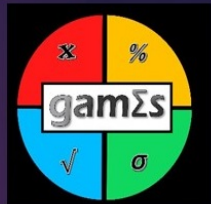


Gentle  
Approach to  
Math,  
Excel,  
Stats:

Useful Tools for  
Business, Economics, and  
the Social Sciences



**Campus Ontario:  
VLS Collection Open House**

Sumon Majumdar (Queen's U)

Robert J McKeown (York U)

Catherine Pfaff (Queen's U)

# Today's Takeaways



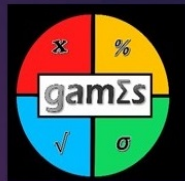
- GAMES is a free open-education resource (OER) for university-level economics, business, and social sciences.
- It covers algebra, calculus, probability, and statistics using interactive videos and exercises.
- All resources are available through eClass and York Space.

# Today's Takeaways



- GAMES assumes little about learner preparedness making it ideal for many different situations.
- It includes real world examples to encourage curiosity.
- Funding was provided by eCampusOntario's Virtual Learning Strategy (VLS).

# The GAMES Team



Diverse backgrounds and teaching experience

# Objectives



**Diversity in coverage:** Not yet another math course

- A free open-education resource that promotes numeracy skills required for success in university-level economics, business, and the social sciences.

# Objectives



**Diversity in coverage:** Not yet another math course

- A free open-education resource that promotes numeracy skills required for success in university-level economics, business, and the social sciences.

**Diversity in Appeal:** This “gentle” approach assumes little about student preparedness, making it ideal for a diverse set of learners:

- entering first-year university or college,
- re-entering higher education,
- planning to upskill (e.g., switch majors),
- who are preparing for graduate school.

# Creation process



- **What to include:** Identify Math, Stat requirements for university students in a variety of social sciences areas: Talked with Experts

# Creation process



- **What to include:** Identify Math, Stat requirements for university students in a variety of social sciences areas: Talked with Experts
- **How to include:** Lecture material, lecture videos, embedded questions, practice problems, quizzes, and tests
- **Nitty-gritty details:** How to distribute the topics, hire student assistants, post-production help
- **The actual work:** ...hours of video lectures, ...embedded questions, ...practice problems – thankfully it was a team of three.

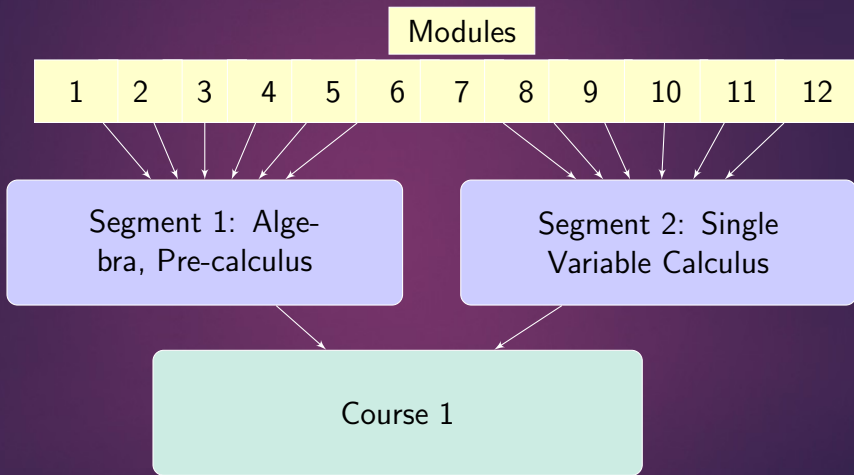


# GAMES – the Finished Product

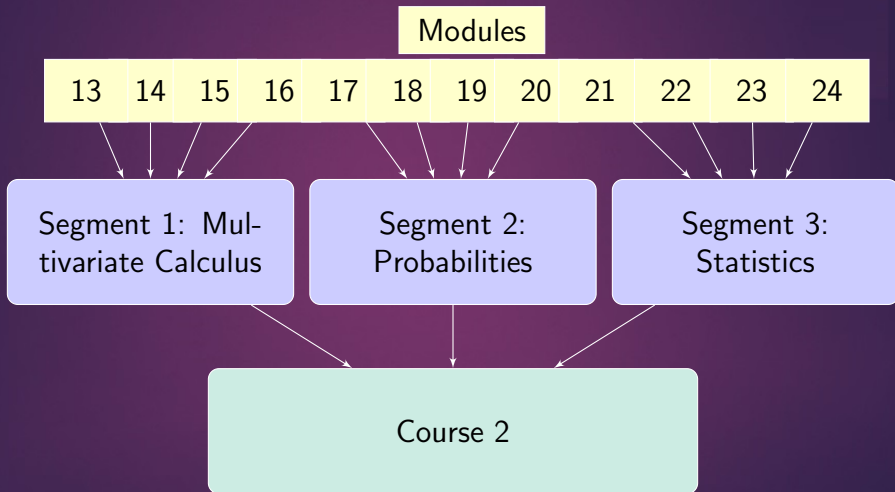


- Topics include algebra, calculus, probability, and statistics.
- Spreadsheet software (Excel, Google Sheets) is used extensively to develop and promote data analysis.
- A modular design allows instructors and students to easily select topics of interest.
- Consists of 24-modules grouped into 5 segments and two courses.

# GAMES Framework



# GAMES Framework



# Resources for Educators and Learners



Each module contains:

- Learning objectives
- Videos include embedded questions that are automatically graded
- Close-captioning
- Full lecture transcripts
- Blank and annotated lecture slides
- Practice problems and solutions including spreadsheets (.xls .ods)

Find our resources on York Space



<https://yorkspace.library.yorku.ca/xmlui/handle/10315/39774>

## Find our resources on eClass



- eClass Course 1: <https://eclass.yorku.ca/course/view.php?id=55893>
- eClass Course 2: <https://eclass.yorku.ca/course/view.php?id=61624>

# Mini-Course – Introduction to Statistics



- Gamification: GAMES Intro to Stats mini-course (4 weeks).
- Introduces visualizing data, descriptive statistics, linear regression, and hypothesis testing.

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- Introduces visualizing data, descriptive statistics, linear regression, and hypothesis testing.
- New practice problems in eClass quiz format:
  - Automatic grading,
  - Random parameters.
- Students have the chance to work on statistics without begin graded.



# GAMES – Introduction to Statistics



<https://eclass.yorku.ca/course/view.php?id=78597>

# GAMES Demo



# GAMES



- is a free open-education resource (OER) for university-level economics, business, and social sciences.
- covers algebra, calculus, probability, and statistics using interactive videos and exercises.
- assumes little about student preparedness making it ideal for incoming students.
- includes real world examples to encourage curiosity.

# GAMES



- Collaborations are welcome.
- Contact Robert J. McKeown: [mckeow99@yorku.ca](mailto:mckeow99@yorku.ca)



York Space Resources



GAMES Intro to Stats