/Knowledgebase/Article/View/286/13/adding-and-managing-quiz-questions>
- Tips:
  - Shuffle questions / shuffle answers
  - 5 questions per page
  - Use question banks for future delivery of course



# Multiple Choice Assessments

Question categories for 'Course: CIV E 295 CIVIL ENGINEERING ANALYSIS II (LEC B1 Wi20)'

- **Default for CIV E 295 (LEC B1 Wi16) (0)**

The default category for questions shared in context 'CIV E 295 (LEC B1 Wi16)'.



- BVP (4)
- Cramer Method (0)
- Curve Fitting (8)
- Error (5)
- Fixed Point Iteration Method Multi variables (0)
- Fixed Point Iteration Method one variable (1)
- Gauss and Gauss Jourdan Elimination (5)
- Graphical, False Position and Bisection (5)
- IVP (4)
- Jacobi and Gauss-Seidel Methods (5)
- Linear Algebra (0)
- LU and Cholesky decompositions (2)
- Newton Raphson Multi variables (2)
- Newton Raphson one variable (2)
- Numerical Differentiation (3)
- Numerical Integration Gauss Quadrature (1)
- Numerical Integration (Rectangle to Simpson) (4)
- Numerical Integration Richardson Extrapolation (1)
- ODE (1)
- Piecewise Interpolation (2)
- Polynomial Interpolation (8)
- Taylor Series (4)

- eclass: MCQ questions:

<https://support.ctl.ualberta.ca/index.php?/Knowledgebase/Article/View/286/13/adding-and-managing-quiz-questions>

- Tips:

- Shuffle questions / shuffle answers
- 5 questions per page
- Use question banks for future delivery of course

# Calculated Questions

Variable inputs

Formula +/- tolerance for the answer

The screenshot shows a web browser window with the URL `eclass.srv.ualberta.ca/question/preview.php?id=10776025&courseid=56774`. The page displays a question titled "Question 1" with a status of "Not yet answered" and a mark of "Marked out of 1.00". The question text is: "Given a cantilever beam of length  $L = 7.8$  in m and a load  $4.1$  in N.. Then bending moment in N.M. at point A is equal to". The values "7.8" and "4.1" are circled in green. Below the question text is an "Answer:" label followed by a text input field. A "Response history" table is shown below the answer field, with columns: Step, Time, Action, State, and Marks. The table contains one row: Step 1, Time 23/05/20, 11:24, Action Started, State Not yet answered, Marks. At the bottom of the question preview, there are buttons: "Start again", "Save", "Fill in correct responses", "Submit and finish", and "Close preview". Below these buttons are links for "Technical information" and "Download this question in Moodle XML format". At the bottom, there is a section for "Attempt options" with a dropdown menu for "How questions behave" set to "Deferred feedback".

Question 1

Not yet answered

Marked out of 1.00

Given a cantilever beam of length  $L = 7.8$  in m and a load  $4.1$  in N.. Then bending moment in N.M. at point A is equal to

Answer:

Response history

Step	Time	Action	State	Marks
1	23/05/20, 11:24	Started	Not yet answered	

Start again Save Fill in correct responses Submit and finish Close preview

Technical information

Download this question in Moodle XML format

Attempt options

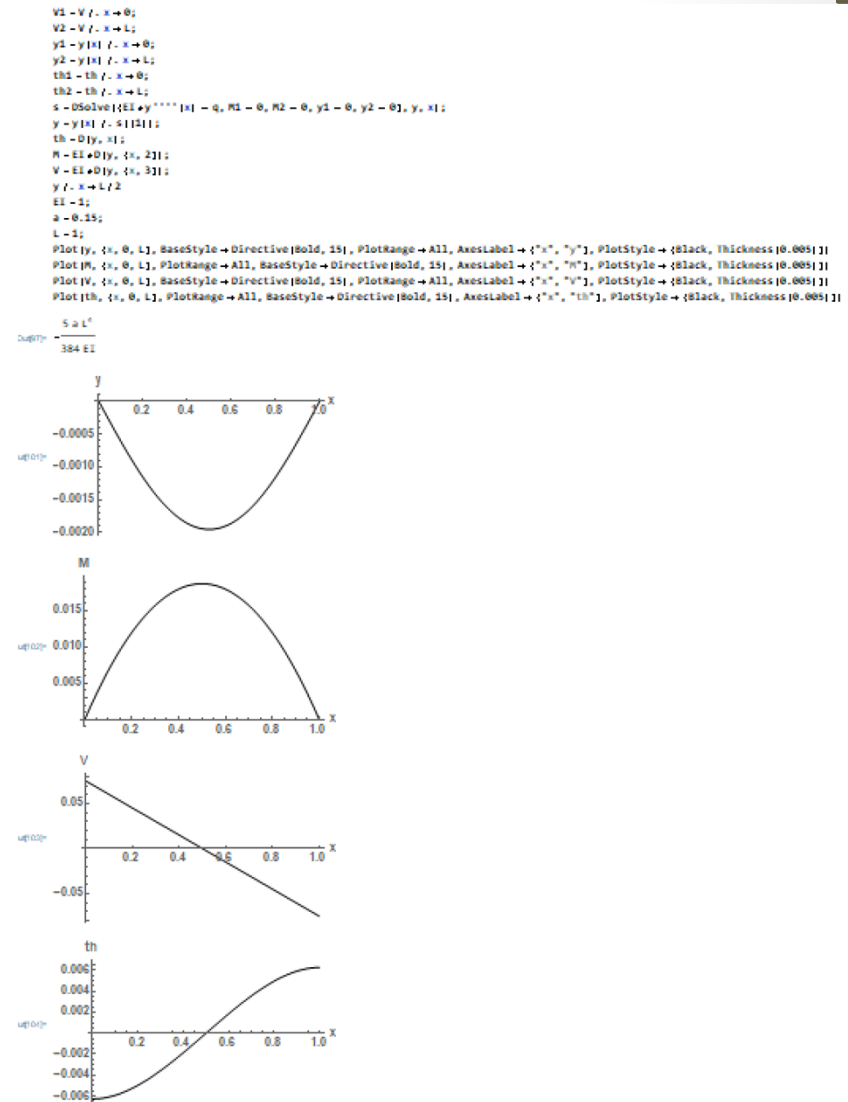
How questions behave Deferred feedback

- <https://support.ctl.ualberta.ca/index.php?/Knowledgebase/Article/View/326/45/adding-calculated-quiz-questions>

# Long Answer Assessments

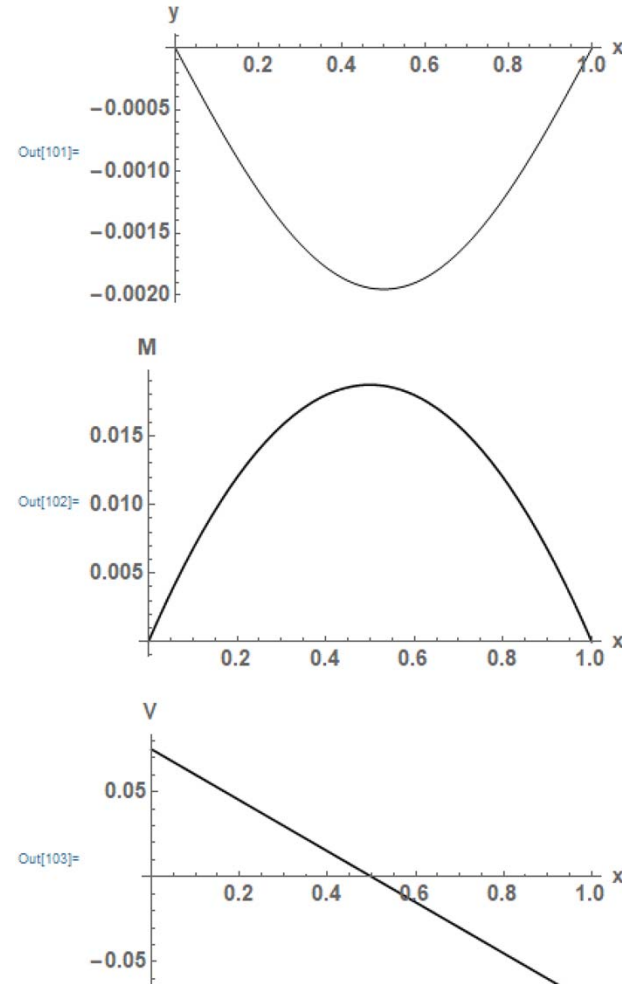
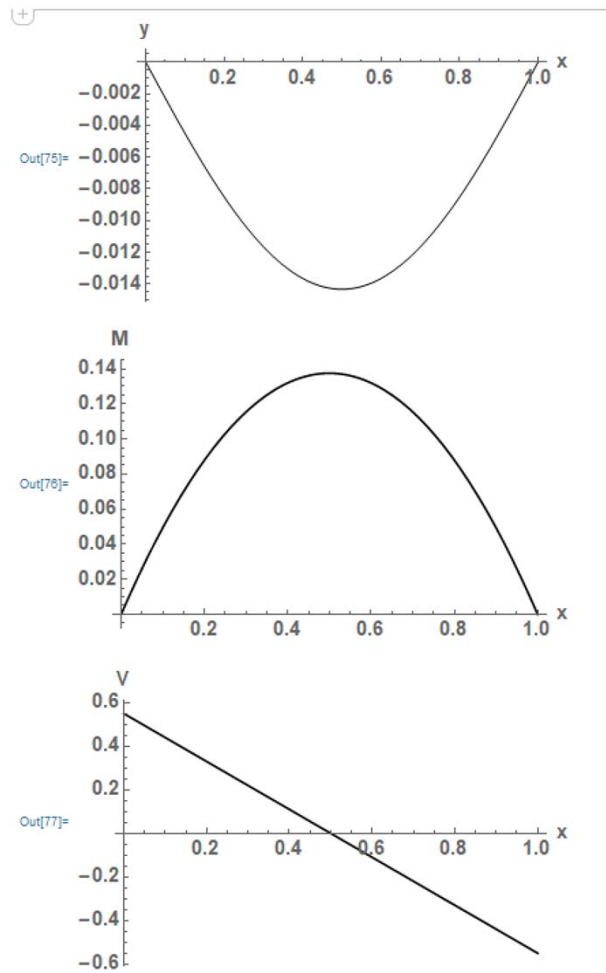
- Tips:

- Students should upload their work. (use **camscanner**)  
<https://www.camscanner.com/>
- Questions should be different among students
- **Trust** your students
- **Don't** curve



E.g.: Find  $y, M, V$  for a simply supported beam

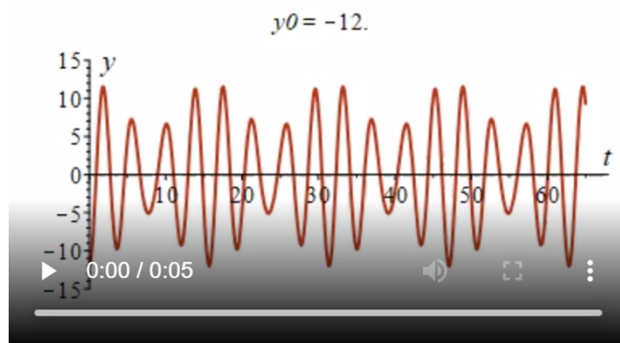
# Long Answer Assessments



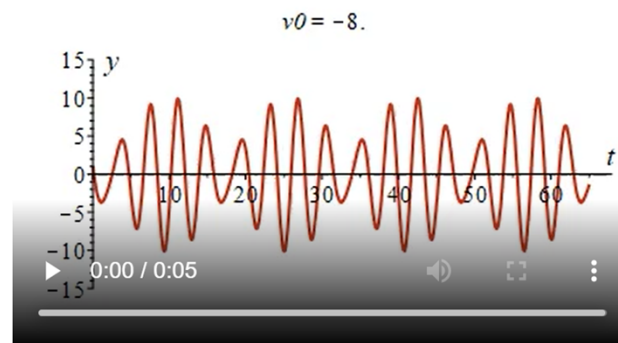
# Long Answer Assessments

- Mobius system: <https://www.digitaled.com/demo>
- (\$30.00 per student)

i.e.,  $\omega_0^2 = 2.56$ ,  $\zeta = 0$ ,  $f_0 = 5$ , and  $\omega = 2$ .



**Figure 4.5.6a: Varying initial displacement**  
 $y_0, (v_0 = 1)$



**Figure 4.5.6b: Varying initial velocity**  
 $v_0, (y_0 = 1)$

Decide whether the statements below are true or false.

1. The graph of  $y(t)$  for  $v_0$  is the reflection of the graph for  $-v_0$ .  
☐ (a) True    ☐ (b) False
2. The phase angle  $\phi$  is only zero when the initial condition  $y_0$  is zero.  
☐ (a) True    ☐ (b) False
3. The solutions have greater amplitudes for larger magnitudes of  $y_0$  and  $v_0$ .  
☐ (a) True    ☐ (b) False

# Marking Assessments

- Mobius does automatic marking (See previous slide)
- Crowmark is a great tool for assignment marking through eclass:
  - <https://crowdmark.com/>

MISCELLANEOUS

( 51 )

# CamScanner

- Tool for students to scan their assignments and convert them into PDF with their phones:
- <https://www.camscanner.com/>



# Privacy and Security

- <https://www.ualberta.ca/chief-information-security-officer/online-meetings-and-classes/index.html>

# Copyright Issues

- <https://www.ualberta.ca/faculty-and-staff/copyright/intro-to-copyright-law/substantiality.html>

# A decision to be indecisive

- <https://www.mcsweeneys.net/articles/a-note-from-your-university-about-its-plans-for-next-semester>

# RECOMMENDATION

# 5 Low-Tech, Time-Saving Ways to Teach Online<sup>(1)</sup>

- 1: Post static content for students to read and watch.
- 2: Use the quiz and assignment functions in your campus LMS to make sure they're doing the reading.
- 3: Wake up to the learning potential of asynchronous text discussions.
- 4: Create a routine, reliable weekly schedule.
- 5: Make frequent, strategic, and highly visible appearances online.

(1) <https://www.chronicle.com/article/5-Low-Tech-Time-Saving-Ways/248519>

# My Recommendation

- (Re)Design the layout of the course in advance including:
  - Lectures asynchronous and synchronous content
  - Seminar and Lab content and layout
  - Assignments and labs.
- My recommended layout (applicable to lectures, labs, and seminars):
  - Pre-record asynchronous lecture
  - Setup Zoom synchronous lecture with the following layout:
    - Quick summary of main concepts
    - Quizzes to assess students
    - Presentation of the model answers of quizzes

# Success in any Pedagogical Form:

- Organization
- Conspicuity
- Perspicuity

# Possible Tutorials

- Dr. Japan Trivedi: Asynchronous content using advanced tools
- Samer Adeeb: Asynchronous content using PPT and screen capture software
- Samer Adeeb: Assessments using eclass



# Available Tutorials from CTL

- Tips when lecturing live using Zoom (Updated April 2, 2020)
- <https://www.youtube.com/watch?v=Y3cb-hKwimM&feature=youtu.be>
- Creating community remotely
- <https://drive.google.com/file/d/18kYd3FyVUftWpCU8cLg2O0VuFyhYgYf4/view>

# Experience from CivE 381 Summer 2020

- Dr. Elena Zabalotnii provided her experience with teaching this summer.
- A PDF is posted but the key highlights:
  - Enforce using Camscanner
  - Some eclass bugs
  - Interactive components are a must

FINAL THOUGHTS

# Death of the Brick and Mortar University/Office?

- *“Traditional students have overwhelmingly made clear that they prefer the brick-and-mortar educational experience, in which schedules are set, they can see professors in person both inside and outside of class, and they have more opportunities to engage with other students. These students want to get out of the family home (and for some moms and dads, I am sure, the feeling is mutual).”<sup>(1)</sup>*
- *“The desire of bright young people from all over the world for an on-campus education remains strong. Unless you have been drinking the disruptors’ Kool-Aid (or is it now hydroxychloroquine?), it should be clear that the disappointment of students this spring isn’t because the features of Zoom aren’t cool enough. It’s because they recognize that carving out a space and time for learning together in a setting that amplifies understanding and inquiry is deeply satisfying.”*

(1) <https://www.chronicle.com/article/A-Fall-Unlike-Any-I-Have/248772?key=3nPk8ajeoU0Dy8ZoVQauE-kW5LFDnkYnPFpXbkDhkMUEJ9PjAp0kHCmA6FnHINTNYmw2UHoycVVmUFd0ZU9ISlhnZk1TLWRsdIFuR1pYUnZYcmkyYIVta20wdw>

(2) <https://www.chronicle.com/article/Beware-the-Doyens-of/248868?key=LwO6j3K0mIGHYkT3aRWpxL8AQxHIUsVz-x1FFO3NL9j3G3muwCTodM4k7MmiOZF5MGg5V0Fnd2F2RTNkb2wtV2xZbHVleXpjdTJKQ2IaU1AtQXYzUnRWQmluaw>

# Death of the Brick and Mortar University/Office?

## Death of the office

As the pandemic leaves offices around the world empty, Catherine Nixey asks what was the point of them anyway?



(1) <https://www.1843magazine.com/features/death-of-the-office>

# Attendees

- Rick Chalaturnyk
- Yang Liu
- Karim El-Basyouny
- Hassan Dehghanpour
- Tae Kwon
- Yuxiang Chen
- Carlos Cruz Noguez
- Chui
- Thian Gan
- Mustafa Gul
- Ania Ulrich (Torrey Dance)
- Wei Victor Liu
- Yaman Boluk.
- Yong Li
- Zaher hashisho
- Jeff Boisvert
- Yashar Pourrahimian
- Ergun Kuru
- Ahmed Hammad
- Ian Buchanan
- Leila Hashemian
- Douglas Tomlinson
- Maricor Arlos
- Tong Yu
- Japan Trivedi
- Robert Hall
- Mark Loewen
- Andy Li