

# Teaching Dossier

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## Contents

<b>1</b>	<b>Teaching Statement</b>	<b>2</b>
<b>2</b>	<b>Past Teaching</b>	<b>4</b>
2.1	Sample Lecture Videos . . . . .	4
<b>3</b>	<b>Contributions to Teaching</b>	<b>7</b>
<b>4</b>	<b>Professional Development and Outreach</b>	<b>10</b>
<b>5</b>	<b>Evaluations</b>	<b>12</b>
5.1	Wilfrid Laurier University Individual Results 2018-2019 . . . . .	12
<b>6</b>	<b>Sample Course Material</b>	<b>17</b>
6.1	SC101 Essential Skills for Mathematics . . . . .	17
6.2	MTH260 Introduction to Mathematical Inquiry . . . . .	29
6.3	CP367 System Programming Winter 2019 . . . . .	41
<b>7</b>	<b>Appendix</b>	<b>64</b>
7.1	Proof of Degrees . . . . .	64
7.2	Course Evaluations – Full 56 pages . . . . .	66

## 1 Teaching Statement

When students are able to appreciate the beauty of mathematics they are able to utilize its strength and rigour to achieve their potential and solve complex problems. Over the past ten years, I have accumulated more than 10,000 hours of teaching experience. There are three main pillars to my philosophy of mathematics education. First, math is inherently accessible but must be taught in a way that addresses each student's way of thinking. Second, the opportunities that open up through studying mathematics easily help motivate students to continue and love math. Third and last of all, I believe the biggest hurdle to learning mathematics is internalized anxiety about the subject being difficult. Once students are able to overcome this anxiety they are able to grow and discover math on their own.

### **Accessible Explanations in Mathematics**

Throughout the years, I have learned to assess the need of students from the front of the classroom whether I am working with a handful of students or in front of a 100 person lecture. Whenever I am in front of students, I make sure to use a variety of techniques and explanations in order to address every learning style. Through examining facial expressions and frequently asking for precise feedback (eg. "what is the definition of continuity", and not "do you understand"), I am able to gauge the level of understanding and tailor explanations and examples to the needs of the classroom. In particular, this leads to further accessibility of deep rigour in mathematics. In the first day of pre-calculus, I always begin with a discussion on the Fundamental Theorem of Arithmetic – that every integer has a unique prime factorization. This complex sounding terminology occasionally scares students, but learning the simple concept in an accessible way sets students up for success. They are able to realize that they are capable of learning difficult concepts.

The feedback loop that is created in my classrooms means that each time I am in front of the class, my explanations and my examples will be different. There are many different ways students prefer to absorb knowledge [4]. By consistently varying my teaching and including a balance of note writing, activities/examples, and verbal explanations, many different students will be able to follow and understand. Additionally, the idea that students are exclusively verbal, kinesthetic, or aural learners is outdated, it is important to encourage students to continually explore a variety of study strategies [4].

### **Mathematical Motivation**

The beauty and usefulness of mathematics can be utilized across disciplines – from using the logic and critical thinking to analyze court cases and criminology studies, to applying differential equations to understand the growth of populations in biology. Every student that signs up for a math course has some motivation for showing up on that first day. Once they arrive, I work hard to encourage students to continue striving for success in mathematics. This often comes in the form of encouragement and understanding in the classroom. From the front of the class I show students that I am friendly and approachable, and from there help to bridge the gap of encouragement. These ideas are supported in the research [1,2,3].

Additionally, I always provide students opportunities to give me feedback on my lessons. In doing this, students find that they have more connection to the material and feel a greater sense of responsibility which helps foster motivation [2]. During my System Programming course in Winter 2019, I began the course by asking students what they wanted to learn throughout the semester.

This helped me guide the lessons to what students needed to know. By the end of the semester I made sure I covered every single topic at some point. In fact, one student wanted to learn how to “hack the pentagon,” and on our last day of class we combined every main topic from the term to create a program that ran graphics of fake hacking. This engagement with curriculum and connection to learning helped students stay connected to the material and take ownership of their own learning. Throughout the semester, just before the midterm, I asked the students to submit an anonymous survey to evaluate my teaching and ask for improvement. Students noted that I did not leave my slides up for long enough to copy down and that by not posting the slides they had a hard time reviewing material they may have missed. This led to me posting small summaries of my lectures at the end of each week of class. Students found this helpful and supportive.

### **Increasing Confidence and Self-Assurance in Mathematics**

I always foster a safe and supportive environment for asking questions and making mistakes. Making mistakes is, in my opinion, the best way to learn math and to investigate the world around us. For many students, making mistakes is the scariest part of mathematics, so I always encourage new ways of looking at mistakes as stepping stones to success. Encouragement aids in learning [3]. I do this through student self-evaluations and test error analyses where I ask students to step through their solution, figure out where the mistake occurs, and how to avoid the mistake in the future. This was particularly useful in MA238 in Fall 2020 during the pandemic. The error analysis was revered by students as a huge support after the first midterm. After this assignment, students performed significantly better on the second midterm. Students gained accountability for their own learning, and gave them a pathway to success. This method of addressing one’s own strengths and weaknesses helps students take responsibility of their learning while encouraging further study, which has been shown to increase overall success [2,3].

Overall I have three main philosophies when it comes to teaching. First, I believe that every student has some intrinsic math ability that, with the right teacher, can come out and help the student succeed even beyond the walls of a math classroom. Second, math is a beautiful subject that can help us unlock truths from the world around us. Lastly, I believe that the best way to teach is to help students on their own journey to discovering the beauty of math. A good math teacher can become a great math teacher by listening to students and trying to understand their solutions from their point of view. There is never just one way to come to any math conclusion, and that is true in every level of math class.

### **References**

- [1] L. Baum, Enthusiasm in Teaching, *Political Science & Politics* **35** (2002) 87-90.
- [2] A. Cook-Sather, Students as Learners and Teachers: Taking Responsibility, Transforming Education, and Redefining Accountability, *Scholarship, Research, and Creative Work at Bryn Mawr College* (2010).
- [3] M.E.P. Seligman et al., Positive education: positive psychology and classroom interventions, *Oxford Review of Education* **35** (2009) 293-311.
- [4] H. Pashler et al., Learning Styles: Concepts and Evidence, *Psychological Science in the Public Interest* **9** (2008) 106-119.

## 2 Past Teaching

### 2.1 Sample Lecture Videos

You can find a selection of videos of my teaching at the following google drive link. This drive contains a number of samples of my teaching across a variety of courses. There are four different methods of instruction and videography: screen capture for powerpoint and coding, tablet handwritten examples, youtube, and video lecture. In the README file, you will find a detailed description of each video present.

*[tinyurl.com/32qk8q6h](https://tinyurl.com/32qk8q6h)*

### University Courses Taught

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#### WILFRID LAURIER UNIVERSITY

Fall 2020                      MA238 DISCRETE MATHEMATICS I, LABORATORY INSTRUCTOR

In this course, I was responsible for creating all tutorial content and assessments. I also helped the primary instructor with the transition to the online method. The bi-weekly quizzes were given in the lab, and I coordinated with a TA grader each week. During this course, I helped students prepare for both midterms and the final exam. The course covers topics from introductory graph theory, basic counting principles, and induction proofs.

Course Description: Basic graph theory, Euler circuits and Hamilton cycles in graphs, planar graphs, graph colouring, trees, relations, partial orders, introduction to counting, recurrence relations, inclusion-exclusion.

Spring 2019                      CP 493 DIRECTED RESEARCH PROJECT I

Throughout this course, my undergraduate student was introduced to all aspects of academic research, including a literature review of peer-reviewed research, a thorough understanding of academic writing, and some introductory research problems. We studied cryptosystems and network searching, specifically the game of Cops and Robbers. The goal of the project was to utilize the complexity of network searching as a form of secure cryptography. The student produced a small report on the project including a detailed literature review, an explanation of the project, and some preliminary results.

Course Description: An in-depth investigation of a computer science subject under faculty supervision, including the submission of a formal report.

Winter 2019                      CP 367 SYSTEM PROGRAMMING

I coordinated all course material and assessments, and I ran weekly lab sessions where I updated existing lab material to reflect the current course content. The course materials I had access to were from an earlier calendar description, so I needed to update the course calendar, the textbook readings, etc. to reflect the new course. This involved reviewing the textbook readings and assigning a new open source textbook that more accurately reflected the way programmers use Linux in the workplace today.

Course Description: Contemporary ideas and techniques in system programming using the C language. Introduction to the Unix operating system and Unix commands. Directories and files,

device control, signal handling, process intercommunication, shell programming in Unix. Using and implementing software tools: filters, pipelines, sorts, text patterns and others.

Fall 2018

SC101 ESSENTIAL SKILLS FOR MATHEMATICS

I worked very closely with the other course coordinator for this course. Together we designed a pacing guide for this new course and determined all learning outcomes. Each test was written together, with more of an emphasis for my part residing on the final exam, and the other coordinator's focus was on the midterms. The course outline and the final exam are included in this teaching dossier.

Course Description: Thorough review of pre-university skills in algebra, trigonometry and functions. Topics discussed will include: algebraic manipulations used to simplify expressions and solve equations and inequalities; analytic geometry; and polynomial, rational, exponential, logarithmic and trigonometric functions. Also integrated with the course content will be discussion of specific learning strategies to help students with the transition from high school mathematics to university level expectations. The course will not count towards satisfying program requirements in mathematics.

## University Courses Assisted

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### RYERSON UNIVERSITY

Spring 2019	MTH425 Differential Equations and Vector Calculus
	MTH510 Numerical Analysis
Winter 2019	MTH599 Foundations of Mathematical Thought
Fall 2018	AM8002 Graduate Discrete Mathematics
Summer 2018	MTH240 Calculus II for Engineers

### AIMS CAMEROON

Winter 2018	Modeling Networks
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### RYERSON UNIVERSITY

Winter 2018	MTH310 Calculus and Computational Methods II
Fall 2017	MTH207 Calculus and Computational Methods
	MTH560 Problem Solving

### UNIVERSITY OF WATERLOO

Winter 2017	MATH138 Calculus II
Fall 2016	MATH138 Calculus II

### RYERSON UNIVERSITY

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Winter 2016	MTH312 Differential Equations and Vector Calculus
	MTH607 Graph Theory
Fall 2015	MTH525 Real Analysis
	MTH108 Linear Algebra
	MTH231 Modern Math II
Winter 2015	MTH607 Graph Theory
	MTH617 Abstract Algebra
	MTH231 Modern Math II
	MTH210 Discrete Math II
Fall 2014	MTH110 Discrete Math I
	MTH131 Modern Math I

#### WILFRID LAURIER UNIVERSITY

Winter 2014	MA104 Calculus II
Winter 2013	MA104 Calculus II
Fall 2012	MA104 Calculus II
Winter 2012	MA100 Introduction to Calculus for Natural Sciences

### High School Courses Taught

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#### BLYTH ACADEMY

Spring 2018	MHF4U Advanced Functions
Summer 2017	MCR3U/MCF3M Functions/Functions and Applications, Mixed Classroom
	MDM4U Data Management, Substitute - One Week
	MCV4U Calculus and Vectors
Winter 2017	MCR3U Functions
	MCF3M Functions and Applications
	MHF4U Advanced Functions
Summer 2016	MCR3U Functions, Half-Course
	MCV4U Calculus and Vectors, Half-Course
Winter 2016	MDM4U Data Management
	MHF4U Advanced Functions

### 3 Contributions to Teaching

#### Curriculum Design

MTH260 Introduction to Mathematical Inquiry, Ryerson University

Working with a variety of proofs courses over the years, I noticed that the algebra and analysis students were deeply lacking in fundamental proof writing skills and logical ability. I determined the missing areas of learning, and the appropriate learning outcomes on my own by assessing and examining the outer courses offered in this department.

I proposed this course to the chair of the department (Dr. Larry Kolasa, a reference included with this application), where the course was put forth to the curriculum committee. The course was accepted with no revisions, and is currently taught using the same materials first proposed. In the 2019-2020 academic calendar the course was offered for the first time as an elective, and in the 2020-2021 academic calendar the course has become a mandatory course for second year mathematics students.

Course Description: This course is about proof methodologies and mathematical writing motivated by concepts covered in the prerequisites with a focus on recognizing and writing rigorous mathematical proofs. Topics used as a vehicle for proof writing include set theory, number theory, and analysis. Special emphasis is placed on epsilon-delta proofs.

#### Teaching Presentations and Workshops

E. Meger, *Microlessons and Active Learning*, Mount Allison University (2020)

This three hour training workshop was provided to math and computer science teaching assistants at Mount Allison University during my postdoc prior to the school closure in 2020. This was held in person.

The three learning outcomes of the workshop were: identify principles of active learning, create and present microlessons to peers, and to identify examples of active learning. MicroLessons are short lessons lasting only a few minutes focusing on one specific topic, and active learning principles were taught and used throughout. The slides for this workshop are available on my website.

E. Meger, W. Freeman, M. Schwartz, A. Ludbrook, *Ryerson Open Moments Book Launch*, Presentation, Ryerson OER Week (2020)

E. Meger, W. Freeman, M. Schwartz, A. Ludbrook, *Creating Value for Open Educational Practice*, Technology and Education Seminar and Showcase (TESS), eCampus Ontario (2019)

Abstract: In this presentation, we adopt a framework developed by Sinkinson et al. to explore whether engaging in the process of open educational resource creation can lead participants towards values consistent with open pedagogy. Sinkinson et al. identified four values for open pedagogy: access and equity, agency and ownership, community and connection, and opportunity and risk. We conducted interviews with Ryerson faculty members who held eCampusOntario grants to develop OER. While faculty most often approached OER creation through a lens of access and equity, the process of OER creation led to a more nuanced understanding of open education as a practice.

W. Freeman, E. Meger *Broadening Voices with Open Workshop* World Cities World Class Symposium, St Petersburg (2019)

Abstract: Cities are animated by the flow of new ideas, new cultures, creative expression, continually shaping culture and knowledge. Within the urban university, however, the traditions of teaching and research can keep student voices at the margins of knowledge creation. A primary critique of the university is that it is resistant to change and digital education is often presented as a disruptive innovation. Can digital education open opportunities for the same flow of new ideas, cultures, and creative expression that gives all voices a place?

This workshop will explore the question How can digital education shape the academy to include the student voice in knowledge creation? Participants will consider the many ways that the academy might be shaped including in the design and implementation of educational technology, pedagogy, educational structures, and intellectual property and licensing methods to discover the innovation possibilities in digital education. To explore this question, students will work together to create an openly licensed digital resource with stories of innovation in digital education that inclusively invites participation in knowledge creation by students within the academy.

E. Meger, W. Freeman, M. Schwartz, A. Ludbrook, *Ryerson Open Moments*, Learning and Teaching Office, Presentation, Learning and Teaching Conference (2019)

Abstract:

In recent years, the development and use of Open Education Resources (OER) and Open Educational Practices (OEP) has been encouraged through a number of initiatives here at Ryerson. The Ryerson Open Moments project wants to raise awareness of OEP and OER by showing the value of participation in open projects for faculty, instructors, and students, and by sharing and illustrating open education strategies in an accessible and compelling manner. Through interviews with faculty involved with these projects, we have curated a collection of stories regarding the use of OER and OEP at Ryerson. In this talk, we will present some of the initial themes and results from these interviews. Preliminary findings suggest that while expectations for getting involved with OER and OEP vary, the values of student-centered learning and teaching are constant. The final deliverable for the project - an open book entitled *Ryerson Open Moments: Case Studies in Open Educational Practice at Ryerson* - will reinforce these ideas as it will model through its content, form and distribution the core principles of open education.

## Textbooks and Course Notes

RYERSON OPEN MOMENTS E. Meger, W. Freeman, M. Schwartz, A. Ludbrook, and M. Glynn, Ryerson University Press (2020)

Ryerson Open Moments is a book that describes the journeys of eight educators who came to discover open education through projects in which they developed open educational resources. Each of these stories recounts a different journey towards open and what open education comes to mean for each of our storytellers. These stories vary based on their goals, their experiences of teaching, and the types of projects they pursued.

MODELLING AND SEARCHING NETWORKS, A. Bonato, E. Meger, and D. Moghbel, Pre-Print (2018)

This book is under major revision prior to resubmission with Cambridge University Press in the AIMS Series. It was written to supplant the course of the same name taught by A. Bonato and



myself in 2018 at the African Institute for Mathematical Sciences (AIMS) Cameroon. The book is aimed at a Masters-level graduate student or advanced undergraduates in Mathematics.

Abstract: The proposed book *Modelling and Searching Networks* focuses on the mathematical properties of real-world networks that are expected to be large-scale and dynamic, and where agents can be probabilistic, decentralized, and even selfish or antagonistic. As such, book outlines material at the intersection of complex networks and graph searching. Both topics are rapidly expanding, and several new models, problems, and approaches have appeared, relating them to diverse fields such as game theory, combinatorics, probabilistic analysis, mobile robotics, and distributed computing.

Complex networks emerge in technological, social, and biological contexts. Web pages and their links, protein-protein interaction networks, and on-line social networks such as Facebook and LinkedIn are some of the commonly studied examples. Several models have been proposed simulating the evolution of complex networks such as the preferential attachment model and the iterated local transitivity model. Graph searching deals with the analysis of games and graph processes that model some form of intrusion in a network, and efforts to eliminate or contain that intrusion. For example, in the game Cops and Robbers, a robber is loose on the network, and a set of cops attempts to capture the robber. Graph searching problems are inspired by foundational issues in computer science, discrete mathematics, and artificial intelligence, such as robotics and network security.

MA103 COURSE NOTES, Wilfrid Laurier University Library (2014)

In 2014 as a research assistant, I helped design and update Dr. Chester Weatherby's handwritten notes and create partially populated slides and coordinating course-pack.

This project was part of the "Success in First Year Math" research done at Wilfrid Laurier University with Dr. D. Woolford, Dr. D. Kostopolos, and Dr. C. Weatherby in the departments of mathematics and education. The goal was to examine the grade and feedback results from two subsequent years of students: one using partially populated slides, and the other using traditional board notes.

Course Description: Limits and continuity; differential and integral calculus of functions of a single variable; the Mean Value Theorem; determination of extrema; the Fundamental Theorem of Calculus and techniques of integration; introduction to partial derivatives.

## 4 Professional Development and Outreach

### Professional Development

#### Courses

##### CILT 100 LEARN AND TEACH IN HIGHER EDUCATION I - Ryerson University

Course description from calendar:

This seminar will introduce registrants to teaching and learning methods in higher education. Through critical analysis of research on higher education, as well as reflection upon one's own teaching experience, participants will engage in their own professional development. This seminar is designed for individuals with all levels of teaching experience who wish to further develop their teaching skills. Topics covered include active learning, inclusivity, information literacy, statements of teaching philosophy, and presentation skills.

##### CILT 105 LEARN AND TEACH IN HIGHER EDUCATION II - Ryerson University

Course description from calendar: This seminar is designed to help prepare participants for an academic career in teaching. Participants are expected to have some experience in teaching at a third-level institution. The overarching goal of this seminar is to allow participants to develop their practical teaching skills. This is achieved through engagement in pedagogical issues pertaining to higher education and the application of practical skills. The framework of this seminar is in the development of a teaching dossier.

##### COURSE INSTRUCTOR APPRENTICESHIP - Ryerson University

During this program, I worked closely with my mentor Dr. Larry Kolasa for MTH207 Calculus I. Together, we designed the second Lab Test and the final exam. For the teaching component, I taught the final two weeks of the course on integration. Given the amount of time, I was able to create long term lesson plans to ensure all content was covered in advance of the final, and I made sure to include a lecture on exam review. This lecture was entirely student run. Beginning with students choosing topics, then groups. At the for the last half of the lecture, students presented a summary, worked through an example, and gave the other students an additional practice problem. While presenting, other students asked questions to solidify their understanding, and I stepped in whenever necessary to ensure accuracy of the review. We were able to fit all the topic summaries and problems across all the many whiteboards in the room. At the end of class we then had a "museum of calculus" which students could walk through and take pictures to then study off of later. Overall, this experience was an excellent introduction to large size (90) calculus classes, and I was lucky to have had excellent feedback from the students regarding my engaging lectures and knowledgability.

#### Workshops

2019 CREATING VALUE FOR OEP, TESS - eCampus Ontario  
 BROADENING VOICES WITH OPEN World Class World Cities  
 LEARNING AND TEACHING CONFERENCE, Ryerson University  
 RESUMES AND COVER LETTERS TRAINING SEMINAR, Ryerson Math Department

- 2018 L<sup>A</sup>T<sub>E</sub>X TRAINING SEMINAR, Ryerson Math Department  
LEARNING AND TEACHING CONFERENCE, Ryerson University
- 2017 UNDERSTANDING ANISHINAABE HISTORY THROUGH WAMPUM BELTS, Ryerson University  
FACILITATING DISCUSSION, Ryerson Learning and Teaching Office  
SUPPORTING YOUR STUDENTS' WELL-BEING, Ryerson Learning and Teaching Office

## Certificates

All certificates are available upon request.

GRADUATE PROFESSIONAL DEVELOPMENT IN TEACHING PROGRAM LEVEL 2  
Ryerson University, 2019

This program involves the completion of coursework and eight hours of workshop attendance. The aim of the program is to teach graduate students the fundamentals of teaching while giving students hands-on applications and practice. This certificate is certified by SEDA UK (Staff and Educational Development Association) who promote innovation and good practice in higher education.

GRADUATE PROFESSIONAL DEVELOPMENT IN TEACHING PROGRAM LEVEL 2  
Ryerson University, 2019

This program involves the completion of coursework and teaching intensive training. The aim of the program is to teach graduate students the theory of learning, and give student advanced practice in teaching. This certificate is certified by SEDA UK.

MY GRAD SKILLS  
Ryerson University, 2018

Each certificate below involved e-learning through text, video, interactive modules, and quizzes.

- Intercultural Competency
- Converting a CV to a Resume
- Academic and Research Integrity

STANDARD FIRST AID INSTRUCTOR, LIFESAVING INSTRUCTOR, AND SWIM INSTRUCTOR  
Lifesaving Society, 2017, 2009 and 2009.

This teaching qualification involves in-class learning and the instruction of a full course under the supervision of a mentor. The certificate allows me to teach each of the above programs for the Royal Lifesaving Society Canada. Many of my current skills of classroom management and engagement come from my years of experience teaching in aquatics. For instance, I often try to get students up and active during lecture, sometimes in the form of mid-exam stretches or sometimes in throwing balls of paper with practice problems or reflections.

## Outreach and Service

- 2019-2021 WOMEN IN COMBINATORICS - Initiator and Coordinator  
2019 SOAPBOX SCIENCE JR. - Speaker  
WATERLOO-WELLINGTON SCIENCE AND ENGINEERING FAIR - Judge  
2015-2018 THEMATHGIRL2718 - YouTube Channel  
2015-2017 SCIENCE RENDEZVOUS - Math Booth Co-coordinator

## 5 Evaluations

### 5.1 Wilfrid Laurier University Individual Results 2018-2019

These are the official university evaluations regarding the instruction and delivery of the following courses:

- SC 101 Essential Skills for Mathematics Sections A and B
- CP 367 System Programming Lecture, Tutorial 1, and Tutorial 2

Please note that MA238 evaluations will not be made available until late Feb 2020. Comprehensive evaluations including program and course description evaluation that are beyond the scope of the instructor are available in the appendix of this document.

In addition, there are two comments in my CP367 evaluations that address some personal comments. There was a large issue in the ethics in computer science course that was running concurrently the same semester. There were some unfortunate situations that arose within the department where students were outwardly racist, sexist, and homophobic, with notice going out to the department regarding these incidents. The week prior to the evaluations, I used one entire class period to give a lecture on Diversity in Computer Science and the slides are available on my website.

<b>Course:</b>	SC101 A - Essential Skills for Math	<b>Department:</b>	MA
<b>Responsible Faculty:</b>	Erin Meger	<b>Responses / Expected:</b>	13 / 28 (46.43%)
<b>Faculty:</b>	Meger, Erin		

**Category/Section: B. Questions about the Instructor/Instructor**

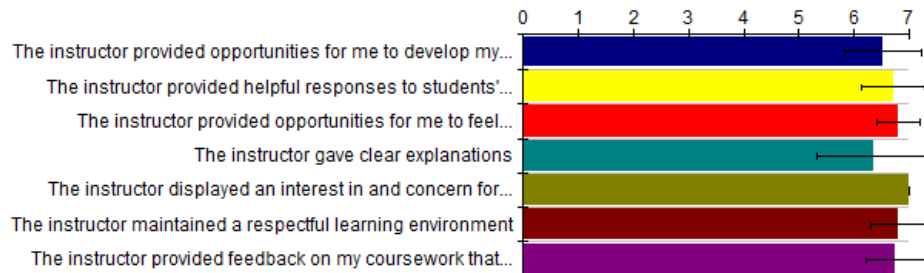
[G] 1=Strongly Disagree [F] 2=2 [E] 3=3 [D] 4=4 [C] 5=5 [B] 6=6 [A] 7=Strongly Agree=7

KEY	Questions	Statistics				Frequency							Response		
		Mean	Med.	Mode	Std Dev	G	F	E	D	C	B	A	Rec.	N/A*	Exp.
	The instructor provided opportunities for me to develop my interest in this subject area	6.5	7	7	.93	-	-	-	1	1	2	9	13	0	28
	The instructor provided helpful responses to students' questions and requests for guidance	6.8	7	7	.58	-	-	-	-	1	1	11	13	0	28
	The instructor provided opportunities for me to feel engaged in the learning process	6.7	7	7	.72	-	-	-	-	2	-	11	13	0	28
	The instructor gave clear explanations	6.5	7	7	.87	-	-	-	-	3	-	9	12	0	28
	The instructor displayed an interest in and concern for student learning in this course	6.8	7	7	.53	-	-	-	-	1	-	12	13	0	28
	The instructor maintained a respectful learning environment	6.8	7	7	.53	-	-	-	-	1	-	12	13	0	28
	The instructor provided feedback on my coursework that helped me improve my understanding	6.7	7	7	.72	-	-	-	-	2	-	11	13	0	28

\*NA responses indicate that the participant felt they did not have the information or experience required to respond to a question.

<b>Faculty:</b>	Meger, Erin
<b>Question:</b>	Comments about the instructor and/or course (Responses will only be seen by the instructor)
<b>Response Rate:</b>	69.23% (9 of 13)
1	Ms. Meger is a very good teacher who really cares about the success of all her students. With regards to how the material was delivered I would have benefited from more taking up of homework problems as a class and less small group work.
2	Very engaging and lovely prof!
3	the prof made math enjoyable gave great lessons that were clear and was always available for extra help which allowed me to succeed in the course
4	Erin has been an incredible professor, especially for the introduction to university. She is kind, caring and passionate about what she teaches and her students. It is very evident that Erin liked to see her students succeed and will teach the content for greatest level of success.
5	The instructor was very good at giving feedback and make room for students to improve and do well
6	Erin created a positive environment and always encouraged learning in the classroom
7	Erin was really good and actually made me understand math
8	Love the passion and drive from this professor :) really helped me find my math in pursuing a bio math major :) very thankful for professor like Erin :)
9	Shes great

<b>Course:</b>	SC101 B - Essential Skills for Math	<b>Department:</b>	MA
<b>Responsible Faculty:</b>	Erin Meger	<b>Responses / Expected:</b>	17 / 26 (65.38%)
<b>Faculty:</b>	Meger, Erin		

**Category/Section: B. Questions about the Instructor/Instructor**

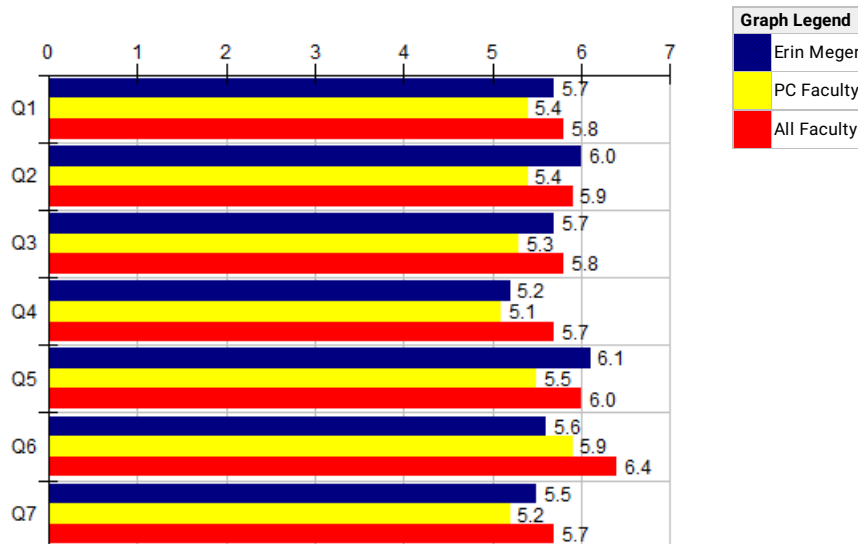
[G] 1=Strongly Disagree [F] 2=2 [E] 3=3 [D] 4=4 [C] 5=5 [B] 6=6 [A] 7=Strongly Agree=7

KEY	Questions	Statistics				Frequency							Response		
		Mean	Med.	Mode	Std Dev	G	F	E	D	C	B	A	Rec.	N/A*	Exp.
	The instructor provided opportunities for me to develop my interest in this subject area	6.5	7	7	.70	-	-	-	-	2	4	11	17	0	26
	The instructor provided helpful responses to students' questions and requests for guidance	6.7	7	7	.57	-	-	-	-	1	3	13	17	0	26
	The instructor provided opportunities for me to feel engaged in the learning process	6.8	7	7	.39	-	-	-	-	-	3	13	16	0	26
	The instructor gave clear explanations	6.4	7	7	1.03	-	-	1	-	1	5	10	17	0	26
	The instructor displayed an interest in and concern for student learning in this course	7	7	7	0	-	-	-	-	-	-	17	17	0	26
	The instructor maintained a respectful learning environment	6.8	7	7	.51	-	-	-	-	1	1	15	17	0	26
	The instructor provided feedback on my coursework that helped me improve my understanding	6.8	7	7	.55	-	-	-	-	1	2	14	17	0	26

\*N/A responses indicate that the participant felt they did not have the information or experience required to respond to a question.

<b>Faculty:</b>	Meger, Erin
<b>Question:</b>	Comments about the instructor and/or course (Responses will only be seen by the instructor)
<b>Response Rate:</b>	35.29% (6 of 17)
1	Best teacher I've had!
2	Really helpful since I hadn't had math in almost 2 years and never took calculus
3	A very nice person, a great teacher, good things all around
4	Erin is always there to help. She always says no matter what time of day, send her an email and she will try to help as best as she can
5	Despite my love of math, this is the first math class in my life that I haven't dreaded going to as I really enjoyed having you as an instructor. I appreciate everything you have done for me, as well as my peers, this semester. Even though I won't be continuing on with math, as I am doing a program change that doesn't require math courses, I feel as though I would've been extremely well prepared to do the MA100 class as a result of your excellent teaching. Thank you once again for an amazing semester!
6	I really loved being in this class and I know my math knowledge has been more solidified. I always felt like I could come to you with questions which I have struggled with in the past. I think this course was taught very well as I know my knowledge on many aspects has been clarified. The only thing I would suggest is spending more in depth time in the trig unit since the only way I was able to really finish this unit's homework was because of my knowledge from grade 12. Otherwise I really enjoyed having you as my instructor!

<b>Course:</b>	CP367 A - Intro to System Programming	<b>Department:</b>	PC
<b>Responsible Faculty:</b>	Erin Meger	<b>Responses / Expected:</b>	21 / 70 (30%)



B. Questions about the Instructor Instructor		Erin Meger										--- Period Comparisons ---							
		Responses					Individual					PC			All				
		1D	2	3	4	5	6	7A	N	Mean	N/A	Med.	Std Dev	N	Mean	--+ <sup>1</sup>	N	Mean	--+ <sup>1</sup>
Q1	The instructor provided opportunities for me to develop my interest in this subject area	2	0	1	1	2	4	11	21	5.7	0	7	1.88	790	5.4	=	25K	5.8	=
Q2	The instructor provided helpful responses to students' questions and requests for guidance	2	0	1	0	1	4	13	21	6.0	0	7	1.86	787	5.4	=	25K	5.9	=
Q3	The instructor provided opportunities for me to feel engaged in the learning process	2	0	0	2	2	5	10	21	5.7	0	6	1.80	782	5.3	=	25K	5.8	=
Q4	The instructor gave clear explanations	2	2	0	2	2	5	8	21	5.2	0	6	2.04	790	5.1	=	25K	5.7	=
Q5	The instructor displayed an interest in and concern for student learning in this course	1	1	0	0	0	7	12	21	6.1	0	7	1.58	789	5.5	=	25K	6.0	=
Q6	The instructor maintained a respectful learning environment	3	1	0	0	1	5	11	21	5.6	0	7	2.17	787	5.9	=	25K	6.4	=
Q7	The instructor provided feedback on my coursework that helped me improve my understanding	1	2	1	1	2	5	9	21	5.5	0	6	1.89	773	5.2	=	24K	5.7	=

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [-] Much Lower, [-] Lower, [=] Similar, [+ ] Higher, [++ ] Much Higher

#### Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor)

<b>Faculty:</b>	Erin Meger
<b>Response Rate:</b>	38.10% (8 of 21)
1	fun course, the instructor was a bit uncertain of the flow of the course and added new labs and assignments (of course, with a suitable notice), overall the instructor did a great job of supplying and teaching all that was needed.
2	We didn't really cover much content in this course. Also that "diversity" lecture at the end was unnecessary and should not have been done in the way that it was.
3	The instructor was very unfocused during class, and would often talk about personal stories unrelated to the course that wasted lecture time. Also, she would often interact with two students in the front of the class that derailed the lecture even further.
4	I enjoy having instructors who are engaged with the material they are teaching. Regardless of the course notes being posted or not, this singlehandedly made the lecture worth going to (to actually listen and join in the class examples, and not just work on other coursework)
5	Highly unprofessional, showed up late more than she showed up on time. Would go on rants about personal opinions with inaccurate data about political subjects. (Relation to learning unix/linux and how white men are oppressive?). When asked a question the response is almost always, "That's a really good question, you should google it." Came unprepared many times for class but complained about personal work load. I know more about her and her car than I know about systems programming. If the answers to all the questions being asked are on the internet then it seems like she wouldn't be necessary and the class shouldn't be offered. Complained often about events that happened among very specific subsets of the students in the faculty and would take it out on them by wasting the class time (that is being paid for by the students), talking about her personal opinion on the matter while directly suppressing the opinions and comments of any student who would even attempt to speak out and clarify the situation. At the end of the last class reminded us that these surveys are "Literally not relevant and used to determine if the professor is a white male, female, or person of colour." Overall, Erin I would recommend you leave your opinions at home so that you can focus on teaching the students who are willing to learn and are paying money to the university for such an opportunity.

6	Good work for Erin's first time teaching at WLU. Very bubbly personality, as well as a strong interest in teaching this field. Very impressed, and we could use more teachers like her here. I only gave her 5's on clear explanations since a bit more preparation could have been used for some linux commands that were demonstrated in class, as well as feedback on course work since assignment marks had close to no feedback and were quite late being returned back to students. (also I gave 4 for project description, because as unique as it is, assigning a picture as an assignment question is very far from clear and concise). All in all, great work.
7	Fun professor that was passionate about the course.
8	Erin is a very good instructor and I hope that she will remain a Computer Science instructor at Laurier. The course could be a little more organized at times, the sporadic assignments stress me out.



## 6 Sample Course Material

### 6.1 SC101 Essential Skills for Mathematics

#### SC101 Final Exam Fall 2018

SC101 Essential Skills for Mathematics, Wilfrid Laurier University

The following exam was written through close collaboration between myself and the instructor of record for the other section, Katie McGarry. We both used our experience teaching high school courses and university tutorials to create the exam. This exam was written mostly by myself with some suggestions and critiques from Katie, as Katie wrote the majority of the midterm. The entire course was designed and executed by the both of us.

#### Error Analysis Assignment

Following the exam, you will find the Error Analysis Assignment. This assignment was used in both SC101 Fall 2018 and in MA238 Fall 2020, and the copy presented is from SC101. The assignment was given to students with the grade being additional marks on the scoring of the midterm exam. This was an opportunity for students to continue to grow in their understanding of the course material. It was well-received in both courses and was pin-pointed as a turning point for many students in the online Ma238 in Fall 2020 who were also coping with the strain of the pandemic while doing online education.

- [20 marks] 1. For each of the following write a short answer. Show all of your work and write your answer *exactly* unless otherwise specified. (2 marks each).

(a) Evaluate  $\left(\frac{1}{2} - \frac{1}{3}\right)^{-1}$

(b) Simplify  $(\sqrt{3} - 2\sqrt{3})^2$

(c) Factor fully:  $4x^2 - 9$

(d) Solve  $|x| \geq 1$ . Express your answer in interval notation.

(e) Simplify  $\frac{1}{x} + \frac{1}{2-x}$

(f) Determine if  $f(x) = \sqrt{x^2 + 1}$  is even, odd, or neither.

(g) Evaluate exactly:

i.  $\log_6(4) + \log_6(54)$

ii.  $\ln \frac{1}{e^2}$

(h) Rewrite:

i.  $3 = \log_2 8$  in exponential form

ii.  $\frac{1}{81} = 3^{-4}$  in logarithmic form

(i) Convert exactly:

i.  $240^\circ$  to radians

ii.  $\frac{5\pi}{6}$  radians to degrees

(j) Evaluate the following to one decimal place.

i.  $\sin(215^\circ)$

ii.  $\cos\left(\frac{\pi}{3}\right)$

- [4 marks] 2. Find the equation of the line that passes through the points  $(1, 3\sqrt{2})$  and  $(0, 2\sqrt{2})$ . Express your answer in **point-slope form**.

- [8 marks] 3. Consider the functions

$$f(x) = \sqrt{x+2} \quad \text{and} \quad g(x) = \frac{1}{2x} \quad \text{and} \quad h(x) = x^2 - 2$$

- (a) Find the domain of  $(f+g)(x)$ . Express your answer using interval notation.

- (b) Find  $(g \circ f)(x)$  and state the domain in interval notation.

- (c) Find and simplify  $(f \circ h)(x)$ .

- (d) Find and simplify  $(h \circ f \circ g)(x)$ .

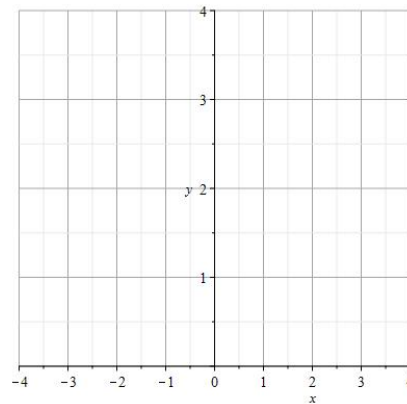
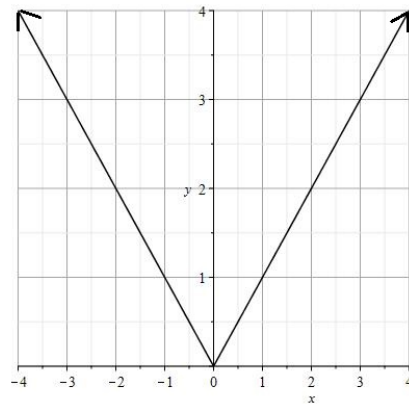
- [3 marks] 4. Consider the function  $F(x) = \frac{\sqrt{x} + 1}{2(\sqrt{x} + 1) - 1}$ . Find two functions  $f(x)$  and  $g(x)$  such that  $F(x) = (f \circ g)(x)$ . **Check** your answer using function composition.

- [5 marks] 5. Given the invertible function  $f(x) = \frac{2x}{1 - 5x}$ , find and simplify the formula for the inverse function  $y = f^{-1}(x)$ . You do not need to state the domain of the inverse function.

- [4 marks] 6. Evaluate and simplify the difference quotient,  $\frac{f(x+h) - f(x)}{h}$ , for  $f(x) = 3x^2 + 1$

- [4 marks] 7. Pooja and Christian have re-opened their coffee shop just in time for finals! They sell regular espresso for 50 cents per shot, drip coffee for \$1.75, and the festive Peppermint Mocha for \$4.25. They sell three times as many espresso shots as they do orders of drip coffee, and they sell twice as many drip coffees as they do peppermint mochas. This week they made \$387. How many of each type of beverage did they sell?

- [3 marks] 8. The graph of  $y = f(x)$  is given. Use it to graph  $y = f(x - 2) + 1$  on the axes provided.



- [3 marks] 9. Use the properties of logarithms to expand and simplify the following expression.

$$\log_3 \left( \frac{x^2}{81y^4} \right)$$

- [3 marks] 10. Write the following expression as a single logarithm

$$\ln(x) - 3 \ln(z) + \frac{1}{2} \ln(y)$$

- [4 marks] 11. Solve **ONE** of the following equations for  $x$ .

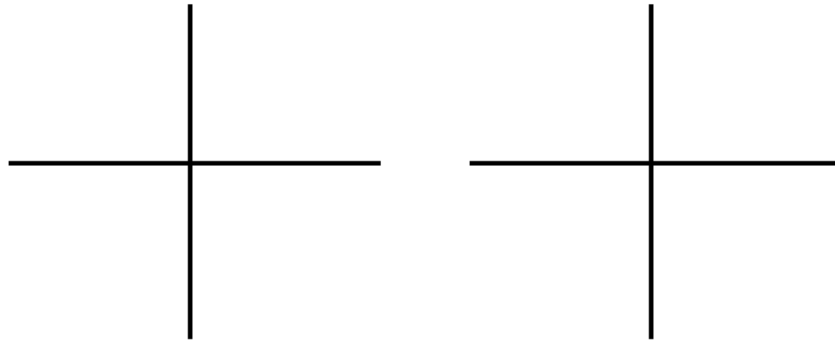
$$8^{x^2} = 2^{2x+5} \quad \text{OR} \quad \log_5(2x-1) + \log_5(x-2) = 1$$

[2 marks] 12. Draw the two “special triangles,” in radians, used to determine trigonometric ratios.

[5 marks] 13. (a) Draw the following angles in standard form on the axes provided.

(i)  $\frac{4\pi}{3}$

(ii)  $-\frac{7\pi}{4}$



(b) Find the primary trig ratios of **ONE** of the two angles in (a). Evaluate exactly using the CAST rule and special triangles.



[3 marks] 14. If  $\cos(\theta) = -\frac{12}{13}$  with  $\theta$  in Quadrant II, what is  $\sin(\theta)$ ?

[6 marks] 15. Find all of the angles  $\theta$ , with  $0 \leq \theta \leq 2\pi$ , which satisfy the following equations.

(a)  $\sin(\theta) = \frac{\sqrt{3}}{2}$

(b)  $\tan(\theta) = -\sqrt{3}$

(c)  $\sec(\theta) = 2$

[2 marks] 16. For the following trigonometric function, state each transformation in the space provided.

$$y = -\frac{3}{2} \cos\left(2\left(x + \frac{\pi}{6}\right)\right) - \frac{1}{2}$$

amplitude: \_\_\_\_\_

period: \_\_\_\_\_

phase shift: \_\_\_\_\_

vertical shift: \_\_\_\_\_

- [6 marks] 17. The population (in thousands) of northern pike fish in Laurel Creek can be modeled by the following function:

$$P(t) = \frac{120}{1 + 3.167e^{-0.05t}}$$

where  $P(t)$  is the population (in thousands) of pike  $t$  years after 2010.

- (a) Find the population of pike in Laurel Creek in the year 2010 ( $t = 0$ ). Round your answer to the nearest thousand.
- (b) Find the population of pike in Laurel Creek in 2013. Round your answer to the nearest thousand.
- (c) When will the population of pike in Laurel Creek reach 60 000? Round your answer to the nearest year.

**Test 1 Error Analysis Assignment (Optional)**

Due Date: Beginning of class on Friday, October 26 (late submissions will not be accepted)

Worth: Up to 5% added to your Term Test 1 mark (the adjusted grade cannot exceed 100%)

Hand in this assignment along with your original term test.

**Part 1: Error Analysis**

For each problem that you missed on the test (i.e., each problem for which you did not receive full marks), do the following:

1. State the topic being tested (e.g., "solving linear inequalities.")
2. Write out a complete, correct solution.
3. Describe and classify error. You may use the following categories as a guide:
  - Careless error (misread question, didn't follow directions, skipped steps, minor arithmetic errors, copied number down wrong)
  - Form error (missed brackets, improper notation, too messy to read)
  - Concept error (do not understand the properties or principles required to answer the question)
  - Test-taking error (changing answer from correct answer to incorrect answer, keep writing after answered question, spending too much time on one problem, rushing through "easier" questions, leaving answers blank)
4. Discuss ways to avoid making the same mistake in the future. Some examples include:
  - Read entire question thoroughly, underlining or highlighting key words. Re-read question after finishing your answer.
  - Review answers at the end of the test.
  - Check your answers if possible.
  - Close your eyes and breathe deeply during the test.
  - Repeat a positive mantra (in your head) during the test to remain calm and confident.
  - Visit instructor's office hours or check your notes to review a concept you didn't fully understand.
  - If you're stuck during the test, try to re-write information from the test question or at least attempt a first step.

**Sample response for Part 1:**

Test question: Determine  $(-2, 2) \cup [1, 7]$ . Express your answer using **interval notation**.

Incorrect solution:  $(-2, 2) \cup [1, 7] = \{x \mid 1 \leq x < 2\}$

Error analysis:

1. Topic: Sets and interval notation
2. Correct solution:  $(-2, 2) \cup [1, 7] = (-2, 7]$
3. In my solution, I made several errors. First of all, I did not express my answer using interval notation (a form error). This is partly because I don't completely understand interval notation, and I also need to review the names of the different types of set notation. Also, I determined the intersection of  $(-2, 2)$  and  $[1, 7]$  instead of the union. This was a careless error. If I had taken my time, I would have known that the  $\cup$  symbol indicated union.
4. I am going to redo the homework for section 0.2 and test myself on similar questions. I will make sure to draw a number line for these types of questions in the future. On the next test, as soon as I start writing, I am going to write  $\cup = \text{union} = \text{OR}$  and  $\cap = \text{intersection} = \text{AND}$  as a reminder.

**Part 2: Analysis of Learning Strategies**

Answer the following questions:

1. Do you want to do better on Term Test 2 than you did on Term Test 1?
2. If yes, what will you do differently to make that happen? Be specific in your response.

To answer these questions, consider:

- How often do you attend class?
- How much time have you been spending on homework?
- How many extra homework problems do you do?
- Do you make study notes?
- How often do you visit the Math Assistance Centre?
- How often do you visit the instructor's office hours?
- What do you do when you are stuck on a problem?
- Have you made a free consultation appointment with a learning strategist?
- Have you made a free consultation appointment with a time management coach?
- Have you made a free consultation appointment with the Math Assistance Centre staff?
- Have you visited a counsellor at the Wellness Centre to discuss anxiety and stress levels?

## **6.2 MTH260 Introduction to Mathematical Inquiry**

### **Course Outline**

This course was designed for the Ryerson Mathematics department to address the gap in coursework between first year introductory algebra and upper year pure math courses. I designed this course by examining the gaps in the knowledge of the math students through discussions with students, experience as a teaching assistant, and discussions with the chair of the department.

The course was accepted by the departmental curriculum committee without revision and has since been approved by Ryerson Senate. The course is now part of the mandatory curriculum for all incoming students who begin their math program in Fall 2020 as per the Academic Calendar 2020-2021.

### **Final Project**

The final project for this course along with the rubric are given. The intention was to include direction and scope for the curriculum committee to assess the potential of the course. This project was not administered by myself.

## MTH260 Introduction to Mathematical Inquiry

This course will teach students how to properly read and analyze a proof. From generating their own proofs to evaluating the proofs of peers, students will have an in-depth opportunity to appreciate the rigour of mathematics. Elements of Analysis will be studied including absolute value and delta-epsilon limit definitions. Some concepts from number theory and geometry will be used to teach the method of proofs. Students will use interpersonal skills to present their own proofs and correct other proofs; learning the difference between the mathematically sound and the logically invalid. This course is designed to encourage the pursuit of true mathematical rigour and inquiry.

### Course Information

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<b>Course Instructor</b>	Erin Meger
<b>Email</b>	erin.k.meger/at/ryerson.ca
<b>Office</b>	ENG2XX
<b>Office Hous</b>	TBA
<b>Prerequisite</b>	MTH110 Discrete Math I

### Course Agreement

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The goal of this course is to offer a meaningful, rigorous, and rewarding experience to every student; you will build that rich experience by devoting your strongest available effort to the class.

You will be challenged and supported.

Please be prepared to take an active, patient, and generous role in your own learning and that of your classmates. (c/o Federico Ardila)

### Learning Outcomes

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- Use mathematical notation properly and effectively, and integrate definitions with techniques of proving to write proofs in a variety of math topics
- Write well-written proofs, and understand the components of proper math writing including the appropriate logical leap for an undergraduate level student
- Read, understand, and correct your own proofs and others proofs
- Create written documents and slides using LaTeX
- Understand the importance of mathematical literacy in the math community, including respecting the proof writing process and collaborating effectively

- By the end of the course students should understand and be able to write proofs and solve problems about the following topics.

- |                                       |                           |
|---------------------------------------|---------------------------|
| – Delta-Epsilon definition of a limit | – Supremum and Infimum    |
| – Absolute Value                      | – Divisibility and GCD    |
| – Bijections                          | – Fermat’s Little Theorem |
| – Countability                        | – Euler’s Phi Function    |
| – Relations and their properties      | – Euclids Elements        |
| – Set Operations                      |                           |

## Method of Instruction

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This course is a required course for math majors in the second semester of their first year. It will be offered via one 3-hour lecture to a class capped at 50 students. Classes will be engaging, involving group work activities, small presentations, independent work, and lectures. Each class will contain a quiz to encourage participation and attendance.

In addition, students have a choice in writing either a midterm or two take home assignments. There is significant research showing that students perform better when they have a choice in their assessment methods. The emphasis on this course is on writing proofs. Students have an opportunity to make an informed choice on whether they perform better under pressure or with ample time. This is an important lesson in that the proof-writing process cannot always occur under the time constraints of an exam.

## Course Reading and Textbook

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The required textbook for this course is *Writing, Reading, and Proving: A Closer Look at Mathematics* written by Ulrich Daep and Pamela Gorkin. This book will be referenced by its chapter numbers. We will also be using the Bartle book *Introduction to Real Analysis*; this book will be referenced as “Bartle” in the schedule below. The sections by week are listed below along with a number of homework problems assigned from the text.

## Mark Breakdown

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### Traditional Assessments

- 15%            Weekly Quizzes
- 20%            Assignments OR Midterm  
                 Students Must sign COURSE INTENTIONS FORM by WEEK 2  
                 Choice of traditional midterm or traditional assignments  
                 Questions concern all previous mathematics topics  
                 Marked with heavy emphasis on notation and readability

### Group Project

- 2%            Math Goals Reflection  
                 Find an upper year math course or topic that interests you  
                 Write a half page reflection detailing why it is interesting to you
- 6%            Group Topic Resource Collection  
                 In groups find open resources on assigned topic  
                 Resources could include library textbooks or online videos
- 10%           Group Topic Glossary  
                 Use feedback from Resource Collection  
                 Create a document of basic terms from the assigned topic  
                 Document may include examples and illustrations to explain terms  
                 Must include proof of assigned theorem written in own words
- 12%           Final Group Presentation  
                 Groups present assigned topic  
                 Must include the proof of theorem assigned by instructor in WEEK 7  
                 Marked as a group.

### Final Exam

- 35%           Final Exam  
                 150 minutes during University exam period  
                 Date and location TBD  
                 Focus on Material, contains small component of course reflection



## Weekly Topic Outline

Week	Topics	Textbook
Week 1	Polya's Four Pillars Existential Quantifiers Mathematical Notation Proof Techniques Intro to LaTeX	Chapter 1 Chapter 4 Chapter 4 Tips on Quantification Chapter 5
Week 2	Absolute Value and Interval Notation Relations Sets Writing Proofs	Chapter 5 Chapter 10 Chapter 7,8,9 Chapter 9 Tips on Writing Math
Week 3	Functions Bijections Inverses Reading Math Correcting Proofs	Chapter 14 Chapter 15 Chapter 16,17 Chapter 10 Tips on Reading Math
Week 4	Countability Logical Leaps	Chapter 21-23 Chapter 13 You Solved it now what?
Week 5	MIDTERM Paradoxes	
Week 6	Delta Epsilon	Bartle 4.1
Week 7	Supremum and Infimum	Chapter 11 Bartle 2.3
Week 8	Divisibility and Parity Modular Arithmetic	Chapter 3 Chapter 27
Week 9	Fermat's Little Theorem Eulers Phi Function How to Beamer	Chapter 28 Chapter 29
Week 10	Euclids Elements Presentation Skills	Class Notes
Week 11	Euclidean Geometry	Class Notes
Week 12	Final Presentations	

## Course Policies

**Participation Policy** As per the course agreement stated at the top of this outline, it is important that students come prepared to class. This included being ready to work with others, and having done the appropriate homework for the lesson. Each student should take active involvement in the class in order to gain the most out of each lesson and activity.

**Late Policy** Assignments will not be accepted after the due date unless arrangements are made with the instructor in advance.

**Respect Policy** The classroom is designed to be a safe space for learning and especially for making mistakes. It is of the utmost importance that each student understand and respect the learning process for their classmates. Disrespect of any kind will not be tolerated within the classroom.

**Email and Office Hours** Any student is welcome to send an email to me at anytime regarding any comment or concern in the course, and I will respond to these emails in a timely manner. I am here to guide and support your learning. If you are struggling or confused with the material please send me an email or attend weekly office hours. Remember, all correspondence must be done through your RYERSON email address, referencing the course number, and including you full name.

**Changes to Outline** The Lecturer reserves the right to modify or change any component of this course outline. Any changes will be posted on D2L prior to taking effect.

**Academic Integrity** In a course which includes a significant portion of group work, it is imperative that each student has a solid understanding of academic integrity. Any academic integrity violations will be dealt with as per university regulations. For more information you can consult the academic integrity website [www.ryerson.ca/academicintegrity](http://www.ryerson.ca/academicintegrity) and also [www.ryerson.ca/senate/policies](http://www.ryerson.ca/senate/policies). It is highly encouraged that you complete the module on the website as well.

**University Regulations** Please visit the senate website at [www.ryerson.ca/senate](http://www.ryerson.ca/senate) for more information on policies affecting undergraduate students. The following are a list of policies to consider:

- Course Management Policy 145
- Student Code of Academic Conduct Policy 60
- Student Code of Non-Academic Conduct Policy 61
- Examination Policy 135
- Policy on Grading, Promotion, and Academic Standing Policy 46
- Undergraduate Academic Consideration and Appeals Policy 134
- Accommodation of Student Religious Obligations Observance Policy 150
- Academic Accommodation of Students with Disability Policy 159

## **MTH260 Final Project**

The goal of this semester long project is to introduce students to a new area of mathematics and develop a sense of mathematical inquiry. The project begins by selecting a topic that interests you as a student, there are a number of potential topics listed at the back of this document. Students will then be placed into groups; all efforts will be made to assign groups and topics in line with the reflections submitted. The group will develop a write up and presentation that could be presented to other undergraduate students, for instance at the Canadian Undergraduate Mathematics Conference.

The RUBRIC for each component can be found in a separate document.

### **Math Goals Reflection - Week 3**

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Write a 300-500 word reflection on a math topic that interests you. The reflection will be marked only on content and not on presentation or spelling and grammar. You should find some resources that helped you understand why the topic was interesting and detail these resources in the reflection.

### **Group Topic Resource Collection - Week 6**

---

After the reflections have been assigned and marked, you will be placed into groups of 4 or 5 students. In these groups you will need to research the topic and create a glossary of terms, and compile some resources that discuss the topic. For each resource outline in one to two sentences how the resource could be useful in your final presentation.

## Group Topic Write Up - Week 10

---

The write up will build on the resource collection, and will include a section on motivation and all relevant definitions. A theorem from the subject area will be assigned by the instructor to each group after the submission of the resource collection.

## Group Presentation - Week 12

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The final day of the course will have each group presenting their final project to the class. The presentation must be made on slides using LaTeX. In class, we will discuss effective presentation skill, and students should implement these techniques into their presentations. These presentations should be fun and captivating to the class. Please note the rubric goes across two pages.

## Potential Topics

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Below is a list of potential topics. Students can use these topics as a guide, and may choose topics outside of the list. The topics in the list are at an appropriate level for students and have a number of resources available.

- Graph Coloring
- Similar Triangles
- Geometric Constructions
- Cops and Robbers
- Bolzano-Weierstrauss Theorem
- Chinese Remainder Theorem
- Lewis Carol Determinants
- Vector Spaces
- RSA Code
- Rational and Irrational Numbers

## MTH260 Final Project RUBRIC

---

### Math Goals Reflection - Week 3

	Excellent	Good	Satisfactory	Unsatisfactory
<b>Topic</b>	strong mathematical relevance	some mathematical relevance	not relevant but similar topics could relate	no mathematical relevance
<b>Resources</b>	clearly details how topic was found, sources are included and described, and students particular interest in the topic should be discussed	included why the topic is interesting and has some resources but lacks clarity on why the sources are helpful	some details on student interest are included and little to no sources are used	no sources are used and there is no clarity on why the topic is interesting

**Group Topic Resource Collection - Week 6**

	Excellent	Good	Satisfactory	Unsatisfactory
<b>Definitions</b>	all relevant definitions are included and properly defined	most relevant definitions are included and most are properly defined	many definitions are included but only some are well defined	definitions are not relevant and/or are poorly defined
<b>Resources</b>	each resource has one to two sentences that clearly indicate its usefulness	resources have one to two sentences that have some indication of its usefulness	some resources have one sentence about its usefulness	resources do not have any sentences detailing any usefulness
<b>LaTeX</b>	LaTeX Used			LaTeX Not Used

**Group Topic Write Up - Week 10**

	Excellent	Good	Satisfactory	Unsatisfactory
<b>Motivation</b>	Introduction and motivation are included, written captivatingly, and highly detailed,	introduction and some motivation are included that contain some detail	introduction provides no motivation but introduces the topic	introduction not included
<b>Definitions</b>	all relevant definitions are included and properly defined	most relevant definitions are included and most are properly defined	many definitions are included but only some are well defined	definitions are not relevant and/or are poorly defined
<b>Theorem</b>	All details of the theorem are included, written in proper mathematics notation, and clearly written in the students own words	most details of the proof are included, mathematical notation is utilized effectively, but some details are copied from original text	some details are committed and notation is not used consistently, some details are copied	major logical leaps are made, notation is never used correctly, and many details are copied directly
<b>LaTeX</b>	LaTeX Used			LaTeX Not Used

**Group Presentation - Week 12**

	Excellent	Good	Satisfactory	Unsatisfactory
<b>Presentation</b>	Speakers engage the audience and use presentation skills effectively	Speakers are clear and concise and use some presentation skills effectively	Presentation skills are used somewhat effectively, speakers are not clear	Speakers are not clear and not engaging, presentation skills not effective
<b>Definitions</b>	all relevant definitions are included and properly defined	most relevant definitions are included and most are properly defined	many definitions are included but only some are well defined	definitions are not relevant and/or are poorly defined
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<b>LaTeX</b>	LaTeX Used			LaTeX Not Used



## **6.3 CP367 System Programming Winter 2019**

### **Course Outline**

I was the course coordinator and only instructor of this course in Winter 2019, and all course materials needed to be recreated due to a change in the academic calendar to this course. Initially, this course contained a significant portion of an introduction to C programming, however, that was added as an additional course prior. Thus, the course needed significant redesign this semester. Additionally, the required textbook was significantly outdated, and we used an additional textbook “The Unix Workbench” by Sean Kross, which is an open textbook and the link to which was available on the course webpage as stated in the course outline.

### **Midterm**

This midterm exam included a 50 minute 40 question online multiple choice component that was conducted in the computer lab prior to the in-class written midterm. Students had 50 minutes to complete the following questions in the booklet. These questions were distinct, but similar, to previous assignment problems and assigned textbook questions.

### **Sample Assignment**

This assignment was a group assignment and was the final assignment in the course. It was worth the weight of two assignments as it was a larger project and the students had sufficient time to complete it.

### **Final Exam**

This final exam was 2.5 hours in length and in person, scheduled by the registrar during the final exam period.



## Course Syllabus

CP367 Intro to System Programming

Department of Physics and Computer Science, Faculty of Science, Waterloo Campus

Winter | 2019

*I acknowledge that in Kitchener, Waterloo, Cambridge and Brantford we are on the traditional territory of the Neutral, Anishnawbe, and Haudenosaunee peoples.*

### Instructor Information

Name **Erin K.M. Meger** | Office Location **N2091A**

Contact Information **ekmmeger@wlu.ca**

Weekly Office Hours **Monday 11:30-1:30** or By Appointment

### Course Information

#### *Calendar Description*

Contemporary ideas and techniques in system programming using the C language. Using and implementing software tools: filters, pipelines, sorts, text patterns and others.

Introduction to Unix operating system and Unix commands. Shell programming in Unix.

Pre-requisites: CP264 | Exclusion: CP217

*Lecture:* MWF 10:30-11:20 Science N1044

*Labs:* M 1:30-2:20 Bricker BA113

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The best way to learn Unix is by USING IT! It is recommended students dedicate significant time to working through assignment problems, and reviewing any in-class examples.

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- Student success departments – writing centre, math centre, academic advising, study skills/supplemental instruction, accessible learning)

## Student Evaluation

Assessment	Weighting
Midterm	30%
Assignments (7-10)	20%
Lab Tasks	10%
Final Exam	40%
<b>Total</b>	<b>100%</b>

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`shoe_a6_q3.c`

that is, the name of a program is

`<author_name>_<assignment_number>_<question_number>.c`

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**CP367 Winter 2019**  
**Assignment 6+7**  
**Due date: Sunday April 5, 11:59 PM EST**

*This is a group assignment. It is also worth twice as much as a regular assignment. There are 3 pages to this assignment with two questions total (each question has multiple parts).*

Group Requirements:

- Size: 3-5 People
- At least 2 people must have Git access
- Only ONE copy is to be submitted, when you submit add a COMMENT in MLS with the names of each of your group members
- Include a file called group.txt with all of your group members names and student numbers

Assignment File Structure:

- name1234\_a6.zip (the name of the person submitting)
  - name1234\_q1 (a Directory)
    - Your bash script (any file name you like)
    - Question 1 Submission text file (name1234\_q1.txt)
  - name1234\_q2 (a Directory)
    - Your bash script (any file name you like)
    - Question 2 Submission text file (name1234\_q2.txt)

**Question 1**

Write a bash script called *listallthethings* that will do an `ls -l` command on each of its arguments only if the argument is the name of a regular file in some directory beneath (or equal to) the current directory. That is, for each directory inside the current directory, you will need to check if the file exists. You should be sure that the long list that is printed is only the long list of the filename you've asked. You will need for loops and if statements.

**Question 1b**

Branch your project and include and inode update. Your code should know give the `ls -li`(inode only) of the file you are looking for.

**Question 1c**

Merge your two branches to include *listallthethings* where BOTH the inode and the long list are presented. Draw the graph of your branches and pipe the output to a text file (or screenshot the tree)

```
git log --oneline --graph --decorate --all
```

**Question 1d**

Write a short paragraph about happened when you tried to merge the two updates? What did you need to do? Could you have handled your project differently to reduce the number of changes you needed to make?

**Question 1 Submission file (.txt):**

- code for *listallthethings* (in a text file)
- Testing for the program.
- Git tree
- Reflection paragraph

**Question 2a**

Recall question 3 from assignment 2. Write a BASH SCRIPT (not a C code) called *birthdaycountdown* that performs the following functions:

- Greet the user by figuring out their username (using `who`)
- Ask the user to input their birthday (day and month, in integers)
- Calculate and display the number of days to their birthday

No tricks to this. Just simply find the amount of days between today and their birthday. Output that number of days.

**Question 2b**

Consider each of the features below. What is the most efficient way to build a branching structure to complete these projects in tandem with your team? What features rely on other features? Can any features be written in tandem?

Create a project plan to determine which features will be added first, and by whom. Please write an explanation of why you've chosen this order, and what the benefits are. This does not necessarily need to be the most efficient (scheduling is an NP-hard problem), but there should be some good justification!

Feature 1:

- If the current date is the user's birthday, the program should print out a "Happy birthday" message.
- If the current date is one of {Halloween, Christmas, St. Patrick's, Canada Day} give the user a festive message

Feature 2:

- Using command line argument, the user can enter an offset (the number of days) from the current date in the positive direction by at most 15 years.

Feature 3:

- Check if the user's birthday is one of the special holiday's listed above. If so, provide a special festive birthday message to the user.
- If the offset date brings us to a special holiday, also give a festive message

Feature 4:

- Add a loop so that the program continues to run until the user asks to stop. That is, the program will ask for another birthday once it completes.

Feature 5:

- Include the year of birth of the user and calculate their current age. If you would give them a birthday message, then include their AGE in that birthday message.

**Question 2c**

Add each of the previous features to your code using your project plan from Question 2b. The idea is that each group member adds a feature, although not all groups will have 5 people. All groups need to complete all 5 tasks.

**Question 2 Submission file (.txt):**

- Project Plan
- Code for your program
- Testing for the program.
- Git tree

## Part 1: Multiple Choice [0.5 Marks Each]

### Instructions

Please answer each question on the ScanTron Sheet provided using only a pencil. At the end, place your ScanTron Sheet inside the exam booklet, and love thyself.

1. In the makefile the target and dependencies are separated by the character
  - a) –
  - b) :
  - c) /
  - d) none of the mentioned
  
2. Superuser can change the \_\_\_\_\_ permissions of any file.
  - a) owner
  - b) group
  - c) other
  - d) all of the above
  
3. A symbolic link will increase the link counter of the file.(T/F)
  - a) True
  - b) False
  
4. What would be the current working directory at the end of the following commands?

```
$ pwd
/home/user1/proj
$ cd src
$ cd generic
$ cd .
$ pwd
```

  - a) /home/user1/proj
  - b) /home/user1/proj/src
  - c) /home/user1
  - d) /home/user1/proj/src/generic
  
5. How do you print the lines between 5 and 10, both inclusive
  - a) cat filename | head | tail -6
  - b) cat filename | head | tail -5
  - c) cat filename | tail +5 | head
  - d) cat filename | tail -5 | head -10
  
6. What is the output of the following code:

```
os=Unix
echo 1.$os 2."$os" 3.'$os' 4.$os
```

  - a) 1.Unix 2.Unix 3.Unix 4.Unix
  - b) 1.Unix 2.Unix 3.\$os 4.Unix
  - c) 1.Unix 2.Unix 3.Unix 4.\$os
  - d) 1.Unix 2.\$os 3.\$os 4.\$os
  
7. The statement `z = 'expr 5 / 2'` would store which of the following values in z?
  - a) 0
  - b) 1
  - c) 2
  - d) 2.5

8. What is the output of the following bash program?

```
x = 3; y = 5; z = 10;
if [ ( $x -eq 3 ) -a ( $y -eq 5 -o $z -eq 10 ) ]
then
    echo $x
else
    echo $y
fi
```

- a) 1
- b) 3
- c) 5
- d) Error

9. What is the return value (\$?) of this code:

```
os = Unix
[$osName = UnixName] && exit 2
[${os}Name = UnixName] && exit 3
```

- a) 0
- b) 1
- c) 2
- d) 3

10. What is sed?

- a) a stream editor
- b) an IDE
- c) a hex editor
- d) none of the above

11. Consider the following commands, executed in a new, empty directory:

```
git init
touch todo.txt
touch message.txt
git add todo.txt
git commit -m "first commit"
git add message.txt
echo "- Buy cherries" >> todo.txt
git commit -m "second commit"
echo "- Dear Philip," >> message.txt
```

By the end of these commands, what is the status of this repository?

- a) The file todo.txt has been committed to the repository but the file message.txt has only been added to the repository.
- b) The file message.txt has been committed to the repository but the file todo.txt has only been added to the repository.
- c) Blank versions of the files todo.txt and message.txt have been committed to the repository. Content added to those files has not yet been committed.
- d) The files todo.txt and message.txt have been committed to the repository and the committed version each contain one line of text.

12. Which command is used to replace word 'cat' (already present in the file) with 'mouse' at all places in a file 'old.txt' and save the result in a new file 'new.txt'?

- a) sed 's/cat/mouse/g' old.txt > new.txt
- b) sed 's/cat/mouse' old.txt new.txt
- c) sed '/s/cat/mouse/g' old.txt new.txt
- d) sed '/s/cat/mouse' old.txt > new.txt

13. Which command changes a file's group owner

- a) carp
- b) chgrp
- c) change
- d) group

14. Which command is used to display all the files including hidden files in your current and its subdirectories ?

- a) ls -aR
- b) ls -a
- c) ls -R
- d) ls -l

15. What command will remove a non-empty directory?

- a) rm -r
- b) rm -f
- c) rmdir -f
- d) rmdir -le

16. Which command sets up shorthand for command or command line?

- a) set
- b) alias
- c) new
- d) echo

17. Unix stores times as the number of seconds since

- a) January 1, 2000 EST
- b) January 1, 1970 EST
- c) January 1, 1950 GMT
- d) January 1, 1970 GMT

18. What is the output of this bash script?

```
a=2
b=4
let c=a*b
echo $c
exit 0
```

- a) 8
- b) 16
- c) 32
- d) none of the above

19. What is the output of this bash script?

```
a=10; b=20
c=$((++a))
let a=c+a
echo $a
exit 0
```

- a) 21
- b) 22
- c) Error
- d) none of the above

20. Which of these commands will set the permissions on file `textfile` to read and write for the owner, read for the group, and nothing for everyone else?
- a) `chmod 046 textfile`
  - b) `chmod 640 textfile`
  - c) `chmod 310 textfile`
  - d) `chmod rw r nil textfile`
21. What is the difference between `who` and `whomami`?
- a) `whomami` displays the currently logged-in users, whereas `who` lists only the current user
  - b) `whomami` displays the name of the current user, `who` displays all currently logged-in users including the time of their log in.
  - c) `whomami` displays a list of all currently logged-in users, whereas `who` displays the time of their most recent log in.
  - d) `whomami` displays the path from the root directory to the user's directory, whereas `who` displays only the name of the current user.
22. How do you run a command in the background?
- a) Put `&` at the end of the command line
  - b) Put `"fg"` before the command
  - c) Press `Ctrl+c` after after you have typed the command
  - d) Press `Ctrl+RETURN` to execute the command.
23. What information does the `utmp` struct tell us?
- a) Information about all currently logged-in users
  - b) Information about the Kernel
  - c) Information about the Shell
  - d) None of the above
24. A Unix directory
- a) Could be empty
  - b) Always contains at least one file
  - c) Always contains at least two files
  - d) Always contains at least three files
25. Suppose the shell command `"chmod 664 filename"` has been executed. `filename` is
- a) user executable
  - b) group executable
  - c) user and group executable
  - d) other writeable
26. What is printed to the console by the following command?
- ```
echo Demetrius || [[ 6 -eq 7 ]] || echo Helena &&
echo\ Hermia || [[ 7 -gt 4 ]]
```
- a) Helena  
Hermia
  - b) Demetrius  
Hermia
  - c) Demetrius  
Helena
  - d) Nothing is printed.



27. What is NOT included in the utmp struct?

- a) Device name of terminal
- b) Username
- c) Current shell session name
- d) Process ID of login process

28. What command is makes a file system or device available to the current system?

- a) fsck
- b) fdisk
- c) device
- d) mount

29. What is the result of the script below?

```
lab=(jeff roger brian)
lab[3]=sean
lab=("${lab[*]} " "${lab[*]}")
echo ${#lab[*]}
```

- a) 6
- b) 9
- c) 1
- d) 2

30. In the root directory of a Unix file system, which of the following is true?

- a) "." and ".." point to the same inode
- b) "." and ".." point to different inodes
- c) "." contains the value NULL
- d) ".." does not exist

31. What command will search for the string {begins with "week" ends with some number} in the directory "LectureNotes"

- a) `grep "$week[0-9]+" | ls LectureNotes`
- b) `ls LectureNotes | grep "^week{0..9}+"`
- c) `ls | cd LectureNotes | grep "$week[0-9]+"`
- d) `ls LectureNotes | grep "^week[0-9]+"`

32. The following Unix command lists the current processes

- a) `pr`
- b) `ls -p`
- c) `pc`
- d) `ps`

33. The `wait()` system function

- a) Is called in the parent process
- b) Accepts the child process as input
- c) Both of the above
- d) None of the above

34. The shell command for terminating a background process is

- a) `kill n`, where `n` is the process ID
- b) `kill %n`, where `n` is the job number
- c) `kill -b n`, where `n` is the process ID
- d) `kill -b %n`, where `n` is the job number

35. What does the exit status of a program indicate?
- a) The exit status of a program indicates how a program will be completed once it's exhausted all of its code.
  - b) The exit status of a program indicates the value that was computed by the program.
  - c) The exit status of a program indicates how many programs were running at the same time as a particular program.
  - d) The exit status of a program indicates whether the program was executed successfully or whether an error occurred.
36. What command would you use to copy the entire directory Assignment8 to a new directory Assignment8Backup?
- a) `cp -r Assignment8 Assignment8Backup`
  - b) `cp -R Assignment8 Assignment8Backup`
  - c) `mv -r Assignment8 Assignment8Backup`
  - d) `mv -R Assignment8 Assignment8Backup`
37. Which of the following are requirements for variable names?
- a) The variable name starts with a letter or underscore.
  - b) Every character in the name is lowercase.
  - c) Numbers are not allowed in variable names.
  - d) Every character in the name is uppercase.
38. The `execvp` function returns a value
- a) only if it fails to find or run the program
  - b) only if it successfully runs the program
  - c) none of the above, `execvp` never returns
  - d) Both of the above, `execvp` always returns
39. What's the purpose of the *local* command keyword?
- a) The local keyword allows you to create a function such that the function can be used within your shell the same way you would use a command.
  - b) The local keyword stores the value of several variables locally so that they can be accessed later on within a script.
  - c) The local keyword ensures that all of the actions taken by a particular function do not affect the global computing environment.
  - d) The local keyword allows you to assign the value of a variable within a function without changing the global value of that variable.
40. Which of the following are not part of the Unix Philosophy?
- a) Programs should do one thing and do it well.
  - b) Programs should work together.
  - c) Programs should handle text streams (universal interface)
  - d) Programs should have easy to understand error codes.
41. What's the best way to identify an individual Git commit?
- a) The SHA-1 hash generated for the commit.
  - b) The list of files that were changed on the commit.
  - c) The name of the branch that corresponds to the commit.
  - d) The commit message for the commit.

42. Consider the following bash program called numrange.sh:

```
odd=$(echo "$1 % 2" | bc)
if [[ $odd -eq 0 ]]
then
    status="even"
else
    status="odd"
fi
if [[ $1 -gt 0 ]] && [[ $1 -lt 10 ]]
then
    location="in"
else
    location="out of"
fi
echo "This number is $status and $location range."
```

Which of the following is the result of commands below?

```
bash numrange.sh 6
bash numrange.sh 11
bash numrange.sh 400 10
```

- a) This number is even and in range.  
This number is odd and out of range.  
- error - too many arguments
- b) This number is even and out of range.  
This number is odd and in range.  
This number is even and out of range.
- c) This number is even and in range.  
This number is odd and out of range.  
This number is even and out of range.
- d) This number is odd and out of range.  
This number is even and in range.  
This number is even and out of range.

43. What is one reason you might want to modify the PATH environmental variable?

- a) The PATH can be modified in the bash profile which is where aliases are defined. The bash profile is run every time you start a shell.
- b) Modifying the PATH makes it easier to switch between programs when you are using multiple shells at once.
- c) You can make functions available to you on the command line by including the PATH variable inside of the definition of a function.
- d) You can add a directory containing your own programs to the PATH which allows you to access them on the command line.

44. In the following bash script:

```
# File: simpleifelse.sh
if [[ $1 -gt 3 ]]
then
    echo "Thanks for entering $1"
else
    echo "You entered: $1, not what I was looking
for."
fi
```

What is the output for the syntax:

```
$ bash simpleifelse.sh 4 || bash simpleifelse.sh David
```

- a) Thanks for entering 4.  
You entered: David, not what I was looking for.
- b) -bash: simpleifelse.sh: command not found
- c) You entered: David, not what I was looking for.
- d) Thanks for entering 4.

45. What actions are taken by the following commands?

```
chmod a+x my_program  
chmod go-rw my_program
```

- a) Allows only the owner to execute my\_program. Prevents the owner from reading or modifying my\_program.
- b) Allows anyone to execute my\_program. Prevents the owner from reading or modifying my\_program.
- c) Allows only the owner to execute my\_program. Prevents anyone other than the owner from reading or modifying my\_program.
- d) Allows anyone to execute my\_program. Prevents anyone other than the owner from reading or modifying my\_program.

46. In order to have a link exist between file systems what sort of link should be used?

- a) Hard Link
- b) Symbolic Link
- c) Symmetric Link
- d) Both Hard or Symmetric Links are valid between file systems

47. Why use Git?

- a) Git allows you to work simultaneously with collaborators on the same project without overwriting each other's work.
- b) Git backs up your work and allows you to return your files to a previous state.
- c) Git manages multiple versions of your work by appending version numbers to the ends of file names.
- d) All of the above

48. What variable gives the number of arguments given in a bash script.

- a) \$#
- b) \$@
- c) \$n
- d) \$a

49. What is a Git repository?

- a) A Git repository is any directory on your computer that could be uploaded to GitHub.com.
- b) A Git repository is any of the files in a directory whose changes are tracked by Git.
- c) A Git repository is a directory where all of the changes to your files are tracked by Git.
- d) A Git repository is a website on GitHub.com that lists a series of files tracked by Git.

50. What do each of these logical operators mean?

i. =~, ii. =, iii. !=

- a) i. String not equal to, ii. matches the regular expression, iii. integer not equal to
- b) i. Matches the regular expression, ii. string not equal to, iii. string equal to.
- c) i. Integer not equal to, ii. matches the regular expression, iii. string not equal to
- d) i. Matches the regular expression, ii. string not equal to, iii. Less than or equal to

51. What is the purpose of *make clean*

- a) Removes all files from the makefile as if it had never been made
- b) Removes all intermediate files from the makefile.
- c) Renames all intermediate files from the makefile
- d) Places all files from the makefile in their own directory.

52. What is the purpose of the ssh command?
- a) The ssh command gives control of your shell over to another computer which is connected to the internet.
  - b) The ssh command creates a new shell on your local computer which you can use to transfer files over the internet.
  - c) The ssh command allows you access the shell on a computer that is connected to the internet.
  - d) The ssh command secures your internet connect in order to protect you from hackers and spyware.

53. When is "let" used in bash scripts?
- a) Let is not used in bash scripts.
  - b) To define an array.
  - c) To initialize a variable
  - d) To define a variable in terms of another variable

54. In a git repository, what is *staging*?
- a) Begins a new branch to form commits.
  - b) Add files to be committed on the next commit. All other files will not be committed.
  - c) Staging is used in bash scripts to define functions.
  - d) Adds files to the .gitignore.

55. In a make file, what is the difference between a target and a dependency?
- a) A target is a file that is required for the make file, and a dependency is a set of bash commands to execute "make [dependency]"
  - b) A target is a directory where the makefiles will be created, and a dependency is the directory where the makefile is stored.
  - c) A target is a set of bash commands to execute "make [target]", and a dependency is a file that a particular target relies on.
  - d) A target is a set of bash commands to execute "make [target]", and a dependency is a variable named within a target.

56. In the following bash script

```
#!/usr/bin/env bash
# File: addseq.sh
function addseq {
    sum=0
    for element in $@
    do
        let sum=sum+$element
    done
    echo $sum
}
```

What is the proper syntax to call the function?

- a) \$ bash addseq.sh  
\$ addseq.sh addseq
- b) \$ source addseq.sh  
\$ addseq 12 90 3
- c) \$ bash addseq.sh  
\$ addseq.sh addseq 12 90 3
- d) \$ source addseq.sh  
\$ addseq

57. In a git repository, how can you determine what files are set to be committed, and what files have been changed but are not yet staged?

- a) git log
- b) git status
- c) git commit
- d) git info

58. What is the output of

```
echo {1..3}{A..C}
```

- a) 1 2 3 A B C
- b) 1A 2A 3A 1B 2B 2C 1C 2C 3C
- c) 1 A 2 B 3 C
- d) 1A 1B 1C 2A 2B 2C 3A 3B 3C

59. What is the output of the following sequence of commands

```
$ cd
```

```
$ pwd
```

- a) /home/yourname
- b) ~/yourname
- c) /
- d) /home

60. Which of the following is not a builtin Unix command?

- a) date
- b) rm
- c) ls
- d) hk

**End of Multiple Choice**

## Part 2: Long Answer

### Instructions

Please answer each question in the exam book provided. Use proper syntax, and comment your code throughout. Use functions when necessary.

### Question 1 [ 2 Marks each ]

- Explain the difference between appending, rewriting, and redirecting. What symbols are used for each.
- Explain what a git conflict is and how to manage these conflicts.

### Question 2 [ 6 Marks ]

Write a bash script that prints out the inode number of all regular files containing the regular expression "Contain a lowercase letter followed by a number, followed by a capital letter" in the current directory. If filename does not exist in current directory, print "File doesn't exist".

### Question 3 [ 6 Marks]

Make a guessing game *guess.sh*. Greet the user by name. The computer chooses a number from 1-10, and the player then guesses. If the player's guess is lower or higher, have the computer inform them accordingly.

### Question 4 [ 6 Marks]

Write a bash script *beginning.sh* that reads a text file word by word into a new file with each word on a new line. Then, print out each word that begins with the letter 's' using regular expressions.

### Question 5 [ 6 Marks]

Create a makefile with 2 targets:

- append*: ask the user for a file name and append that file to a file called "words\_to\_count"
- wordcount*: Create a file called "wordcount" that has the word count of the file "words\_to\_count" It should be formatted as follows:  
DATE: [insert date using date command]  
BEFORE: [WC before appended file]  
AFTER: [WC after appended file]

Your makefile should also make all and make clean.

**BONUS [ 2 Marks ]** What was your favorite things you learned in this course? What is one topic you would want to cover in more detail?

## End of Final Exam

## 7 Appendix

### 7.1 Proof of Degrees





# RYERSON UNIVERSITY

*The Chancellor and Senate of Ryerson University in Toronto, Canada, confer on*

**Erin Meger**

*who has fulfilled all the requirements of the program of study, the degree of*

**DOCTOR of PHILOSOPHY**

**MATHEMATICAL MODELLING and METHODS**

*and grant all the rights and privileges attendant thereon.*

*In witness whereof we have hereto subscribed our names and affixed the Seal of the University.*



Chancellor



President and Vice Chancellor

*June 2020*



## **7.2 Course Evaluations – Full 56 pages**

|                             |                                     |                              |                  |
|-----------------------------|-------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | SC101 A - Essential Skills for Math | <b>Department:</b>           | MA               |
| <b>Responsible Faculty:</b> | Erin Meger                          | <b>Responses / Expected:</b> | 13 / 28 (46.43%) |
| <b>Focus:</b>               | Overall Results                     |                              |                  |

| A. Demographics Section<br>Demographics |                                           | SC101 - A |   |        |
|-----------------------------------------|-------------------------------------------|-----------|---|--------|
|                                         |                                           | Responses |   | Course |
|                                         |                                           | F         | P | N      |
| Q1                                      | Are you a full-time or part-time student? | 13        | 0 | 13     |
| Responses: [F] Full-time [P] Part-time  |                                           |           |   |        |

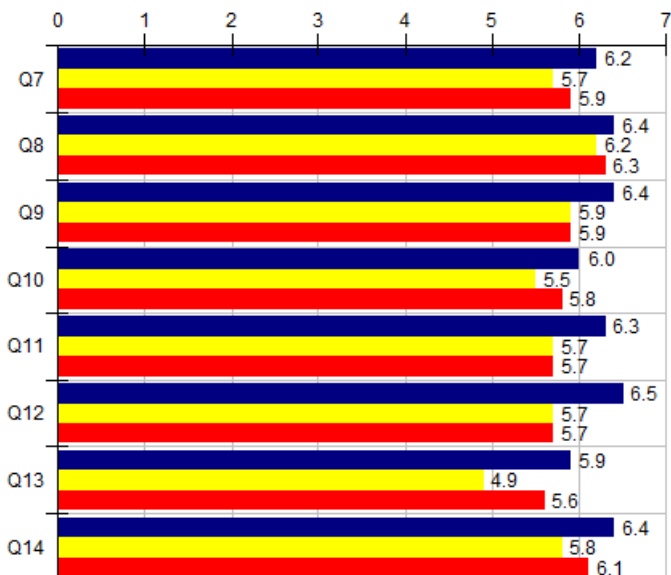
| A. Demographics Section<br>Demographics |                                                                 | SC101 - A |   |        |
|-----------------------------------------|-----------------------------------------------------------------|-----------|---|--------|
|                                         |                                                                 | Responses |   | Course |
|                                         |                                                                 | E         | R | N      |
| Q2                                      | Is this course an elective or required course for your program? | 9         | 4 | 13     |
| Responses: [E] Elective [R] Required    |                                                                 |           |   |        |

| A. Demographics Section<br>Demographics                      |                                                                 | SC101 - A |   |   |   |     |        |
|--------------------------------------------------------------|-----------------------------------------------------------------|-----------|---|---|---|-----|--------|
|                                                              |                                                                 | Responses |   |   |   |     | Course |
|                                                              |                                                                 | 0-9       | 1 | 2 | 3 | >40 | N      |
| Q3                                                           | How many one-term courses had you completed prior to this term? | 10        | 2 | 1 | 0 | 0   | 13     |
| Responses: [0-9] 0-9 [1] 10-19 [2] 20-29 [3] 30-39 [>40] >40 |                                                                 |           |   |   |   |     |        |

| A. Demographics Section<br>Demographics                                                                                                          |                                                    | SC101 - A |     |     |     |    |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------|-----|-----|-----|----|--------|
|                                                                                                                                                  |                                                    | Responses |     |     |     |    | Course |
|                                                                                                                                                  |                                                    | AN        | LTH | AHT | MTH | AA | A      |
| Q4                                                                                                                                               | In terms of my class attendance, I attended class: | 0         | 0   | 1   | 2   | 6  | 4      |
| Responses: [AN] almost never [LTH] less than half the time [AHT] about half the time [MTH] more than half the time [AA] almost always [A] always |                                                    |           |     |     |     |    |        |

| A. Demographics Section<br>Demographics        |                                                                                               | SC101 - A |   |   |        |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------|---|---|--------|
|                                                |                                                                                               | Responses |   |   | Course |
|                                                |                                                                                               | L         | S | H | N      |
| Q5                                             | Compared to other courses at this level in this discipline, the workload for this course was: | 3         | 6 | 4 | 13     |
| Responses: [L] lighter [S] similar [H] heavier |                                                                                               |           |   |   |        |

| A. Demographics Section<br>Demographics         |                                        | SC101 - A |     |        |
|-------------------------------------------------|----------------------------------------|-----------|-----|--------|
|                                                 |                                        | Responses |     | Course |
|                                                 |                                        | IC        | OOO | N      |
| Q6                                              | Where did you complete the evaluation? | 7         | 6   | 13     |
| Responses: [IC] In class [OOO] Outside of class |                                        |           |     |        |

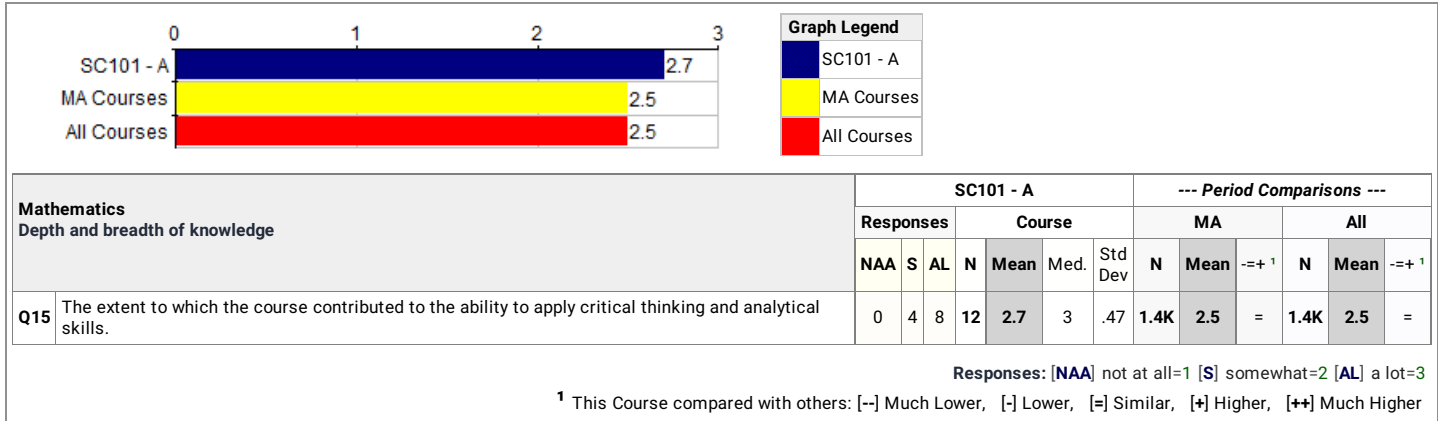


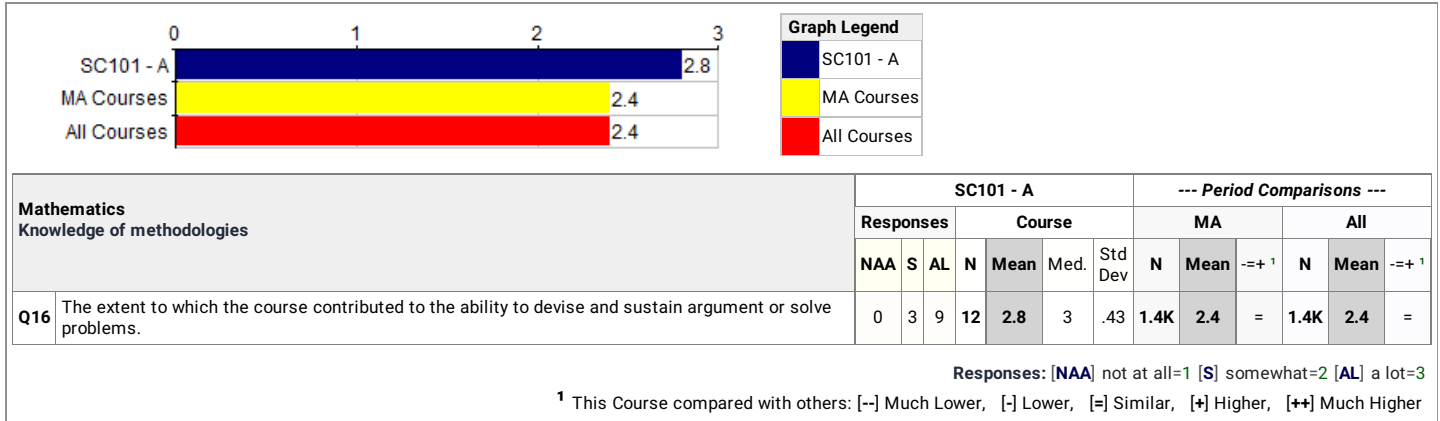
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| <span style="color: yellow;">■</span> | MA Courses  |
| <span style="color: red;">■</span>    | All Courses |

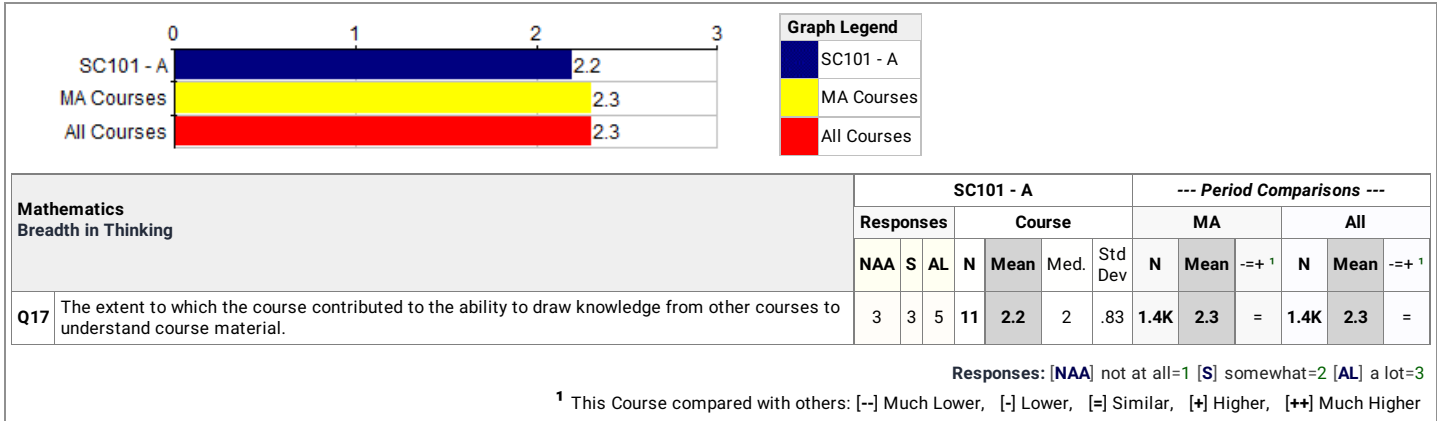
| C. Questions about the course<br>Course |                                                                                                                          | SC101 - A |   |   |   |   |   |    |        |      |     |      | --- Period Comparisons --- |      |      |                  |     |      |                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------|---|---|---|---|---|----|--------|------|-----|------|----------------------------|------|------|------------------|-----|------|------------------|
|                                         |                                                                                                                          | Responses |   |   |   |   |   |    | Course |      |     |      | MA                         |      |      | All              |     |      |                  |
|                                         |                                                                                                                          | 1D        | 2 | 3 | 4 | 5 | 6 | 7A | N      | Mean | N/A | Med. | Std Dev                    | N    | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q7                                      | The course deepened my understanding of the subject matter                                                               | 0         | 0 | 2 | 0 | 1 | 0 | 10 | 13     | 6.2  | 0   | 7    | 1.48                       | 1.4K | 5.7  | =                | 31K | 5.9  | =                |
| Q8                                      | The content of this course was consistent with the course outline/syllabus                                               | 0         | 0 | 1 | 0 | 1 | 2 | 9  | 13     | 6.4  | 0   | 7    | 1.15                       | 1.4K | 6.2  | =                | 31K | 6.3  | =                |
| Q9                                      | The course provided me with opportunities to demonstrate my understanding of the course material                         | 0         | 0 | 1 | 0 | 2 | 0 | 10 | 13     | 6.4  | 0   | 7    | 1.21                       | 1.4K | 5.9  | =                | 31K | 5.9  | =                |
| Q10                                     | The course helped me to see how subject matter and/or skills could be applied in other areas                             | 0         | 0 | 1 | 1 | 3 | 0 | 8  | 13     | 6.0  | 0   | 7    | 1.36                       | 1.4K | 5.5  | =                | 31K | 5.8  | =                |
| Q11                                     | The course helped me to understand the methods of inquiry, problem solving and/or creative activity in the area of study | 0         | 0 | 0 | 2 | 1 | 1 | 9  | 13     | 6.3  | 0   | 7    | 1.14                       | 1.4K | 5.7  | =                | 31K | 5.7  | =                |
| Q12                                     | The course helped me learn how to analyze information                                                                    | 0         | 0 | 0 | 1 | 1 | 1 | 10 | 13     | 6.5  | 0   | 7    | .93                        | 1.4K | 5.7  | =                | 31K | 5.7  | =                |
| Q13                                     | The course provided opportunities for me to improve my written, oral or other communication skills                       | 0         | 0 | 2 | 0 | 3 | 0 | 8  | 13     | 5.9  | 0   | 7    | 1.49                       | 1.3K | 4.9  | =                | 30K | 5.6  | =                |
| Q14                                     | The course helped me understand that there is more to learn in this area of study                                        | 0         | 0 | 0 | 1 | 2 | 1 | 9  | 13     | 6.4  | 0   | 7    | 1                          | 1.4K | 5.8  | =                | 31K | 6.1  | =                |

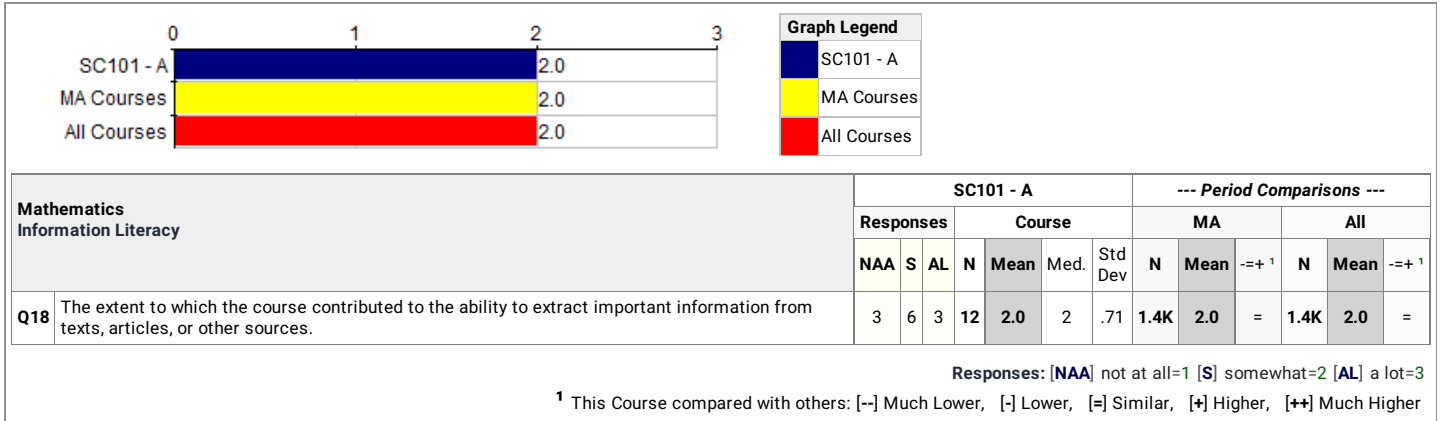
Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

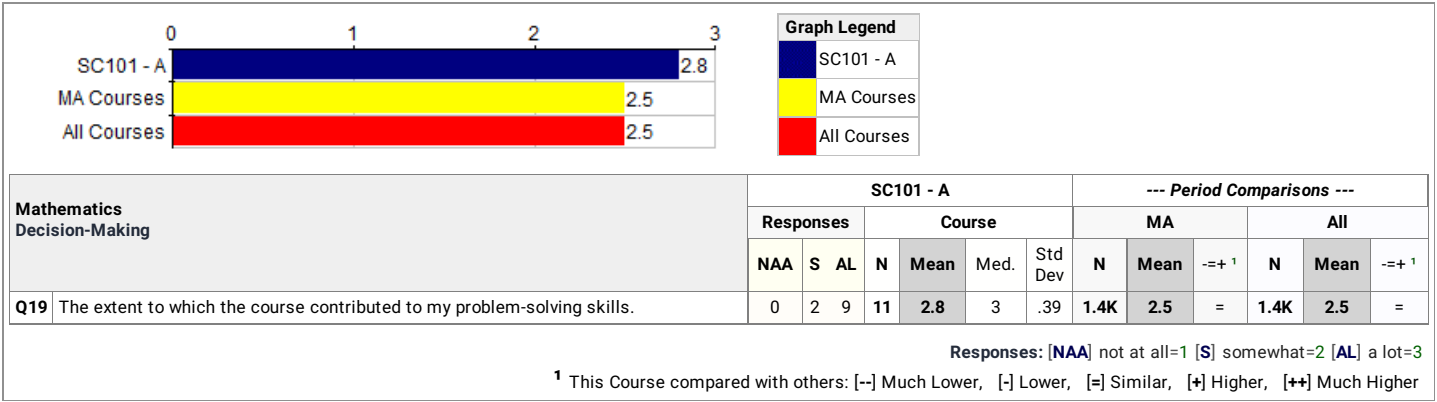


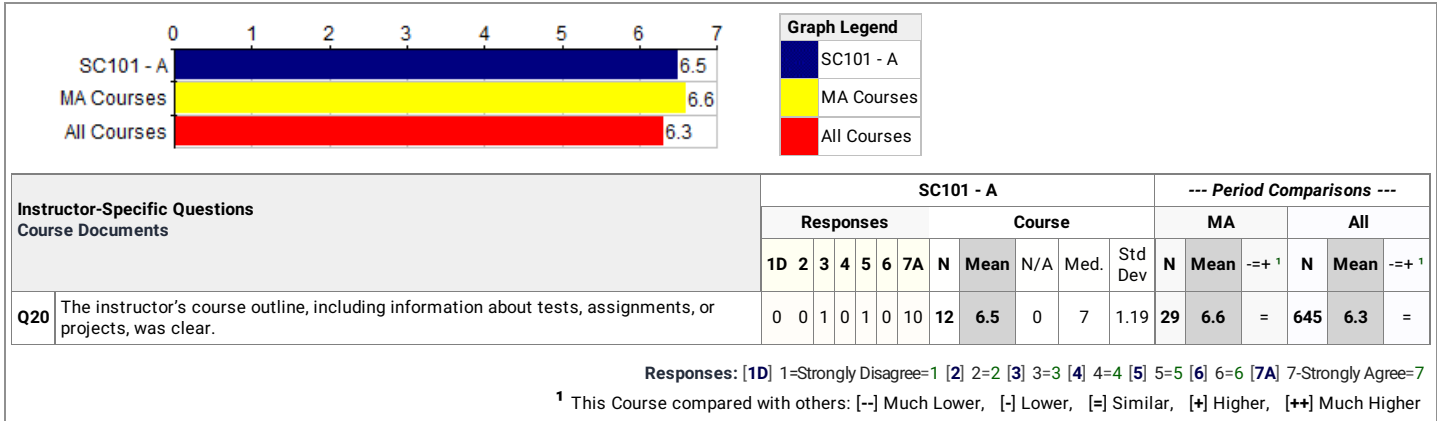


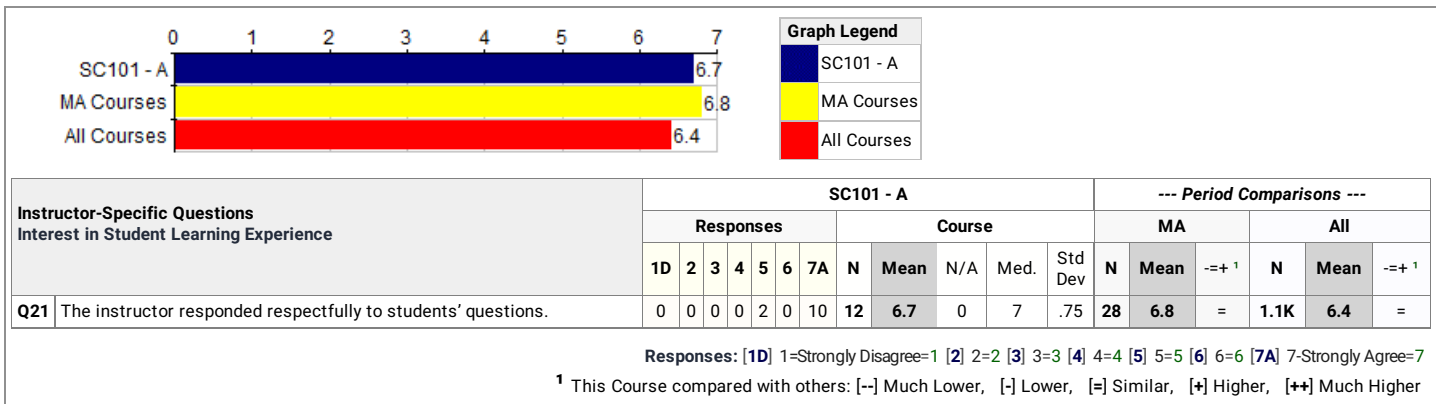


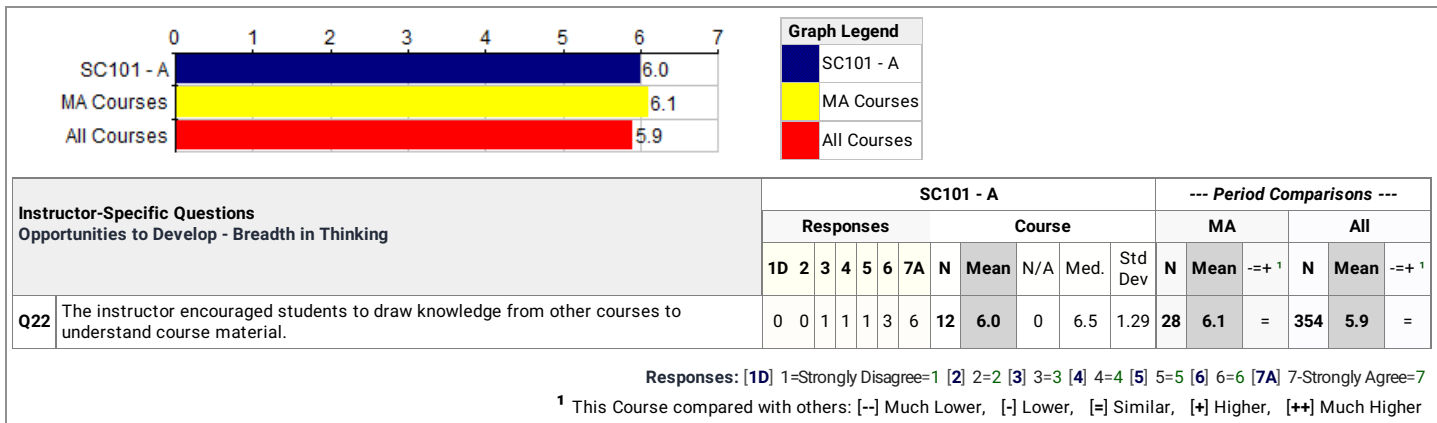


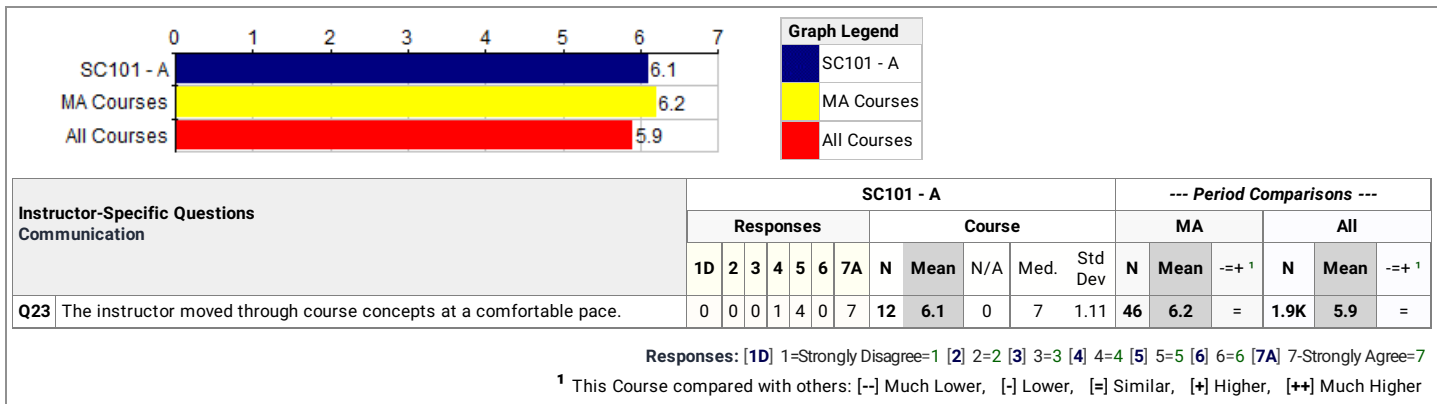


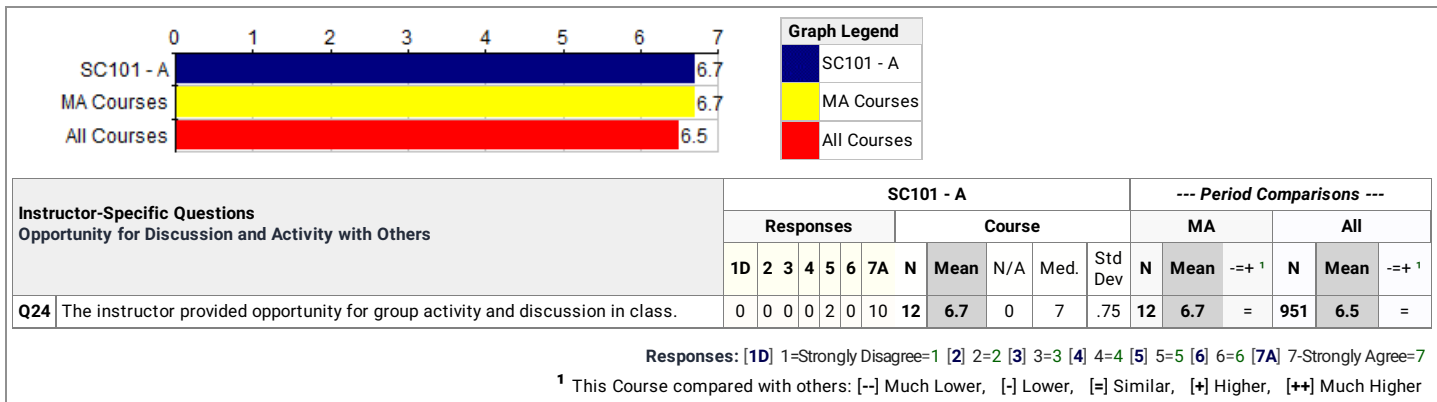


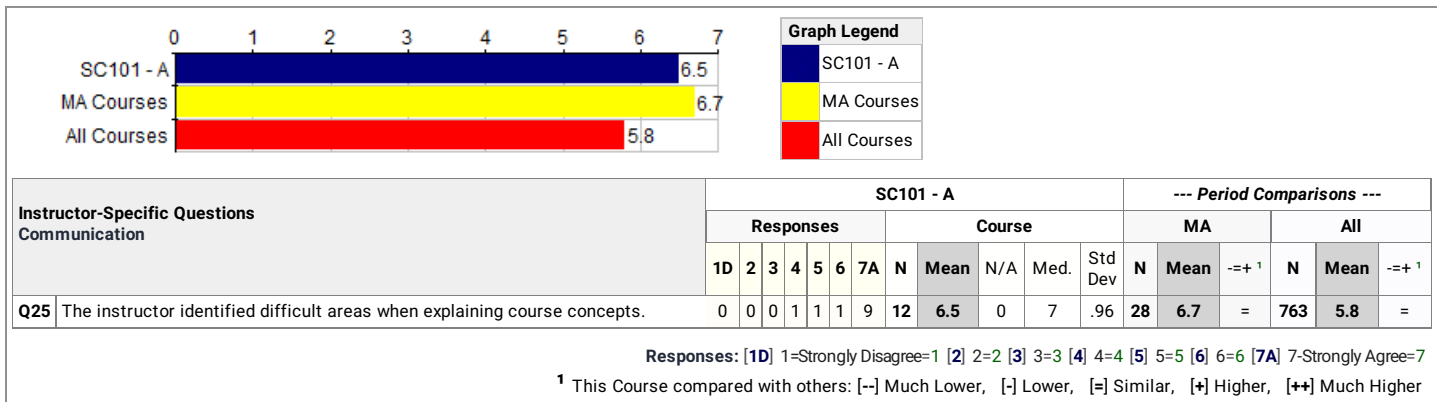


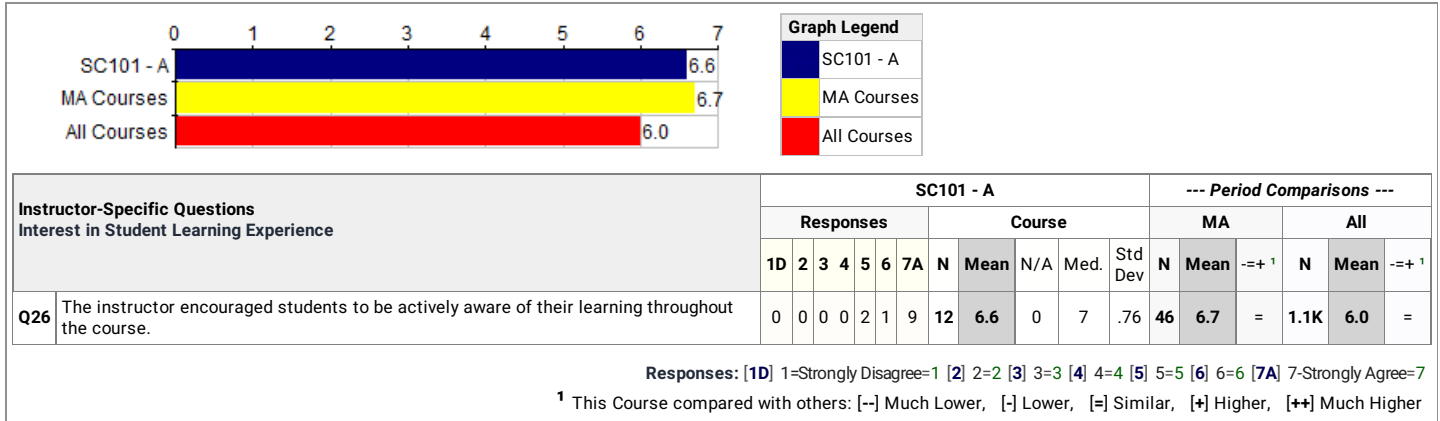




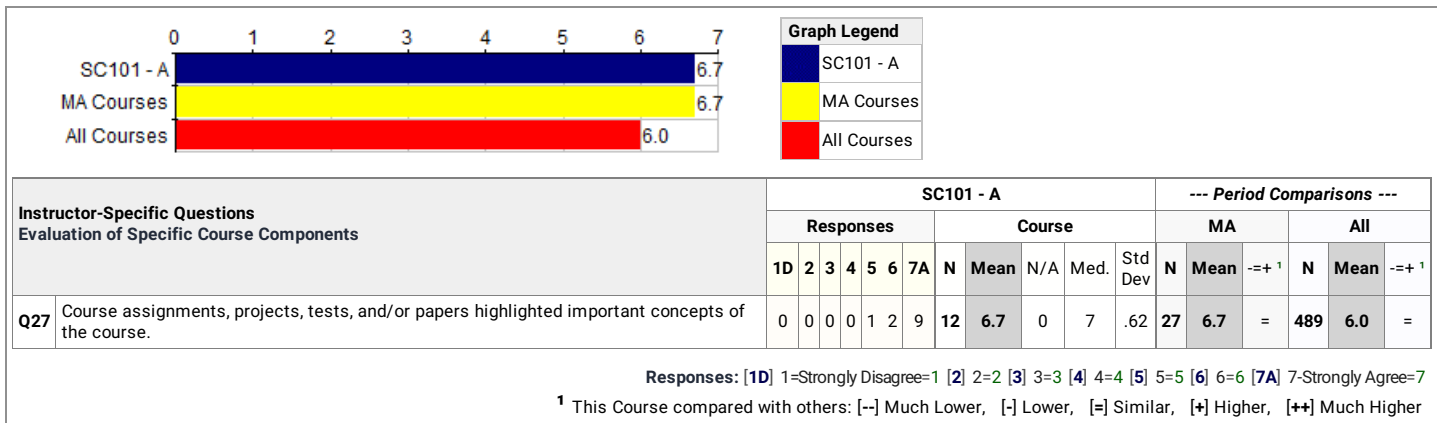


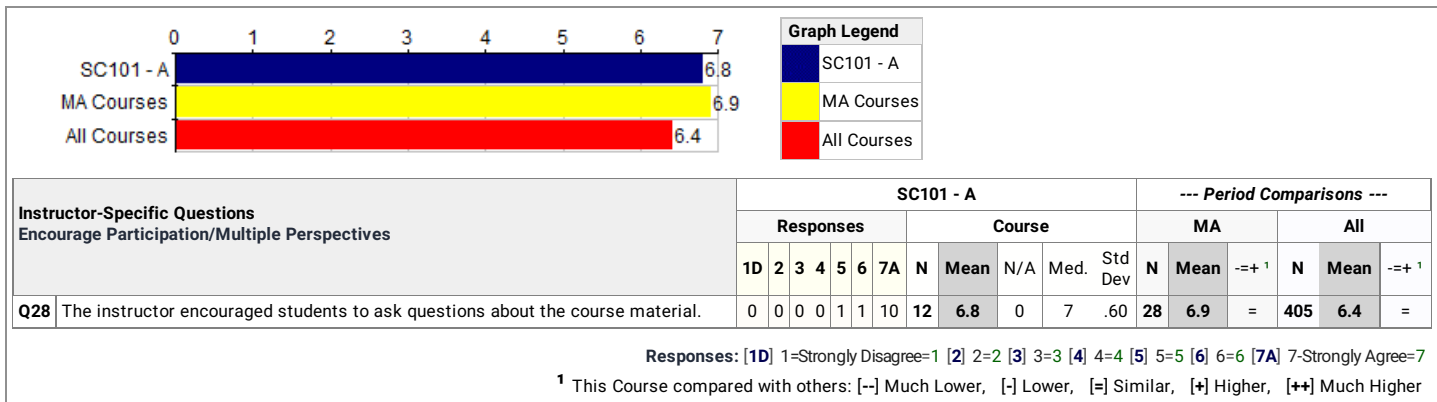


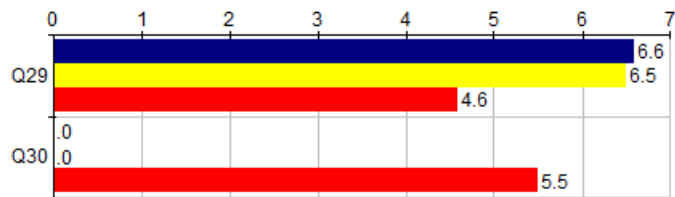












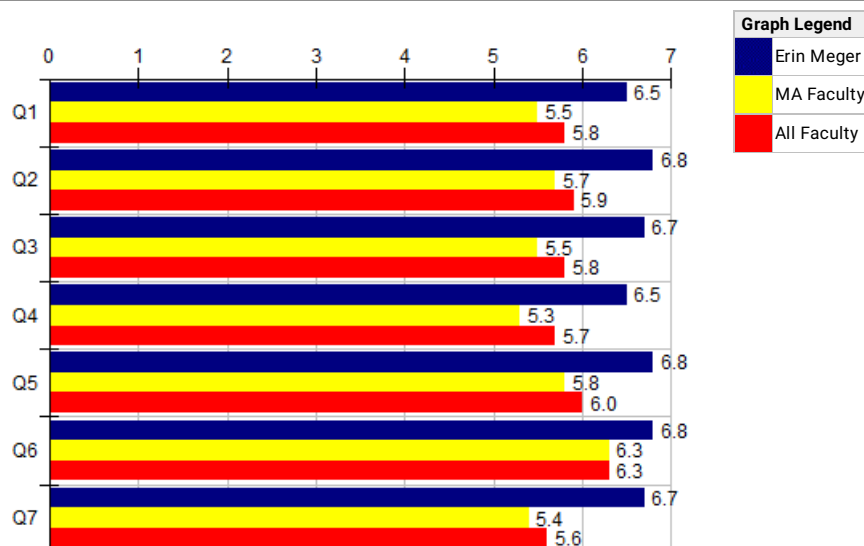
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| <span style="color: yellow;">■</span> | MA Courses  |
| <span style="color: red;">■</span>    | All Courses |

| Instructor-Specific Questions<br>Evaluation of Specific Course Components |                                                                                                                                        | SC101 - A |   |   |   |   |   |    |        |      |     |      | --- Period Comparisons --- |    |      |     |     |      |     |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|---|---|---|---|---|----|--------|------|-----|------|----------------------------|----|------|-----|-----|------|-----|
|                                                                           |                                                                                                                                        | Responses |   |   |   |   |   |    | Course |      |     |      | MA                         |    |      | All |     |      |     |
|                                                                           |                                                                                                                                        | 1D        | 2 | 3 | 4 | 5 | 6 | 7A | N      | Mean | N/A | Med. | Std Dev                    | N  | Mean | ± 1 | N   | Mean | ± 1 |
| Q29                                                                       | The physical environment (e.g. classroom size, room, tables, desks, lighting, etc) provided a space that was conducive to my learning. | 0         | 0 | 0 | 0 | 2 | 1 | 9  | 12     | 6.6  | 0   | 7    | .76                        | 28 | 6.5  | =   | 131 | 4.6  | =   |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

|                             |                                     |                              |                  |
|-----------------------------|-------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | SC101 A - Essential Skills for Math | <b>Department:</b>           | MA               |
| <b>Responsible Faculty:</b> | Erin Meger                          | <b>Responses / Expected:</b> | 13 / 28 (46.43%) |



| B. Questions about the Instructor<br>Instructor |                                                                                            | Erin Meger |   |   |   |   |            |    |    |      |     |      | --- Period Comparisons --- |      |      |                  |     |      |                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------|---|---|---|---|------------|----|----|------|-----|------|----------------------------|------|------|------------------|-----|------|------------------|
|                                                 |                                                                                            | Responses  |   |   |   |   | Individual |    |    |      |     |      | MA                         |      |      | All              |     |      |                  |
|                                                 |                                                                                            | 1D         | 2 | 3 | 4 | 5 | 6          | 7A | N  | Mean | N/A | Med. | Std Dev                    | N    | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q1                                              | The instructor provided opportunities for me to develop my interest in this subject area   | 0          | 0 | 0 | 1 | 1 | 2          | 9  | 13 | 6.5  | 0   | 7    | .93                        | 1.4K | 5.5  | =                | 32K | 5.8  | =                |
| Q2                                              | The instructor provided helpful responses to students' questions and requests for guidance | 0          | 0 | 0 | 0 | 1 | 1          | 11 | 13 | 6.8  | 0   | 7    | .58                        | 1.4K | 5.7  | =                | 32K | 5.9  | =                |
| Q3                                              | The instructor provided opportunities for me to feel engaged in the learning process       | 0          | 0 | 0 | 0 | 2 | 0          | 11 | 13 | 6.7  | 0   | 7    | .72                        | 1.4K | 5.5  | =                | 32K | 5.8  | =                |
| Q4                                              | The instructor gave clear explanations                                                     | 0          | 0 | 0 | 0 | 3 | 0          | 9  | 12 | 6.5  | 0   | 7    | .87                        | 1.4K | 5.3  | =                | 32K | 5.7  | =                |
| Q5                                              | The instructor displayed an interest in and concern for student learning in this course    | 0          | 0 | 0 | 0 | 1 | 0          | 12 | 13 | 6.8  | 0   | 7    | .53                        | 1.4K | 5.8  | =                | 32K | 6.0  | =                |
| Q6                                              | The instructor maintained a respectful learning environment                                | 0          | 0 | 0 | 0 | 1 | 0          | 12 | 13 | 6.8  | 0   | 7    | .53                        | 1.4K | 6.3  | =                | 32K | 6.3  | =                |
| Q7                                              | The instructor provided feedback on my coursework that helped me improve my understanding  | 0          | 0 | 0 | 0 | 2 | 0          | 11 | 13 | 6.7  | 0   | 7    | .72                        | 1.4K | 5.4  | =                | 31K | 5.6  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

| Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor) |                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faculty:</b>                                                                                  | Erin Meger                                                                                                                                                                                                                                                                                 |
| <b>Response Rate:</b>                                                                            | 69.23% (9 of 13)                                                                                                                                                                                                                                                                           |
| 1                                                                                                | the prof made math enjoyable gave great lessons that were clear and was always available for extra help which allowed me to succeed in the course                                                                                                                                          |
| 2                                                                                                | Very engaging and lovely prof!                                                                                                                                                                                                                                                             |
| 3                                                                                                | The instructor was very good at giving feedback and make room for students to improve and do well                                                                                                                                                                                          |
| 4                                                                                                | Shes great                                                                                                                                                                                                                                                                                 |
| 5                                                                                                | Ms. Meger is a very good teacher who really cares about the success of all her students. With regards to how the material was delivered I would have benefited from more taking up of homework problems as a class and less small group work.                                              |
| 6                                                                                                | Love the passion and drive from this professor :) really helped me find my math in pursuing a bio math major :) very thankful for professor like Erin :)                                                                                                                                   |
| 7                                                                                                | Erin was really good and actually made me understand math                                                                                                                                                                                                                                  |
| 8                                                                                                | Erin has been an incredible professor, especially for the introduction to university. She is kind, caring and passionate about what she teaches and her students. It is very evident that Erin liked to see her students succeed and will teach the content for greatest level of success. |
| 9                                                                                                | Erin created a positive environment and always encouraged learning in the classroom.                                                                                                                                                                                                       |

|                             |                                     |                              |                  |
|-----------------------------|-------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | SC101 B - Essential Skills for Math | <b>Department:</b>           | MA               |
| <b>Responsible Faculty:</b> | Erin Meger                          | <b>Responses / Expected:</b> | 17 / 26 (65.38%) |
| <b>Focus:</b>               | <b>Overall Results</b>              |                              |                  |

| A. Demographics Section<br>Demographics |                                           | SC101 - B |   |        |
|-----------------------------------------|-------------------------------------------|-----------|---|--------|
|                                         |                                           | Responses |   | Course |
|                                         |                                           | F         | P | N      |
| <b>Q1</b>                               | Are you a full-time or part-time student? | 17        | 0 | 17     |
| Responses: [F] Full-time [P] Part-time  |                                           |           |   |        |

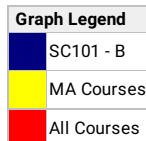
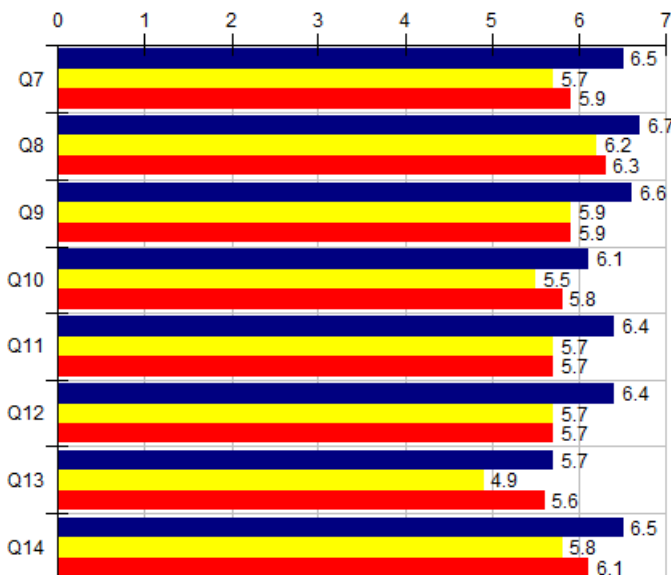
| A. Demographics Section<br>Demographics |                                                                 | SC101 - B |   |        |
|-----------------------------------------|-----------------------------------------------------------------|-----------|---|--------|
|                                         |                                                                 | Responses |   | Course |
|                                         |                                                                 | E         | R | N      |
| <b>Q2</b>                               | Is this course an elective or required course for your program? | 11        | 6 | 17     |
| Responses: [E] Elective [R] Required    |                                                                 |           |   |        |

| A. Demographics Section<br>Demographics                      |                                                                 | SC101 - B |   |   |   |     |        |
|--------------------------------------------------------------|-----------------------------------------------------------------|-----------|---|---|---|-----|--------|
|                                                              |                                                                 | Responses |   |   |   |     | Course |
|                                                              |                                                                 | 0-9       | 1 | 2 | 3 | >40 | N      |
| <b>Q3</b>                                                    | How many one-term courses had you completed prior to this term? | 17        | 0 | 0 | 0 | 0   | 17     |
| Responses: [0-9] 0-9 [1] 10-19 [2] 20-29 [3] 30-39 [>40] >40 |                                                                 |           |   |   |   |     |        |

| A. Demographics Section<br>Demographics                                                                                                          |                                                    | SC101 - B |     |     |     |    |   |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------|-----|-----|-----|----|---|--------|
|                                                                                                                                                  |                                                    | Responses |     |     |     |    |   | Course |
|                                                                                                                                                  |                                                    | AN        | LTH | AHT | MTH | AA | A | N      |
| <b>Q4</b>                                                                                                                                        | In terms of my class attendance, I attended class: | 0         | 0   | 2   | 1   | 7  | 7 | 17     |
| Responses: [AN] almost never [LTH] less than half the time [AHT] about half the time [MTH] more than half the time [AA] almost always [A] always |                                                    |           |     |     |     |    |   |        |

| A. Demographics Section<br>Demographics        |                                                                                               | SC101 - B |   |   |        |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------|---|---|--------|
|                                                |                                                                                               | Responses |   |   | Course |
|                                                |                                                                                               | L         | S | H | N      |
| <b>Q5</b>                                      | Compared to other courses at this level in this discipline, the workload for this course was: | 3         | 9 | 5 | 17     |
| Responses: [L] lighter [S] similar [H] heavier |                                                                                               |           |   |   |        |

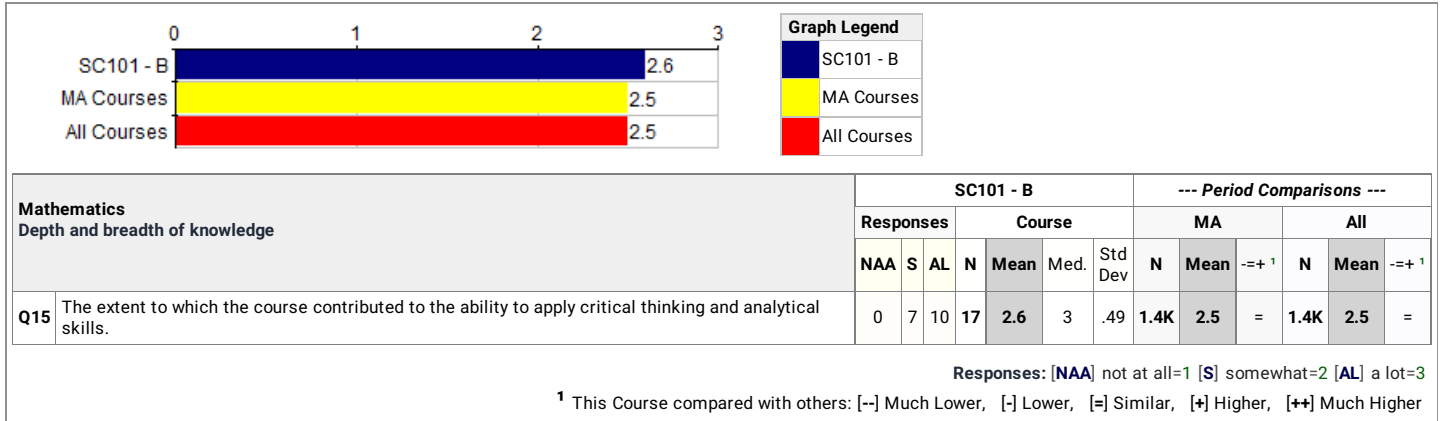
| A. Demographics Section<br>Demographics         |                                        | SC101 - B |     |        |
|-------------------------------------------------|----------------------------------------|-----------|-----|--------|
|                                                 |                                        | Responses |     | Course |
|                                                 |                                        | IC        | OOC | N      |
| <b>Q6</b>                                       | Where did you complete the evaluation? | 9         | 8   | 17     |
| Responses: [IC] In class [OOC] Outside of class |                                        |           |     |        |

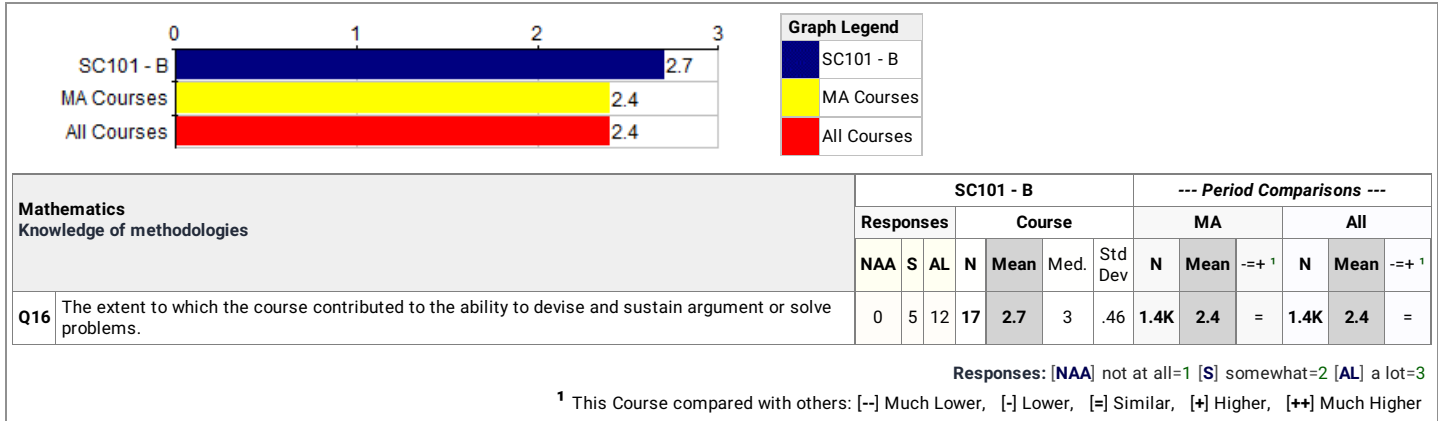


| C. Questions about the course<br>Course |                                                                                                                          | SC101 - B |   |   |   |   |   |        |    |      |     |      | --- Period Comparisons --- |      |      |                  |     |      |                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------|---|---|---|---|---|--------|----|------|-----|------|----------------------------|------|------|------------------|-----|------|------------------|
|                                         |                                                                                                                          | Responses |   |   |   |   |   | Course |    |      |     |      | MA                         |      |      | All              |     |      |                  |
|                                         |                                                                                                                          | 1D        | 2 | 3 | 4 | 5 | 6 | 7A     | N  | Mean | N/A | Med. | Std Dev                    | N    | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q7                                      | The course deepened my understanding of the subject matter                                                               | 0         | 0 | 0 | 1 | 1 | 4 | 11     | 17 | 6.5  | 0   | 7    | .85                        | 1.4K | 5.7  | =                | 31K | 5.9  | =                |
| Q8                                      | The content of this course was consistent with the course outline/syllabus                                               | 0         | 0 | 0 | 0 | 1 | 3 | 13     | 17 | 6.7  | 0   | 7    | .57                        | 1.4K | 6.2  | =                | 31K | 6.3  | =                |
| Q9                                      | The course provided me with opportunities to demonstrate my understanding of the course material                         | 0         | 0 | 0 | 0 | 2 | 3 | 12     | 17 | 6.6  | 0   | 7    | .69                        | 1.4K | 5.9  | =                | 31K | 5.9  | =                |
| Q10                                     | The course helped me to see how subject matter and/or skills could be applied in other areas                             | 0         | 0 | 0 | 2 | 2 | 5 | 8      | 17 | 6.1  | 0   | 6    | 1.02                       | 1.4K | 5.5  | =                | 31K | 5.8  | =                |
| Q11                                     | The course helped me to understand the methods of inquiry, problem solving and/or creative activity in the area of study | 0         | 0 | 0 | 0 | 3 | 5 | 9      | 17 | 6.4  | 0   | 7    | .76                        | 1.4K | 5.7  | =                | 31K | 5.7  | =                |
| Q12                                     | The course helped me learn how to analyze information                                                                    | 0         | 0 | 1 | 1 | 0 | 4 | 11     | 17 | 6.4  | 0   | 7    | 1.13                       | 1.4K | 5.7  | =                | 31K | 5.7  | =                |
| Q13                                     | The course provided opportunities for me to improve my written, oral or other communication skills                       | 0         | 1 | 0 | 1 | 4 | 2 | 6      | 14 | 5.7  | 3   | 6    | 1.44                       | 1.3K | 4.9  | =                | 30K | 5.6  | =                |
| Q14                                     | The course helped me understand that there is more to learn in this area of study                                        | 0         | 0 | 0 | 0 | 2 | 4 | 11     | 17 | 6.5  | 0   | 7    | .70                        | 1.4K | 5.8  | =                | 31K | 6.1  | =                |

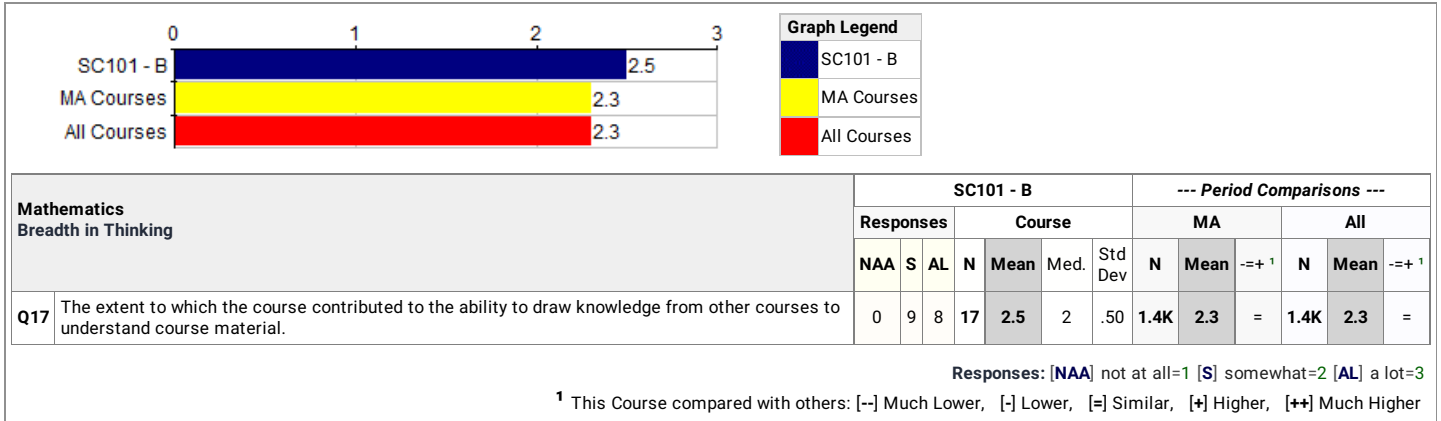
Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

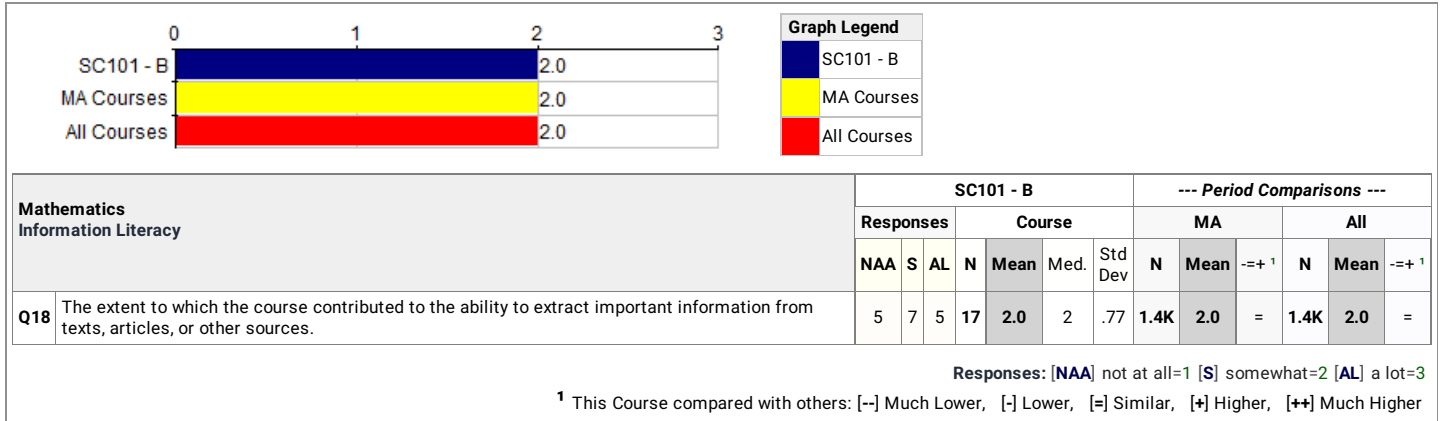
<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

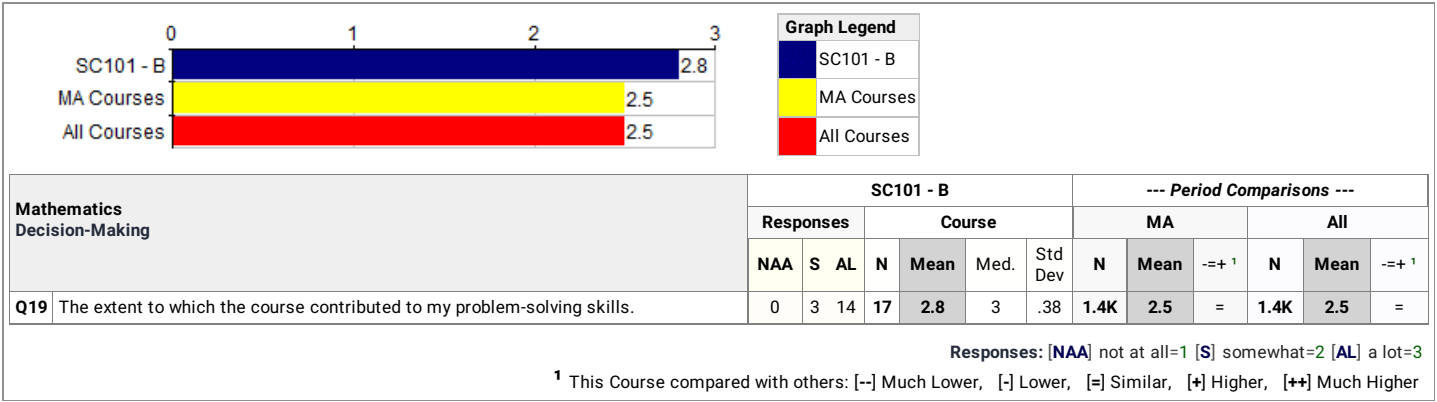


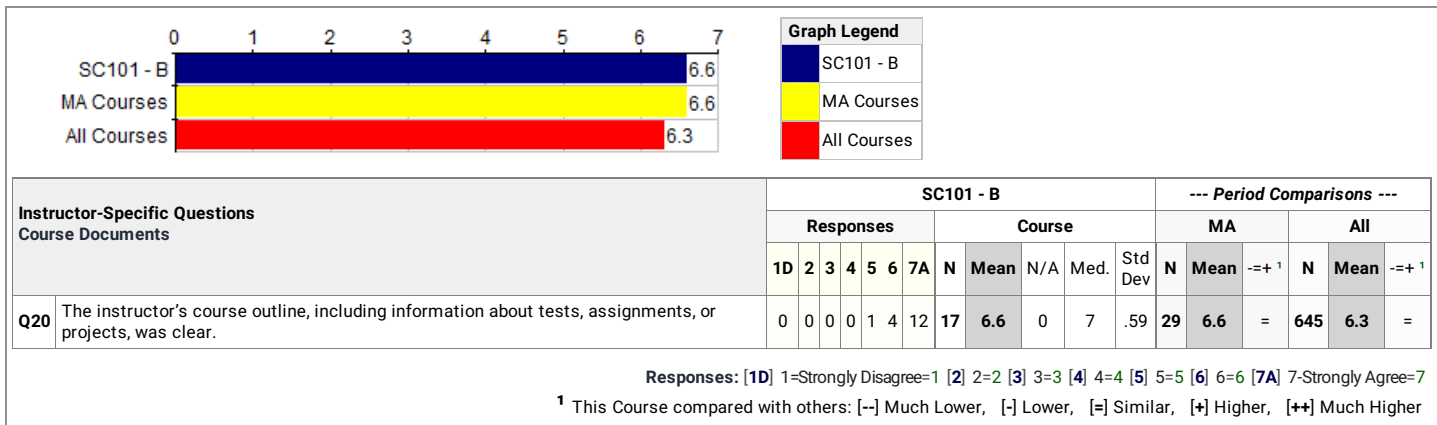


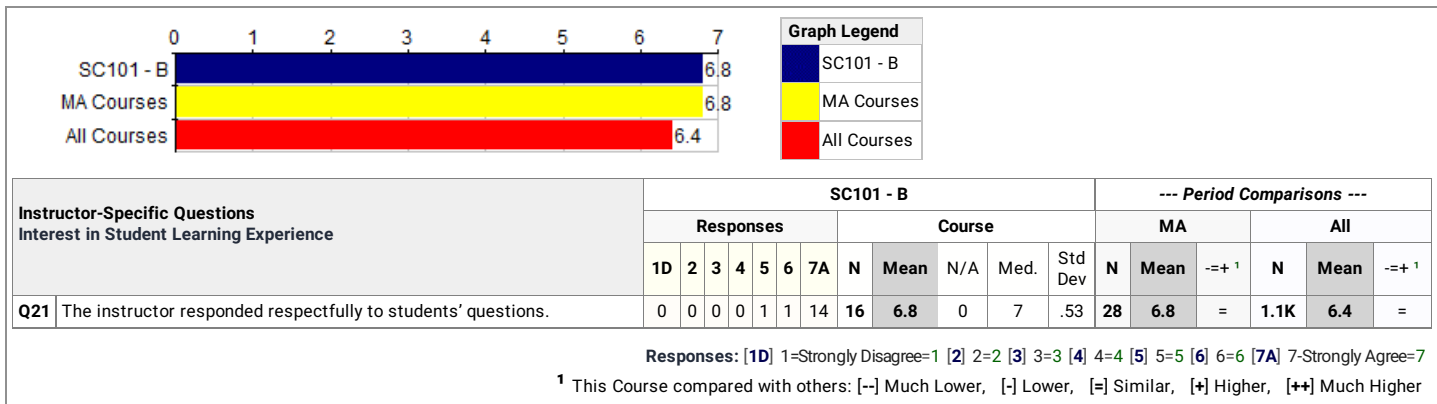


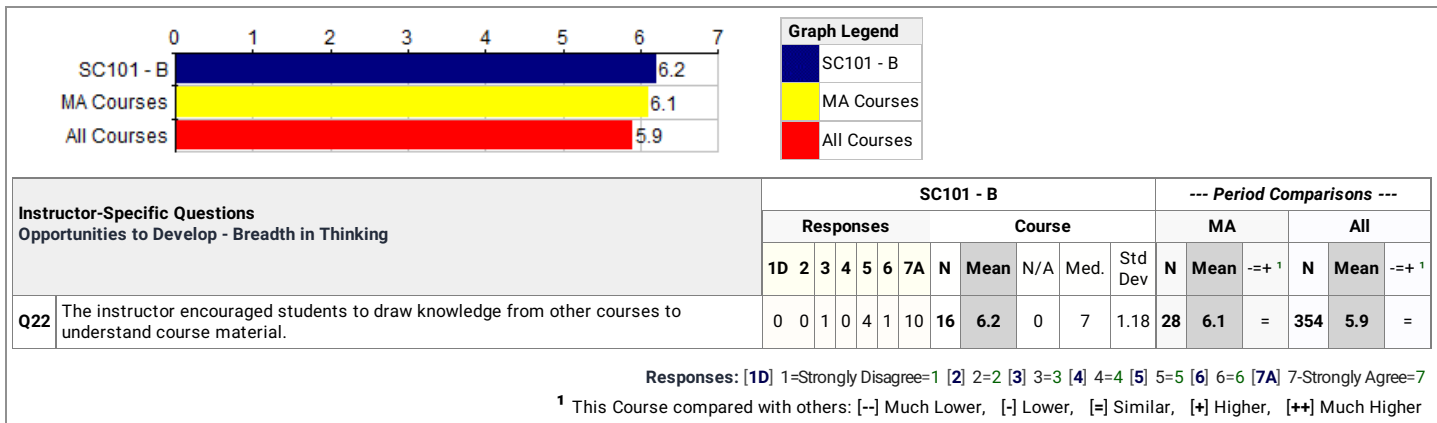


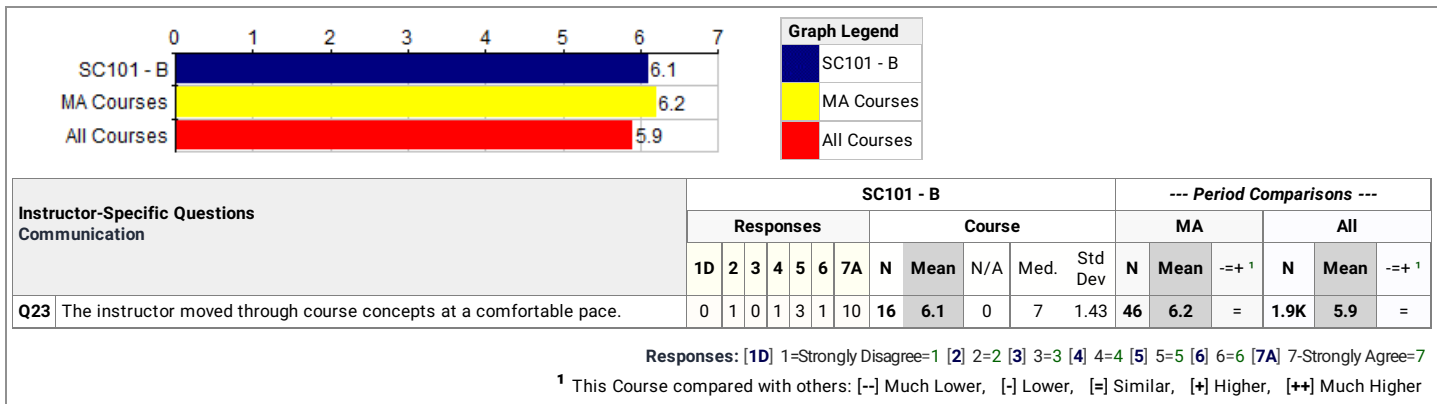


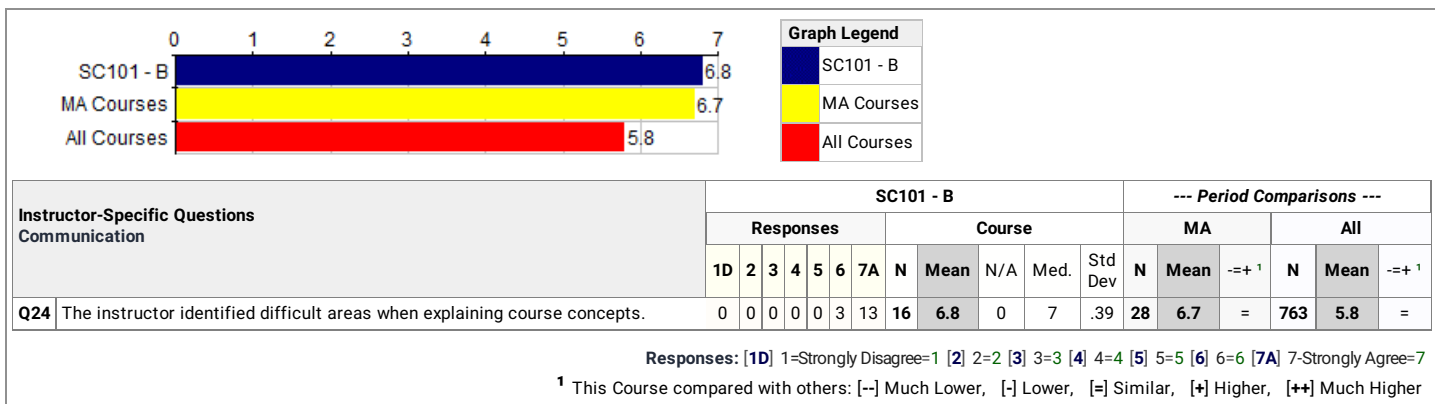




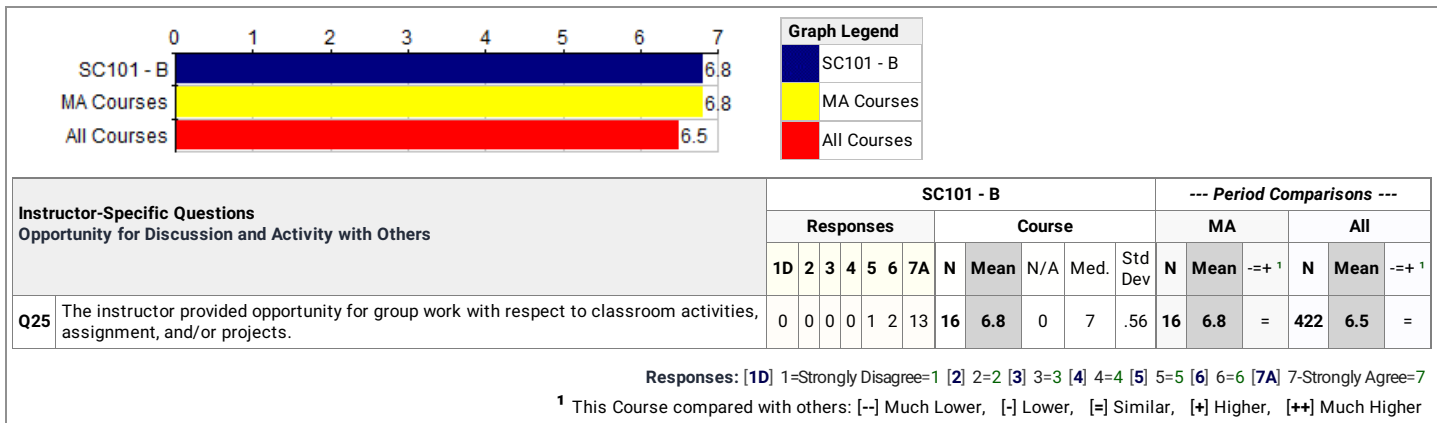


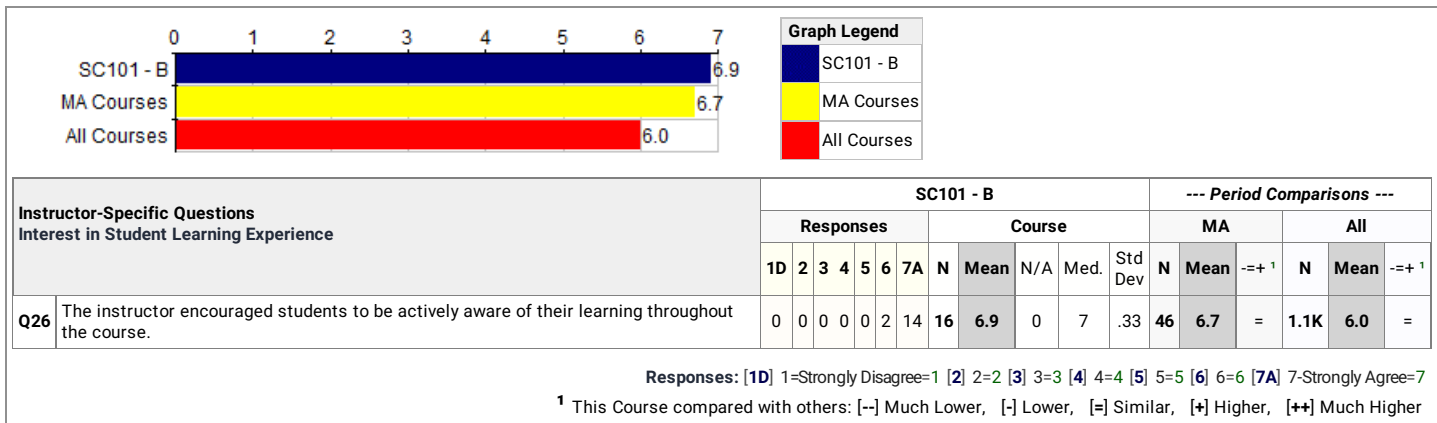


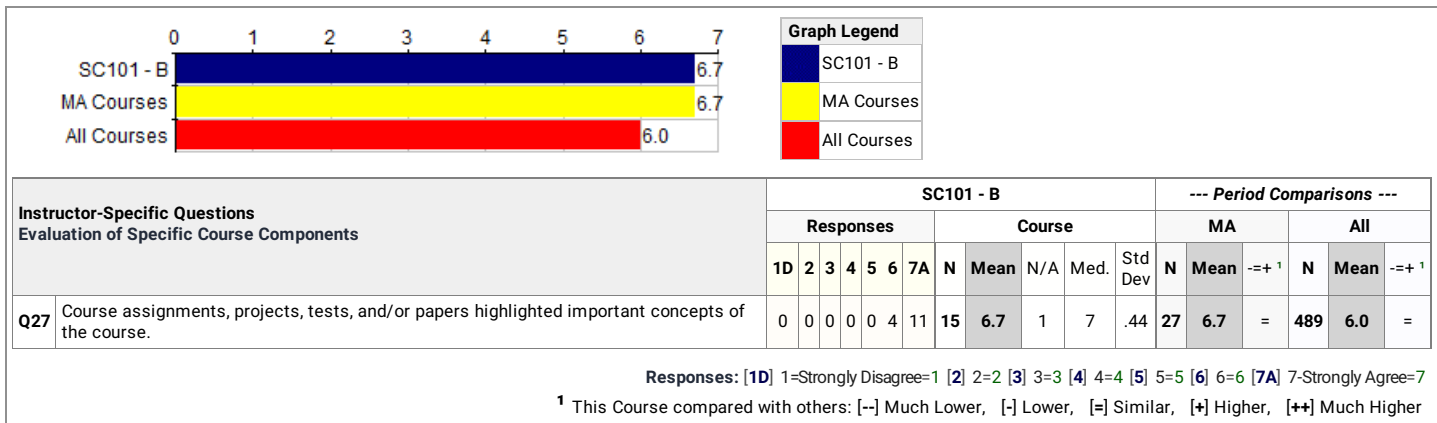


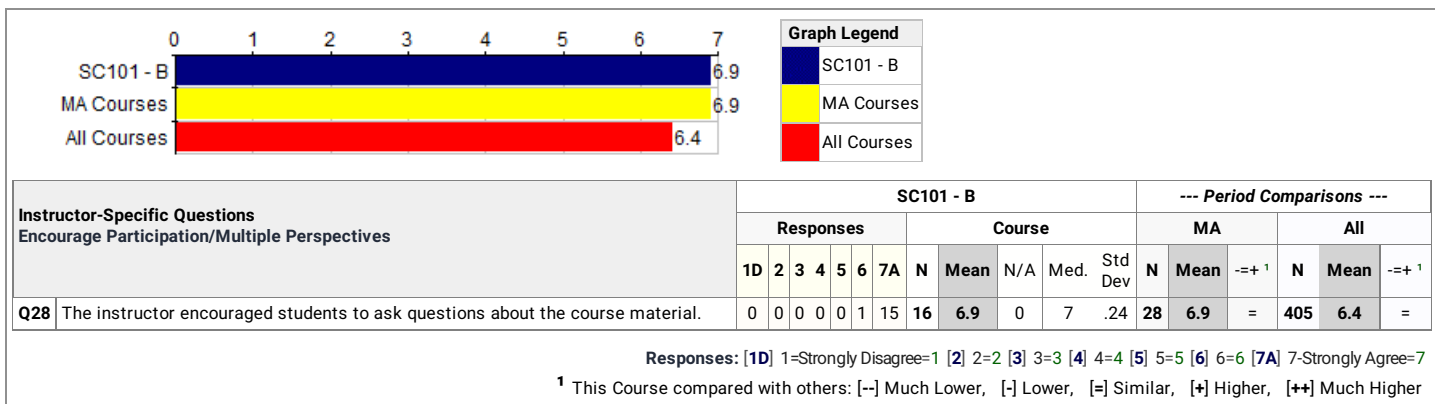


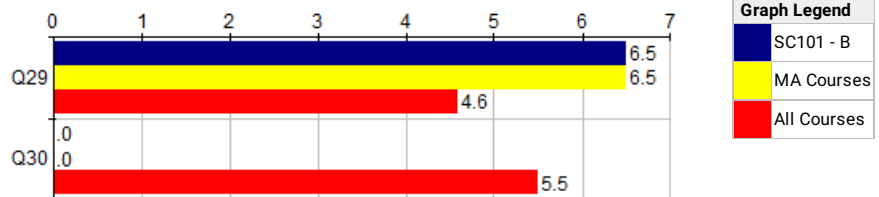










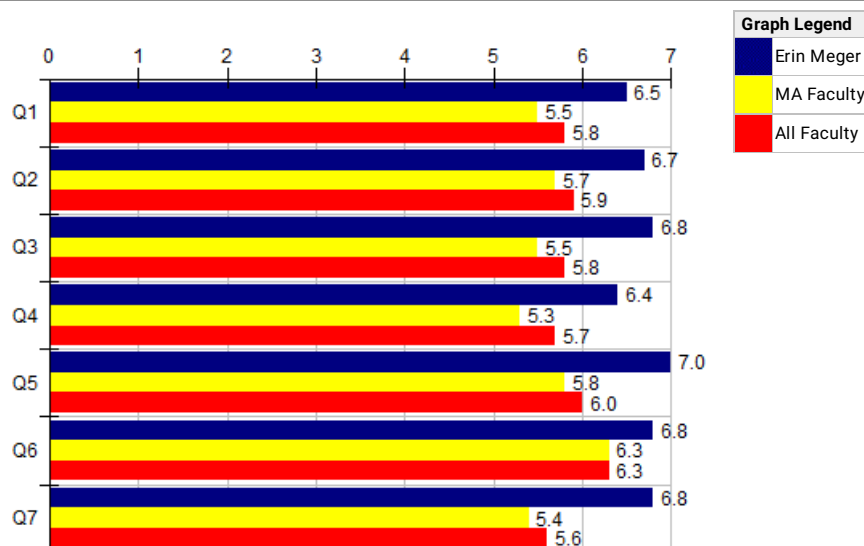


| Instructor-Specific Questions<br>Evaluation of Specific Course Components |                                                                                                                                        | SC101 - B |   |   |   |   |   |        |    |      |     |      | --- Period Comparisons --- |    |      |                  |     |      |                  |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|---|---|---|---|---|--------|----|------|-----|------|----------------------------|----|------|------------------|-----|------|------------------|
|                                                                           |                                                                                                                                        | Responses |   |   |   |   |   | Course |    |      |     |      | MA                         |    |      | All              |     |      |                  |
|                                                                           |                                                                                                                                        | 1D        | 2 | 3 | 4 | 5 | 6 | 7A     | N  | Mean | N/A | Med. | Std Dev                    | N  | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q29                                                                       | The physical environment (e.g. classroom size, room, tables, desks, lighting, etc) provided a space that was conducive to my learning. | 0         | 0 | 0 | 1 | 1 | 3 | 11     | 16 | 6.5  | 0   | 7    | .87                        | 28 | 6.5  | =                | 131 | 4.6  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

|                             |                                     |                              |                  |
|-----------------------------|-------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | SC101 B - Essential Skills for Math | <b>Department:</b>           | MA               |
| <b>Responsible Faculty:</b> | Erin Meger                          | <b>Responses / Expected:</b> | 17 / 26 (65.38%) |



| B. Questions about the Instructor<br>Instructor |                                                                                            | Erin Meger |   |   |   |   |   |            |    |      |     |      | --- Period Comparisons --- |      |      |                  |     |      |                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------|---|---|---|---|---|------------|----|------|-----|------|----------------------------|------|------|------------------|-----|------|------------------|
|                                                 |                                                                                            | Responses  |   |   |   |   |   | Individual |    |      |     |      | MA                         |      |      | All              |     |      |                  |
|                                                 |                                                                                            | 1D         | 2 | 3 | 4 | 5 | 6 | 7A         | N  | Mean | N/A | Med. | Std Dev                    | N    | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q1                                              | The instructor provided opportunities for me to develop my interest in this subject area   | 0          | 0 | 0 | 0 | 2 | 4 | 11         | 17 | 6.5  | 0   | 7    | .70                        | 1.4K | 5.5  | =                | 32K | 5.8  | =                |
| Q2                                              | The instructor provided helpful responses to students' questions and requests for guidance | 0          | 0 | 0 | 0 | 1 | 3 | 13         | 17 | 6.7  | 0   | 7    | .57                        | 1.4K | 5.7  | =                | 32K | 5.9  | =                |
| Q3                                              | The instructor provided opportunities for me to feel engaged in the learning process       | 0          | 0 | 0 | 0 | 0 | 3 | 13         | 16 | 6.8  | 0   | 7    | .39                        | 1.4K | 5.5  | =                | 32K | 5.8  | =                |
| Q4                                              | The instructor gave clear explanations                                                     | 0          | 0 | 1 | 0 | 1 | 5 | 10         | 17 | 6.4  | 0   | 7    | 1.03                       | 1.4K | 5.3  | =                | 32K | 5.7  | =                |
| Q5                                              | The instructor displayed an interest in and concern for student learning in this course    | 0          | 0 | 0 | 0 | 0 | 0 | 17         | 17 | 7.0  | 0   | 7    | 0                          | 1.4K | 5.8  | =                | 32K | 6.0  | =                |
| Q6                                              | The instructor maintained a respectful learning environment                                | 0          | 0 | 0 | 0 | 1 | 1 | 15         | 17 | 6.8  | 0   | 7    | .51                        | 1.4K | 6.3  | =                | 32K | 6.3  | =                |
| Q7                                              | The instructor provided feedback on my coursework that helped me improve my understanding  | 0          | 0 | 0 | 0 | 1 | 2 | 14         | 17 | 6.8  | 0   | 7    | .55                        | 1.4K | 5.4  | =                | 31K | 5.6  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

**Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor)**

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faculty:</b>       | Erin Meger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Response Rate:</b> | 35.29% (6 of 17)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1                     | Really helpful since I hadn't had math in almost 2 years and never took calculus                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2                     | I really loved being in this class and I know my math knowledge has been more solidified. I always felt like I could come to you with questions which I have struggled with in the past. I think this course was taught very well as I know my knowledge on many aspects has been clarified. The only thing I would suggest is spending more in depth time in the trig unit since the only way I was able to really finish this units homework was because of my knowledge from grade 12. Otherwise I really enjoyed having you as my instructor! |
| 3                     | Erin is always there to help. She always says no matter what time of day, send her and email and she will try to help as best as she can                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4                     | Despite my love of math, this is the first math class in my life that I haven't dreaded going to as I really enjoyed having you as an instructor. I appreciate everything you have done for me, as well as my peers, this semester. Even though I won't be continuing on with math, as I am doing a program change that doesn't require math courses, I feel as though I would've been extremely well prepared to do the MA100 class as a result of your excellent teaching. Thank you once again for an amazing semester!                        |
| 5                     | Best teacher I've had!                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6                     | A very nice person, a great teacher, good things all around                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                             |                                       |                              |               |
|-----------------------------|---------------------------------------|------------------------------|---------------|
| <b>Course:</b>              | CP367 A - Intro to System Programming | <b>Department:</b>           | PC            |
| <b>Responsible Faculty:</b> | Erin Meger                            | <b>Responses / Expected:</b> | 21 / 70 (30%) |
| <b>Focus:</b>               | <b>Overall Results</b>                |                              |               |

| A. Demographics Section<br>Demographics |                                           | CP367 - A |   |        |
|-----------------------------------------|-------------------------------------------|-----------|---|--------|
|                                         |                                           | Responses |   | Course |
|                                         |                                           | F         | P | N      |
| <b>Q1</b>                               | Are you a full-time or part-time student? | 20        | 1 | 21     |
| Responses: [F] Full-time [P] Part-time  |                                           |           |   |        |

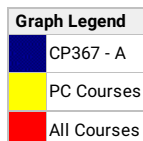
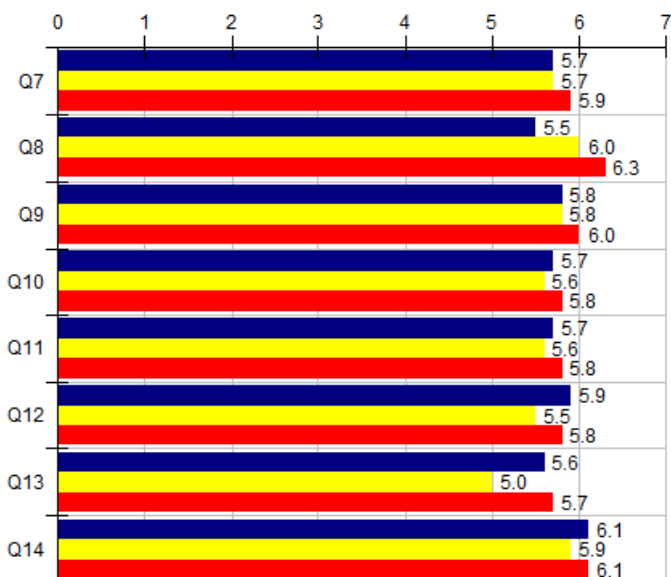
| A. Demographics Section<br>Demographics |                                                                 | CP367 - A |   |        |
|-----------------------------------------|-----------------------------------------------------------------|-----------|---|--------|
|                                         |                                                                 | Responses |   | Course |
|                                         |                                                                 | E         | R | N      |
| <b>Q2</b>                               | Is this course an elective or required course for your program? | 15        | 6 | 21     |
| Responses: [E] Elective [R] Required    |                                                                 |           |   |        |

| A. Demographics Section<br>Demographics                      |                                                                 | CP367 - A |   |    |   |     |        |
|--------------------------------------------------------------|-----------------------------------------------------------------|-----------|---|----|---|-----|--------|
|                                                              |                                                                 | Responses |   |    |   |     | Course |
|                                                              |                                                                 | 0-9       | 1 | 2  | 3 | >40 | N      |
| <b>Q3</b>                                                    | How many one-term courses had you completed prior to this term? | 0         | 3 | 14 | 2 | 2   | 21     |
| Responses: [0-9] 0-9 [1] 10-19 [2] 20-29 [3] 30-39 [>40] >40 |                                                                 |           |   |    |   |     |        |

| A. Demographics Section<br>Demographics                                                                                                          |                                                    | CP367 - A |     |     |     |    |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------|-----|-----|-----|----|--------|
|                                                                                                                                                  |                                                    | Responses |     |     |     |    | Course |
|                                                                                                                                                  |                                                    | AN        | LTH | AHT | MTH | AA | A      |
| <b>Q4</b>                                                                                                                                        | In terms of my class attendance, I attended class: | 0         | 2   | 2   | 2   | 7  | 8      |
| Responses: [AN] almost never [LTH] less than half the time [AHT] about half the time [MTH] more than half the time [AA] almost always [A] always |                                                    |           |     |     |     |    |        |

| A. Demographics Section<br>Demographics        |                                                                                               | CP367 - A |    |   |        |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------|----|---|--------|
|                                                |                                                                                               | Responses |    |   | Course |
|                                                |                                                                                               | L         | S  | H | N      |
| <b>Q5</b>                                      | Compared to other courses at this level in this discipline, the workload for this course was: | 5         | 15 | 0 | 20     |
| Responses: [L] lighter [S] similar [H] heavier |                                                                                               |           |    |   |        |

| A. Demographics Section<br>Demographics         |                                        | CP367 - A |     |        |
|-------------------------------------------------|----------------------------------------|-----------|-----|--------|
|                                                 |                                        | Responses |     | Course |
|                                                 |                                        | IC        | OOC | N      |
| <b>Q6</b>                                       | Where did you complete the evaluation? | 1         | 20  | 21     |
| Responses: [IC] In class [OOC] Outside of class |                                        |           |     |        |

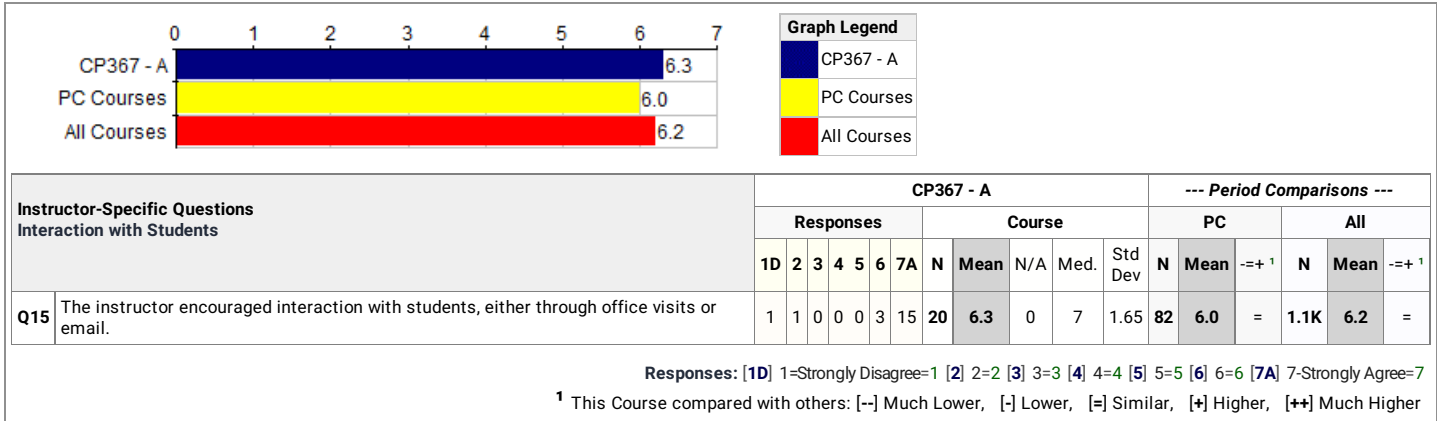


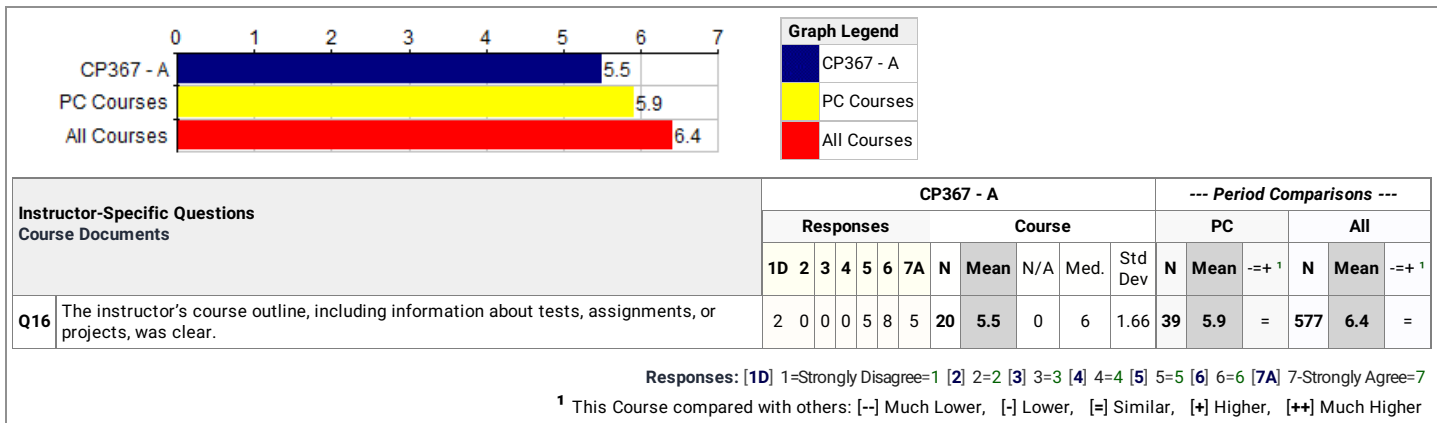
| C. Questions about the course<br>Course |                                                                                                                          | CP367 - A |   |   |   |   |        |    |    |      |     | --- Period Comparisons --- |         |     |      |                  |     |      |                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------|---|---|---|---|--------|----|----|------|-----|----------------------------|---------|-----|------|------------------|-----|------|------------------|
|                                         |                                                                                                                          | Responses |   |   |   |   | Course |    |    |      |     | PC                         |         |     | All  |                  |     |      |                  |
|                                         |                                                                                                                          | 1D        | 2 | 3 | 4 | 5 | 6      | 7A | N  | Mean | N/A | Med.                       | Std Dev | N   | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q7                                      | The course deepened my understanding of the subject matter                                                               | 1         | 1 | 0 | 2 | 4 | 2      | 11 | 21 | 5.7  | 0   | 7                          | 1.72    | 786 | 5.7  | =                | 25K | 5.9  | =                |
| Q8                                      | The content of this course was consistent with the course outline/syllabus                                               | 2         | 0 | 0 | 2 | 5 | 4      | 8  | 21 | 5.5  | 0   | 6                          | 1.76    | 782 | 6.0  | =                | 25K | 6.3  | =                |
| Q9                                      | The course provided me with opportunities to demonstrate my understanding of the course material                         | 2         | 0 | 0 | 1 | 2 | 6      | 10 | 21 | 5.8  | 0   | 6                          | 1.76    | 782 | 5.8  | =                | 25K | 6.0  | =                |
| Q10                                     | The course helped me to see how subject matter and/or skills could be applied in other areas                             | 2         | 0 | 0 | 1 | 2 | 7      | 8  | 20 | 5.7  | 0   | 6                          | 1.76    | 777 | 5.6  | =                | 25K | 5.8  | =                |
| Q11                                     | The course helped me to understand the methods of inquiry, problem solving and/or creative activity in the area of study | 2         | 0 | 0 | 1 | 3 | 5      | 9  | 20 | 5.7  | 0   | 6                          | 1.79    | 772 | 5.6  | =                | 25K | 5.8  | =                |
| Q12                                     | The course helped me learn how to analyze information                                                                    | 1         | 0 | 0 | 1 | 3 | 5      | 8  | 18 | 5.9  | 2   | 6                          | 1.49    | 754 | 5.5  | =                | 25K | 5.8  | =                |
| Q13                                     | The course provided opportunities for me to improve my written, oral or other communication skills                       | 1         | 0 | 0 | 1 | 4 | 4      | 5  | 15 | 5.6  | 5   | 6                          | 1.54    | 663 | 5.0  | =                | 24K | 5.7  | =                |
| Q14                                     | The course helped me understand that there is more to learn in this area of study                                        | 1         | 0 | 0 | 0 | 4 | 5      | 10 | 20 | 6.1  | 0   | 6.5                        | 1.40    | 776 | 5.9  | =                | 25K | 6.1  | =                |

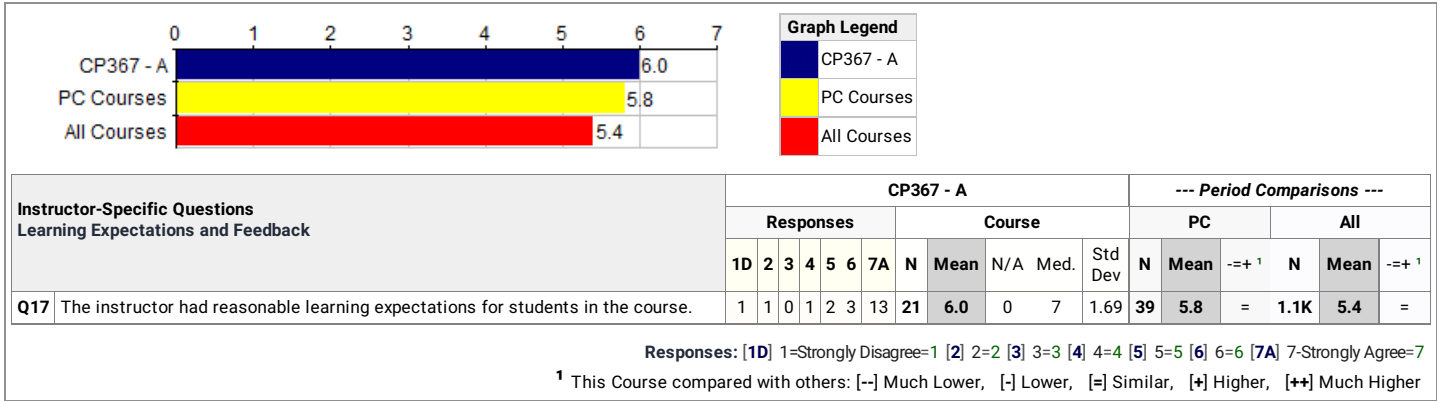
Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

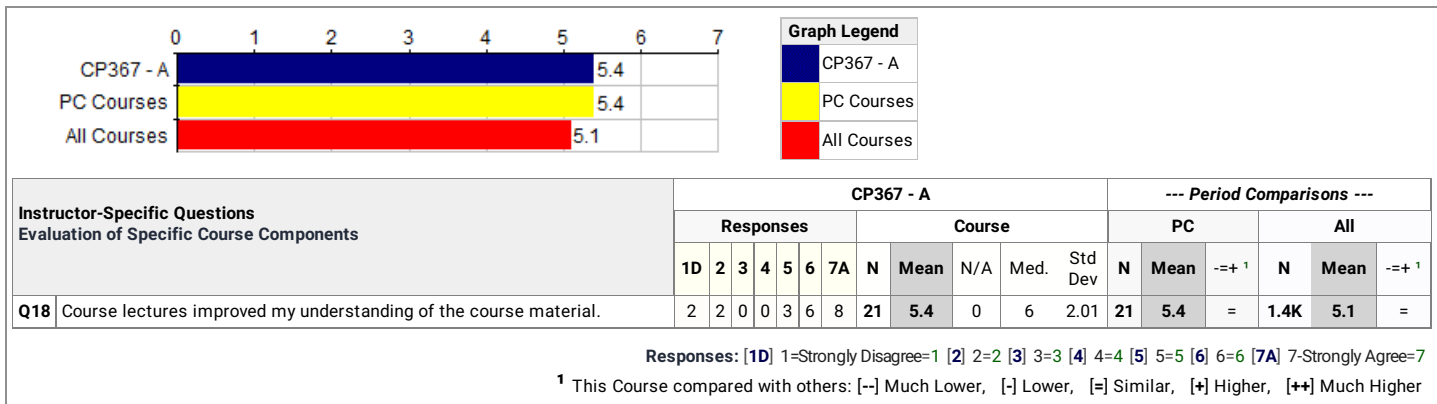
<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

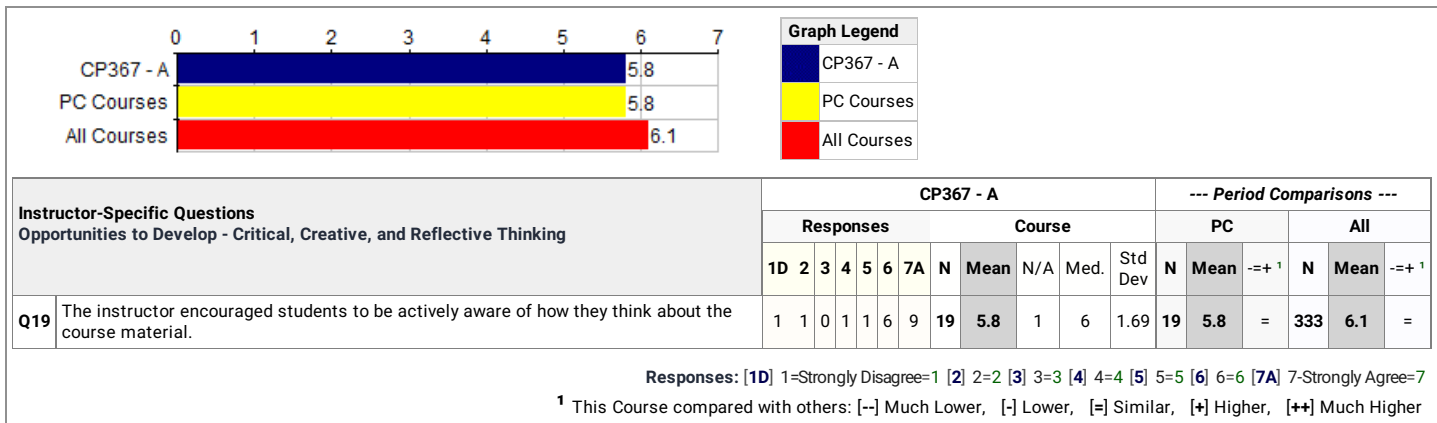


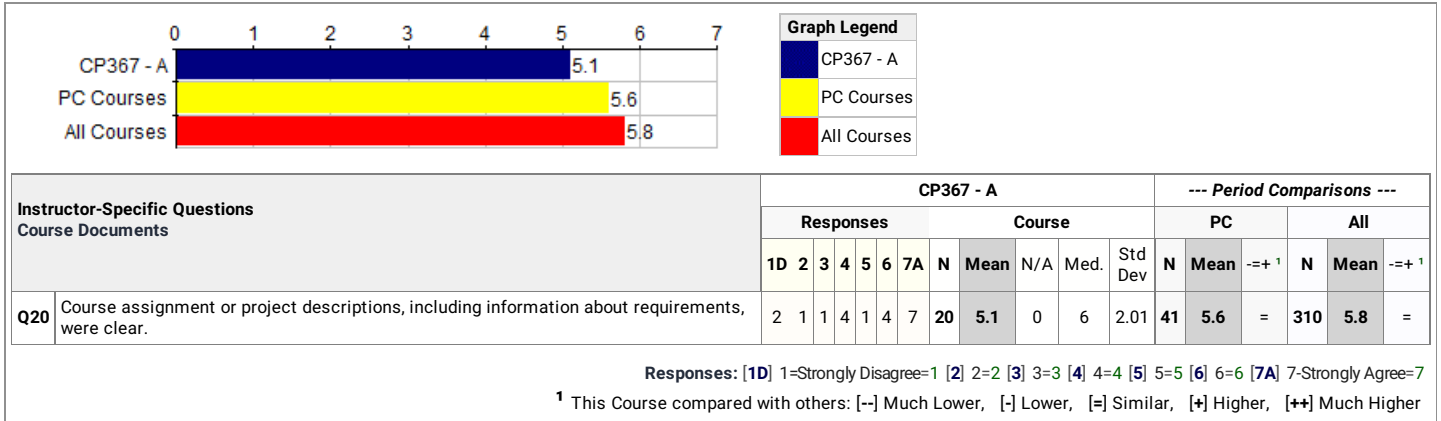


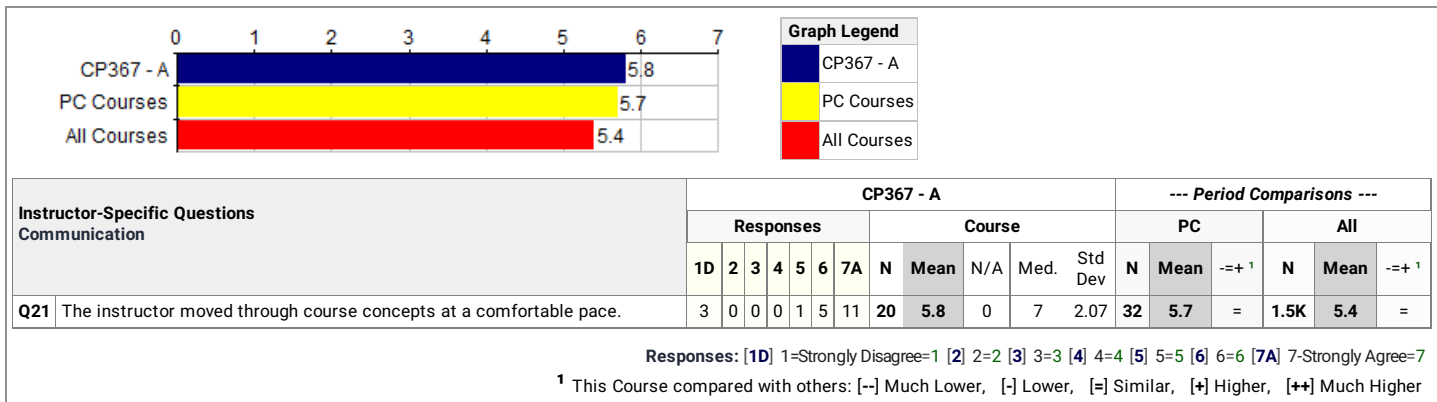


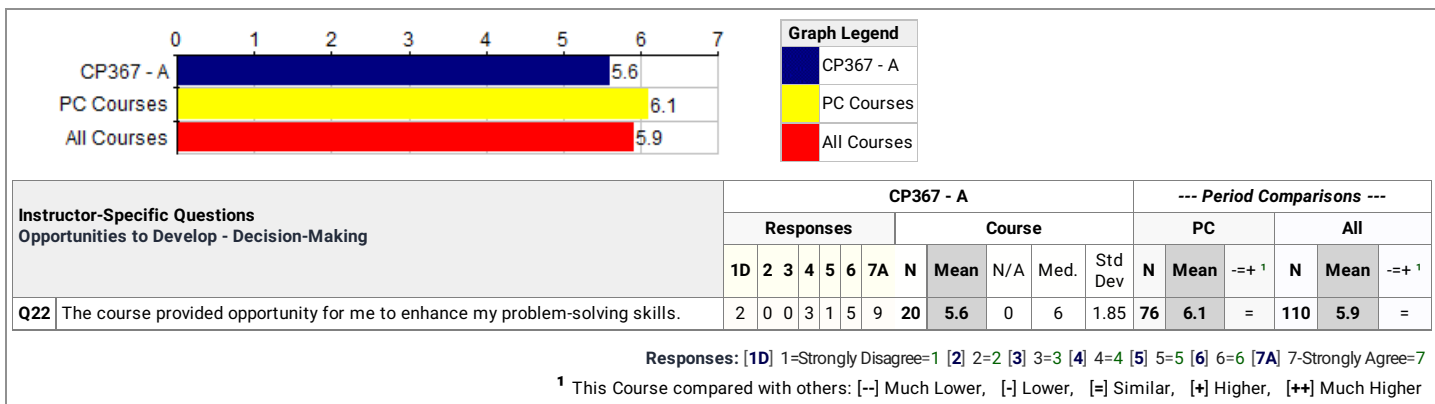




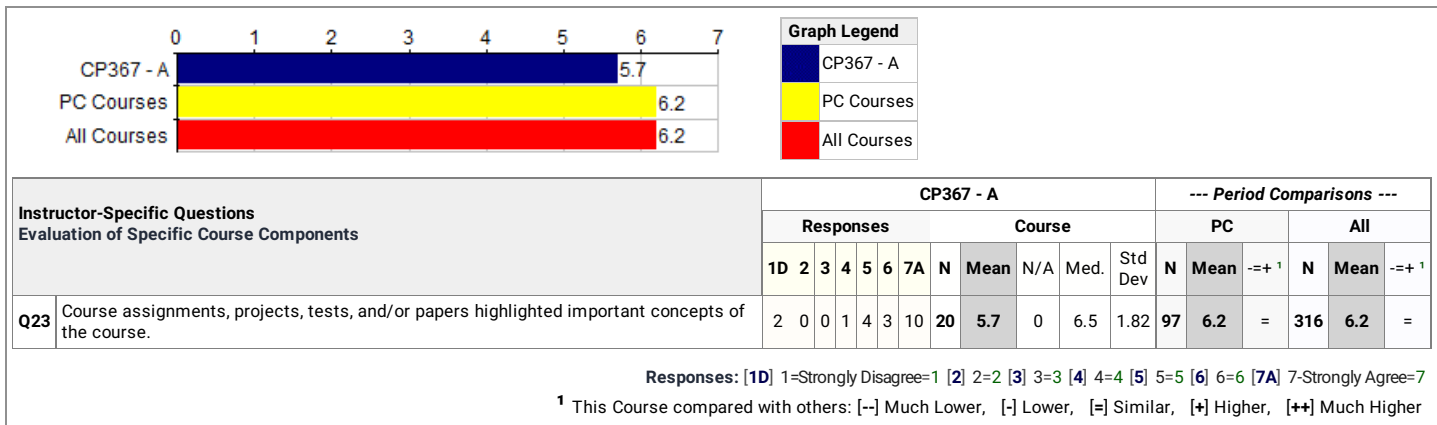


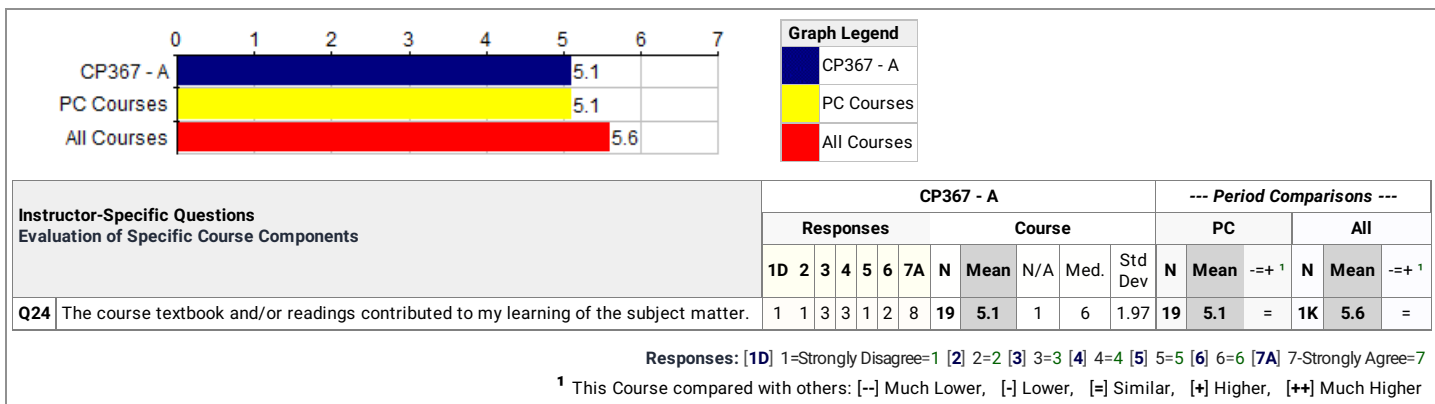




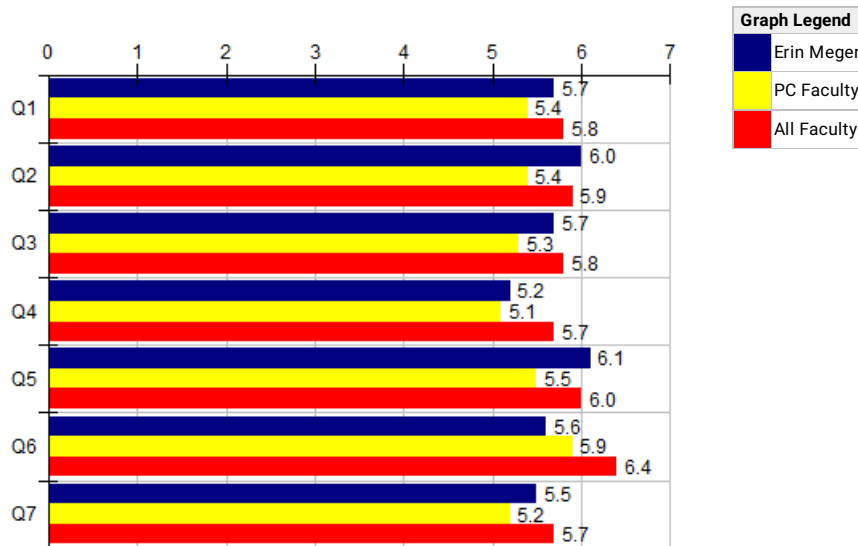








|                             |                                       |                              |               |
|-----------------------------|---------------------------------------|------------------------------|---------------|
| <b>Course:</b>              | CP367 A - Intro to System Programming | <b>Department:</b>           | PC            |
| <b>Responsible Faculty:</b> | Erin Meger                            | <b>Responses / Expected:</b> | 21 / 70 (30%) |



| B. Questions about the Instructor<br>Instructor |                                                                                            | Erin Meger |   |   |   |   |            |    |    |      |     | --- Period Comparisons --- |         |     |      |                  |     |      |                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------|---|---|---|---|------------|----|----|------|-----|----------------------------|---------|-----|------|------------------|-----|------|------------------|
|                                                 |                                                                                            | Responses  |   |   |   |   | Individual |    |    |      |     | PC                         |         |     | All  |                  |     |      |                  |
|                                                 |                                                                                            | 1D         | 2 | 3 | 4 | 5 | 6          | 7A | N  | Mean | N/A | Med.                       | Std Dev | N   | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q1                                              | The instructor provided opportunities for me to develop my interest in this subject area   | 2          | 0 | 1 | 1 | 2 | 4          | 11 | 21 | 5.7  | 0   | 7                          | 1.88    | 790 | 5.4  | =                | 25K | 5.8  | =                |
| Q2                                              | The instructor provided helpful responses to students' questions and requests for guidance | 2          | 0 | 1 | 0 | 1 | 4          | 13 | 21 | 6.0  | 0   | 7                          | 1.86    | 787 | 5.4  | =                | 25K | 5.9  | =                |
| Q3                                              | The instructor provided opportunities for me to feel engaged in the learning process       | 2          | 0 | 0 | 2 | 2 | 5          | 10 | 21 | 5.7  | 0   | 6                          | 1.80    | 782 | 5.3  | =                | 25K | 5.8  | =                |
| Q4                                              | The instructor gave clear explanations                                                     | 2          | 2 | 0 | 2 | 2 | 5          | 8  | 21 | 5.2  | 0   | 6                          | 2.04    | 790 | 5.1  | =                | 25K | 5.7  | =                |
| Q5                                              | The instructor displayed an interest in and concern for student learning in this course    | 1          | 1 | 0 | 0 | 0 | 7          | 12 | 21 | 6.1  | 0   | 7                          | 1.58    | 789 | 5.5  | =                | 25K | 6.0  | =                |
| Q6                                              | The instructor maintained a respectful learning environment                                | 3          | 1 | 0 | 0 | 1 | 5          | 11 | 21 | 5.6  | 0   | 7                          | 2.17    | 787 | 5.9  | =                | 25K | 6.4  | =                |
| Q7                                              | The instructor provided feedback on my coursework that helped me improve my understanding  | 1          | 2 | 1 | 1 | 2 | 5          | 9  | 21 | 5.5  | 0   | 6                          | 1.89    | 773 | 5.2  | =                | 24K | 5.7  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [-] Much Lower, [-] Lower, [=] Similar, [+ ] Higher, [++ ] Much Higher

#### Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor)

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faculty:</b>       | Erin Meger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Response Rate:</b> | 38.10% (8 of 21)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1                     | fun course, the instructor was a bit uncertain of the flow of the course and added new labs and assignments (of course, with a suitable notice), overall the instructor did a great job of supplying and teaching all that was needed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2                     | We didn't really cover much content in this course. Also that "diversity" lecture at the end was unnecessary and should not have been done in the way that it was.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3                     | The instructor was very unfocused during class, and would often talk about personal stories unrelated to the course that wasted lecture time. Also, she would often interact with two students in the front of the class that derailed the lecture even further.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4                     | I enjoy having instructors who are engaged with the material they are teaching. Regardless of the course notes being posted or not, this singlehandedly made the lecture worth going to (to actually listen and join in the class examples, and not just work on other coursework)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5                     | Highly unprofessional, showed up late more than she showed up on time. Would go on rants about personal opinions with inaccurate data about political subjects. (Relation to learning unix/linux and how white men are oppressive?). When asked a question the response is almost always, "That's a really good question, you should google it." Came unprepared many times for class but complained about personal work load. I know more about her and her car than I know about systems programming. If the answers to all the questions being asked are on the internet then it seems like she wouldn't be necessary and the class shouldn't be offered. Complained often about events that happened among very specific subsets of the students in the faculty and would take it out on them by wasting the class time (that is being paid for by the students), talking about her personal opinion on the matter while directly suppressing the opinions and comments of any student who would even attempt to speak out and clarify the situation. At the end of the last class reminded us that these surveys are "Literally not relevant and used to determine if the professor is a white male, female, or person of colour." Overall, Erin I would recommend you leave your opinions at home so that you can focus on teaching the students who are willing to learn and are paying money to the university for such an opportunity. |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Good work for Erin's first time teaching at WLU. Very bubbly personality, as well as a strong interest in teaching this field. Very impressed, and we could use more teachers like her here. I only gave her 5's on clear explanations since a bit more preparation could have been used for some linux commands that were demonstrated in class, as well as feedback on course work since assignment marks had close to no feedback and were quite late being returned back to students. (also I gave 4 for project description, because as unique as it is, assigning a picture as an assignment question is very far from clear and concise). All in all, great work. |
| 7 | Fun professor that was passionate about the course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8 | Erin is a very good instructor and I hope that she will remain a Computer Science instructor at Laurier. The course could be a little more organized at times, the sporadic assignments stress me out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                             |                                             |                              |                  |
|-----------------------------|---------------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | CP367 L1 - LAB_Introl to System Programming | <b>Department:</b>           | PC               |
| <b>Responsible Faculty:</b> | Erin Meger                                  | <b>Responses / Expected:</b> | 11 / 48 (22.92%) |
| <b>Focus:</b>               | <b>Overall Results</b>                      |                              |                  |

| A. Demographics Section<br>Demographics |                                           | CP367 - L1 |   |        |
|-----------------------------------------|-------------------------------------------|------------|---|--------|
|                                         |                                           | Responses  |   | Course |
|                                         |                                           | F          | P | N      |
| <b>Q1</b>                               | Are you a full-time or part-time student? | 9          | 1 | 10     |
| Responses: [F] Full-time [P] Part-time  |                                           |            |   |        |

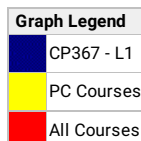
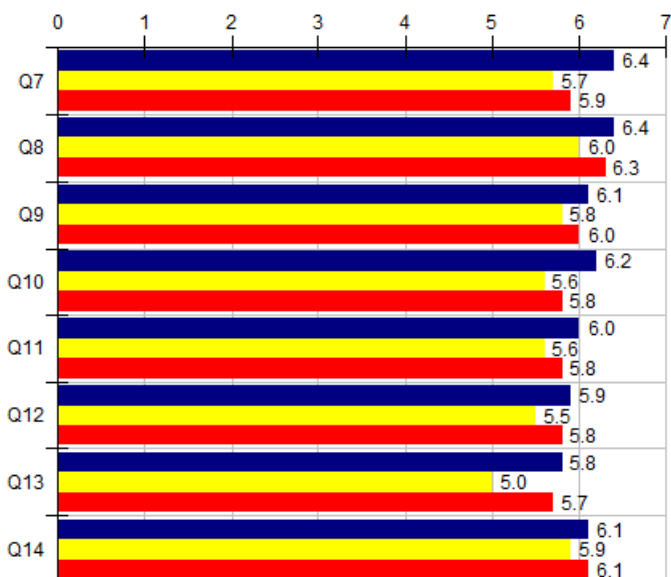
| A. Demographics Section<br>Demographics |                                                                 | CP367 - L1 |   |        |
|-----------------------------------------|-----------------------------------------------------------------|------------|---|--------|
|                                         |                                                                 | Responses  |   | Course |
|                                         |                                                                 | E          | R | N      |
| <b>Q2</b>                               | Is this course an elective or required course for your program? | 7          | 4 | 11     |
| Responses: [E] Elective [R] Required    |                                                                 |            |   |        |

| A. Demographics Section<br>Demographics                      |                                                                 | CP367 - L1 |   |   |   |     |        |
|--------------------------------------------------------------|-----------------------------------------------------------------|------------|---|---|---|-----|--------|
|                                                              |                                                                 | Responses  |   |   |   |     | Course |
|                                                              |                                                                 | 0-9        | 1 | 2 | 3 | >40 | N      |
| <b>Q3</b>                                                    | How many one-term courses had you completed prior to this term? | 0          | 2 | 7 | 1 | 1   | 11     |
| Responses: [0-9] 0-9 [1] 10-19 [2] 20-29 [3] 30-39 [>40] >40 |                                                                 |            |   |   |   |     |        |

| A. Demographics Section<br>Demographics                                                                                                          |                                                    | CP367 - L1 |     |     |     |    |    |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------|-----|-----|-----|----|----|--------|
|                                                                                                                                                  |                                                    | Responses  |     |     |     |    |    | Course |
|                                                                                                                                                  |                                                    | AN         | LTH | AHT | MTH | AA | A  | N      |
| <b>Q4</b>                                                                                                                                        | In terms of my class attendance, I attended class: | 0          | 0   | 1   | 0   | 0  | 10 | 11     |
| Responses: [AN] almost never [LTH] less than half the time [AHT] about half the time [MTH] more than half the time [AA] almost always [A] always |                                                    |            |     |     |     |    |    |        |

| A. Demographics Section<br>Demographics        |                                                                                               | CP367 - L1 |   |   |        |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|------------|---|---|--------|
|                                                |                                                                                               | Responses  |   |   | Course |
|                                                |                                                                                               | L          | S | H | N      |
| <b>Q5</b>                                      | Compared to other courses at this level in this discipline, the workload for this course was: | 5          | 6 | 0 | 11     |
| Responses: [L] lighter [S] similar [H] heavier |                                                                                               |            |   |   |        |

| A. Demographics Section<br>Demographics         |                                        | CP367 - L1 |     |        |
|-------------------------------------------------|----------------------------------------|------------|-----|--------|
|                                                 |                                        | Responses  |     | Course |
|                                                 |                                        | IC         | OOC | N      |
| <b>Q6</b>                                       | Where did you complete the evaluation? | 1          | 10  | 11     |
| Responses: [IC] In class [OOC] Outside of class |                                        |            |     |        |

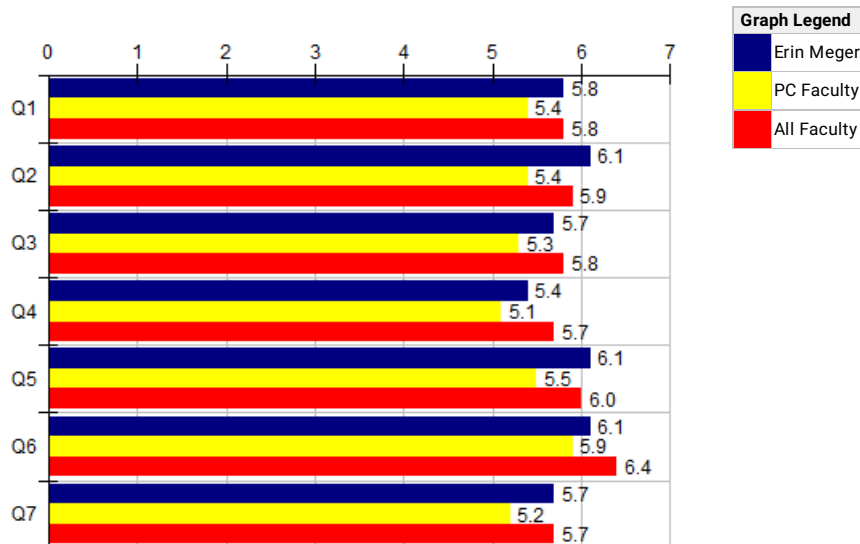


| C. Questions about the course<br>Course |                                                                                                                          | CP367 - L1 |   |   |   |   |   |        |    |      |     |      | --- Period Comparisons --- |     |      |                  |     |      |                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|---|---|---|---|---|--------|----|------|-----|------|----------------------------|-----|------|------------------|-----|------|------------------|
|                                         |                                                                                                                          | Responses  |   |   |   |   |   | Course |    |      |     |      | PC                         |     |      | All              |     |      |                  |
|                                         |                                                                                                                          | 1D         | 2 | 3 | 4 | 5 | 6 | 7A     | N  | Mean | N/A | Med. | Std Dev                    | N   | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q7                                      | The course deepened my understanding of the subject matter                                                               | 0          | 0 | 0 | 1 | 0 | 3 | 6      | 10 | 6.4  | 0   | 7    | .92                        | 786 | 5.7  | =                | 25K | 5.9  | =                |
| Q8                                      | The content of this course was consistent with the course outline/syllabus                                               | 0          | 0 | 0 | 1 | 0 | 3 | 6      | 10 | 6.4  | 0   | 7    | .92                        | 782 | 6.0  | =                | 25K | 6.3  | =                |
| Q9                                      | The course provided me with opportunities to demonstrate my understanding of the course material                         | 0          | 0 | 0 | 1 | 2 | 2 | 5      | 10 | 6.1  | 0   | 6.5  | 1.04                       | 782 | 5.8  | =                | 25K | 6.0  | =                |
| Q10                                     | The course helped me to see how subject matter and/or skills could be applied in other areas                             | 0          | 0 | 0 | 1 | 1 | 3 | 5      | 10 | 6.2  | 0   | 6.5  | .98                        | 777 | 5.6  | =                | 25K | 5.8  | =                |
| Q11                                     | The course helped me to understand the methods of inquiry, problem solving and/or creative activity in the area of study | 0          | 0 | 0 | 2 | 1 | 2 | 5      | 10 | 6.0  | 0   | 6.5  | 1.18                       | 772 | 5.6  | =                | 25K | 5.8  | =                |
| Q12                                     | The course helped me learn how to analyze information                                                                    | 0          | 0 | 0 | 2 | 1 | 3 | 4      | 10 | 5.9  | 0   | 6    | 1.14                       | 754 | 5.5  | =                | 25K | 5.8  | =                |
| Q13                                     | The course provided opportunities for me to improve my written, oral or other communication skills                       | 0          | 0 | 0 | 1 | 3 | 1 | 3      | 8  | 5.8  | 2   | 5.5  | 1.09                       | 663 | 5.0  | =                | 24K | 5.7  | =                |
| Q14                                     | The course helped me understand that there is more to learn in this area of study                                        | 0          | 0 | 0 | 1 | 2 | 2 | 5      | 10 | 6.1  | 0   | 6.5  | 1.04                       | 776 | 5.9  | =                | 25K | 6.1  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

|                             |                                             |                              |                  |
|-----------------------------|---------------------------------------------|------------------------------|------------------|
| <b>Course:</b>              | CP367 L1 - LAB_Introl to System Programming | <b>Department:</b>           | PC               |
| <b>Responsible Faculty:</b> | Erin Meger                                  | <b>Responses / Expected:</b> | 11 / 48 (22.92%) |



| B. Questions about the Instructor<br>Instructor |                                                                                            | Erin Meger |   |   |   |   |            |    |    |      |     | --- Period Comparisons --- |         |     |      |                  |     |      |                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------|---|---|---|---|------------|----|----|------|-----|----------------------------|---------|-----|------|------------------|-----|------|------------------|
|                                                 |                                                                                            | Responses  |   |   |   |   | Individual |    |    |      |     | PC                         |         |     | All  |                  |     |      |                  |
|                                                 |                                                                                            | 1D         | 2 | 3 | 4 | 5 | 6          | 7A | N  | Mean | N/A | Med.                       | Std Dev | N   | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q1                                              | The instructor provided opportunities for me to develop my interest in this subject area   | 0          | 1 | 0 | 0 | 4 | 0          | 6  | 11 | 5.8  | 0   | 7                          | 1.53    | 790 | 5.4  | =                | 25K | 5.8  | =                |
| Q2                                              | The instructor provided helpful responses to students' questions and requests for guidance | 1          | 0 | 0 | 1 | 0 | 1          | 8  | 11 | 6.1  | 0   | 7                          | 1.83    | 787 | 5.4  | =                | 25K | 5.9  | =                |
| Q3                                              | The instructor provided opportunities for me to feel engaged in the learning process       | 1          | 0 | 0 | 1 | 2 | 0          | 6  | 10 | 5.7  | 0   | 7                          | 1.90    | 782 | 5.3  | =                | 25K | 5.8  | =                |
| Q4                                              | The instructor gave clear explanations                                                     | 1          | 1 | 0 | 0 | 3 | 1          | 5  | 11 | 5.4  | 0   | 6                          | 2.01    | 790 | 5.1  | =                | 25K | 5.7  | =                |
| Q5                                              | The instructor displayed an interest in and concern for student learning in this course    | 1          | 0 | 0 | 0 | 1 | 1          | 7  | 10 | 6.1  | 0   | 7                          | 1.81    | 789 | 5.5  | =                | 25K | 6.0  | =                |
| Q6                                              | The instructor maintained a respectful learning environment                                | 1          | 0 | 0 | 0 | 1 | 2          | 7  | 11 | 6.1  | 0   | 7                          | 1.73    | 787 | 5.9  | =                | 25K | 6.4  | =                |
| Q7                                              | The instructor provided feedback on my coursework that helped me improve my understanding  | 1          | 0 | 1 | 0 | 1 | 2          | 6  | 11 | 5.7  | 0   | 7                          | 1.91    | 773 | 5.2  | =                | 24K | 5.7  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

#### Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor)

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faculty:</b>       | Erin Meger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Response Rate:</b> | 18.18% (2 of 11)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1                     | I filled this lab evaluation out after getting nailed by unclear instructions on the last take-home lab. Please be more clear and specific than "pipe the output" next time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2                     | Highly unprofessional, showed up late more than she showed up on time. Would go on rants about personal opinions with inaccurate data about political subjects. (Relation to learning unix/linux and how white men are oppressive?). When asked a question the response is almost always, "That's a really good question, you should google it." Came unprepared many times for class but complained about personal work load. I know more about her and her car than I know about systems programming. If the answers to all the questions being asked are on the internet then it seems like she wouldn't be necessary and the class shouldn't be offered. Complained often about events that happened among very specific subsets of the students in the faculty and would take it out on them by wasting the class time (that is being paid for by the students), talking about her personal opinion on the matter while directly suppressing the opinions and comments of any student who would even attempt to speak out and clarify the situation. At the end of the last class reminded us that these surveys are "Literally not relevant and used to determine if the professor is a white male, female, or person of colour." Overall, Erin I would recommend you leave your opinions at home so that you can focus on teaching the students who are willing to learn and are paying money to the university for such an opportunity. |

|                             |                                            |                              |                 |
|-----------------------------|--------------------------------------------|------------------------------|-----------------|
| <b>Course:</b>              | CP367 L2 - LAB_Intro to System Programming | <b>Department:</b>           | PC              |
| <b>Responsible Faculty:</b> | Erin Meger                                 | <b>Responses / Expected:</b> | 4 / 22 (18.18%) |
| <b>Focus:</b>               | <b>Overall Results</b>                     |                              |                 |

| A. Demographics Section<br>Demographics |                                           | CP367 - L2 |   |        |
|-----------------------------------------|-------------------------------------------|------------|---|--------|
|                                         |                                           | Responses  |   | Course |
|                                         |                                           | F          | P | N      |
| <b>Q1</b>                               | Are you a full-time or part-time student? | 4          | 0 | 4      |
| Responses: [F] Full-time [P] Part-time  |                                           |            |   |        |

| A. Demographics Section<br>Demographics |                                                                 | CP367 - L2 |   |        |
|-----------------------------------------|-----------------------------------------------------------------|------------|---|--------|
|                                         |                                                                 | Responses  |   | Course |
|                                         |                                                                 | E          | R | N      |
| <b>Q2</b>                               | Is this course an elective or required course for your program? | 3          | 1 | 4      |
| Responses: [E] Elective [R] Required    |                                                                 |            |   |        |

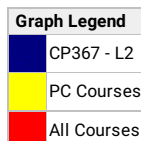
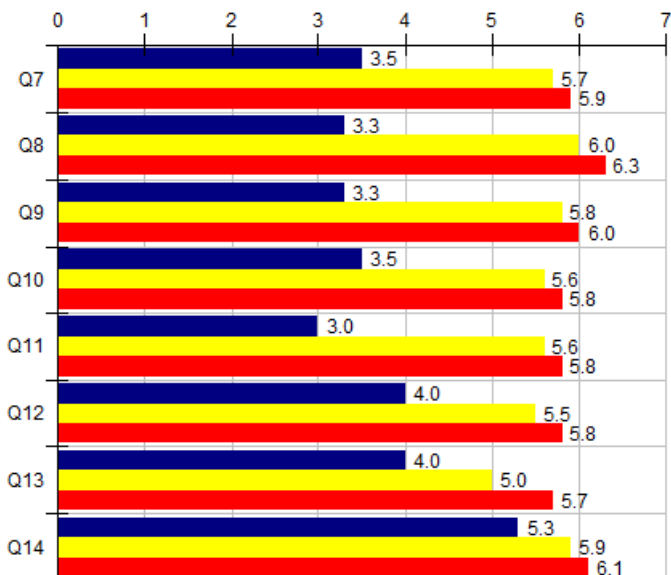
| A. Demographics Section<br>Demographics                      |                                                                 | CP367 - L2 |   |   |   |     |        |
|--------------------------------------------------------------|-----------------------------------------------------------------|------------|---|---|---|-----|--------|
|                                                              |                                                                 | Responses  |   |   |   |     | Course |
|                                                              |                                                                 | 0-9        | 1 | 2 | 3 | >40 | N      |
| <b>Q3</b>                                                    | How many one-term courses had you completed prior to this term? | 0          | 1 | 1 | 1 | 1   | 4      |
| Responses: [0-9] 0-9 [1] 10-19 [2] 20-29 [3] 30-39 [>40] >40 |                                                                 |            |   |   |   |     |        |

| A. Demographics Section<br>Demographics                                                                                                          |                                                    | CP367 - L2 |     |     |     |    |   |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------|-----|-----|-----|----|---|--------|
|                                                                                                                                                  |                                                    | Responses  |     |     |     |    |   | Course |
|                                                                                                                                                  |                                                    | AN         | LTH | AHT | MTH | AA | A | N      |
| <b>Q4</b>                                                                                                                                        | In terms of my class attendance, I attended class: | 0          | 1   | 0   | 0   | 3  | 0 | 4      |
| Responses: [AN] almost never [LTH] less than half the time [AHT] about half the time [MTH] more than half the time [AA] almost always [A] always |                                                    |            |     |     |     |    |   |        |

| A. Demographics Section<br>Demographics        |                                                                                               | CP367 - L2 |   |   |        |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|------------|---|---|--------|
|                                                |                                                                                               | Responses  |   |   | Course |
|                                                |                                                                                               | L          | S | H | N      |
| <b>Q5</b>                                      | Compared to other courses at this level in this discipline, the workload for this course was: | 0          | 4 | 0 | 4      |
| Responses: [L] lighter [S] similar [H] heavier |                                                                                               |            |   |   |        |

| A. Demographics Section<br>Demographics         |                                        | CP367 - L2 |     |        |
|-------------------------------------------------|----------------------------------------|------------|-----|--------|
|                                                 |                                        | Responses  |     | Course |
|                                                 |                                        | IC         | OOC | N      |
| <b>Q6</b>                                       | Where did you complete the evaluation? | 1          | 3   | 4      |
| Responses: [IC] In class [OOC] Outside of class |                                        |            |     |        |



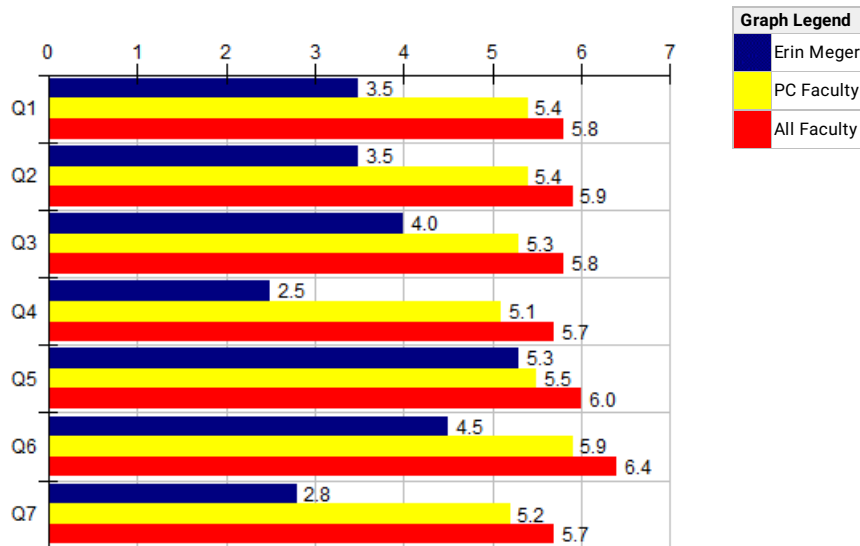


| C. Questions about the course<br>Course |                                                                                                                          | CP367 - L2 |   |   |   |   |   |    |        |      |     |      |         | --- Period Comparisons --- |      |                  |     |      |                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|---|---|---|---|---|----|--------|------|-----|------|---------|----------------------------|------|------------------|-----|------|------------------|
|                                         |                                                                                                                          | Responses  |   |   |   |   |   |    | Course |      |     |      |         | PC                         |      |                  | All |      |                  |
|                                         |                                                                                                                          | 1D         | 2 | 3 | 4 | 5 | 6 | 7A | N      | Mean | N/A | Med. | Std Dev | N                          | Mean | --+ <sup>1</sup> | N   | Mean | --+ <sup>1</sup> |
| Q7                                      | The course deepened my understanding of the subject matter                                                               | 2          | 0 | 0 | 0 | 1 | 0 | 1  | 4      | 3.5  | 0   | 3    | 2.60    | 786                        | 5.7  | -                | 25K | 5.9  | -                |
| Q8                                      | The content of this course was consistent with the course outline/syllabus                                               | 2          | 0 | 0 | 0 | 1 | 1 | 0  | 4      | 3.3  | 0   | 3    | 2.28    | 782                        | 6.0  | -                | 25K | 6.3  | --               |
| Q9                                      | The course provided me with opportunities to demonstrate my understanding of the course material                         | 2          | 0 | 0 | 1 | 0 | 0 | 1  | 4      | 3.3  | 0   | 2.5  | 2.49    | 782                        | 5.8  | -                | 25K | 6.0  | --               |
| Q10                                     | The course helped me to see how subject matter and/or skills could be applied in other areas                             | 2          | 0 | 0 | 0 | 1 | 0 | 1  | 4      | 3.5  | 0   | 3    | 2.60    | 777                        | 5.6  | -                | 25K | 5.8  | -                |
| Q11                                     | The course helped me to understand the methods of inquiry, problem solving and/or creative activity in the area of study | 2          | 0 | 0 | 0 | 0 | 0 | 1  | 3      | 3.0  | 1   | 1    | 2.83    | 772                        | 5.6  | -                | 25K | 5.8  | -                |
| Q12                                     | The course helped me learn how to analyze information                                                                    | 1          | 0 | 0 | 0 | 0 | 0 | 1  | 2      | 4.0  | 1   | 4    | 3       | 754                        | 5.5  | =                | 25K | 5.8  | -                |
| Q13                                     | The course provided opportunities for me to improve my written, oral or other communication skills                       | 1          | 0 | 0 | 0 | 0 | 0 | 1  | 2      | 4.0  | 2   | 4    | 3       | 663                        | 5.0  | =                | 24K | 5.7  | -                |
| Q14                                     | The course helped me understand that there is more to learn in this area of study                                        | 1          | 0 | 0 | 0 | 0 | 1 | 2  | 4      | 5.3  | 0   | 6.5  | 2.49    | 776                        | 5.9  | =                | 25K | 6.1  | =                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Course compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

|                             |                                            |                              |                 |
|-----------------------------|--------------------------------------------|------------------------------|-----------------|
| <b>Course:</b>              | CP367 L2 - LAB_Intro to System Programming | <b>Department:</b>           | PC              |
| <b>Responsible Faculty:</b> | Erin Meger                                 | <b>Responses / Expected:</b> | 4 / 22 (18.18%) |



| B. Questions about the Instructor<br>Instructor |                                                                                            | Erin Meger |   |   |   |   |   |    |            |      |     |      | --- Period Comparisons --- |     |      |                  |     |      |                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------|---|---|---|---|---|----|------------|------|-----|------|----------------------------|-----|------|------------------|-----|------|------------------|
|                                                 |                                                                                            | Responses  |   |   |   |   |   |    | Individual |      |     |      | PC                         |     |      | All              |     |      |                  |
|                                                 |                                                                                            | 1D         | 2 | 3 | 4 | 5 | 6 | 7A | N          | Mean | N/A | Med. | Std Dev                    | N   | Mean | -/+ <sup>1</sup> | N   | Mean | -/+ <sup>1</sup> |
| Q1                                              | The instructor provided opportunities for me to develop my interest in this subject area   | 2          | 0 | 0 | 0 | 1 | 0 | 1  | 4          | 3.5  | 0   | 3    | 2.60                       | 790 | 5.4  | -                | 25K | 5.8  | -                |
| Q2                                              | The instructor provided helpful responses to students' questions and requests for guidance | 2          | 0 | 0 | 0 | 1 | 0 | 1  | 4          | 3.5  | 0   | 3    | 2.60                       | 787 | 5.4  | =                | 25K | 5.9  | -                |
| Q3                                              | The instructor provided opportunities for me to feel engaged in the learning process       | 1          | 0 | 0 | 1 | 0 | 0 | 1  | 3          | 4.0  | 0   | 4    | 2.45                       | 782 | 5.3  | =                | 25K | 5.8  | -                |
| Q4                                              | The instructor gave clear explanations                                                     | 2          | 1 | 0 | 0 | 0 | 1 | 0  | 4          | 2.5  | 0   | 1.5  | 2.06                       | 790 | 5.1  | -                | 25K | 5.7  | -                |
| Q5                                              | The instructor displayed an interest in and concern for student learning in this course    | 1          | 0 | 0 | 0 | 0 | 1 | 2  | 4          | 5.3  | 0   | 6.5  | 2.49                       | 789 | 5.5  | =                | 25K | 6.0  | =                |
| Q6                                              | The instructor maintained a respectful learning environment                                | 1          | 0 | 0 | 1 | 0 | 1 | 1  | 4          | 4.5  | 0   | 5    | 2.29                       | 787 | 5.9  | =                | 25K | 6.4  | -                |
| Q7                                              | The instructor provided feedback on my coursework that helped me improve my understanding  | 2          | 1 | 0 | 0 | 0 | 0 | 1  | 4          | 2.8  | 0   | 1.5  | 2.49                       | 773 | 5.2  | -                | 24K | 5.7  | -                |

Responses: [1D] 1=Strongly Disagree=1 [2] 2=2 [3] 3=3 [4] 4=4 [5] 5=5 [6] 6=6 [7A] 7=Strongly Agree=7

<sup>1</sup> This Individual compared with others: [--] Much Lower, [-] Lower, [=] Similar, [+] Higher, [++] Much Higher

| Q8 - Comments about the instructor and/or course (Responses will only be seen by the instructor) |                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faculty:</b>                                                                                  | Erin Meger                                                                                                                                                                                                                                                                                                                                                            |
| <b>Response Rate:</b>                                                                            | 25.00% (1 of 4)                                                                                                                                                                                                                                                                                                                                                       |
| 1                                                                                                | <p>very interesting course full of useful information about operating systems and how their programs work.</p> <p>has sparked my interest in Git and using unix more often to program my own tasks, as windows programs are unreliable and I gain better understanding making programs from the ground up.</p> <p>Unix makes it easier, but in a way also harder.</p> |