Teaching Dossier

Frank Leenders*

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*Frank.Leenders@hhs.se, Department of Economics, Stockholm School of Economics.

Contents

1 Teaching Philosophy

My teaching philosophy is based on the three characteristics that I find distinguish a good teacher from a less effective teacher: widespread usage of examples, flexibility when the situation calls for it, and continued professional development. In this statement, I will briefly elaborate on each of these characteristics, providing some examples of ways in which I have sought to embody these throughout my time as an award-winning teaching assistant and a course instructor at the University of Toronto. While I have not had any teaching assignments at the Stockholm School of Economics (i.e. since completing my PhD in the summer of 2022), I look forward to continuing on the path I set out in Toronto in my future role.

Using Examples

First of all, I believe that in order to successfully keep students engaged in the material, it is important for the teacher to motivate the topic at hand. In general, I do this by providing examples that tie back the (often fairly theoretical) material to situations students may encounter outside of the classroom. For example, when I was teaching an intermediate macroeconomics course as a course instructor, the local news was dominated by a large layoff taking place at a nearby automotive plant. Therefore, when I covered models of unemployment in that course, I would briefly discuss these events and how they relate to the models covered in class.

These examples also come back in my tutorial and exam exercises, as well as in writing assignments. In particular, I find that by asking students to use the models they learned in class to analyze an issue that has attracted a lot of media attention, they tend to stay more engaged, as evidenced by students bringing up other events they read about in an attempt to connect these with materials covered in class. Furthermore, using "real-world examples", especially in writing assignments, also allows me to challenge students on their intuitive understanding of the covered material (rather than their mathematical ability to solve a model), thereby helping students to improve their ability to communicate model results to a non-specialist audience.

Flexibility

Second of all, I believe that a good teacher is able to steer the class through all the important material that should be covered in a course, while still being flexible and responding to the needs of different class cohorts. In particular, this means that rather than sticking to a rigid course schedule, I like to leave some room open on the schedule. This time can then be used to further elaborate on a topic (if the class is having trouble with a particular concept) or to cover further examples and case studies.

On an individual level, I also strive to be flexible and sensitive to the needs of individual students. In particular, I strive to be accessible outside of class time so that I can patiently provide explanations of concepts from a different point of view if an initial elaboration on a topic caused any confusion. I have found that being able to patiently explain a concept from a number of different points of view helps a student to stay engaged with the course (encouraging them to repeatedly visit office hours if needed) and eventually perform better, as measured by test and assignment scores as well as the types of questions asked in class and office hours (which tend to become more insightful over time). I view this patience and accessibility as one of my main strengths as a teacher, as corroborated by student evaluations, and it lead me to win a teaching award for my work as a teaching assistant at the University of Toronto.

Continued Professional Development

Finally, I believe that a good teacher continuously seeks to keep developing their teaching strategies. During my time at the University of Toronto, I have sought to do so through a series of workshops (as part of the "Teaching Fundamentals Certificate"). In these workshops I have learnt about a number of techniques that I have since implemented in my classroom. One example of such a technique is the "ticket out the door", which I used as a course instructor. Here, I asked students to write down any lingering thought or question on a piece of paper and hand it to me on their way out at the end of the class. This allowed me to come back to some of the common questions or comments at the start of the next class. Since the class I was teaching was fairly small in size, this worked well as I was able to come back to almost all comments and questions. This was appreciated by the

students, who felt like their concerns were truly being listened to, and this was eventually also reflected in my evaluation scores, which were substantially above the faculty and departmental average.

2 Teaching Experience

2.1 Summary of Teaching Experience

In this section, I outline my past (and present) teaching experience, as summarized in table 1.

My most relevant teaching experience came at the University of Toronto, where I was course instructor during the summer term of 2019 for the first half of the full-summer equivalent of a full-year intermediate macroeconomics course. My other teaching appointments, as teaching assistant, were initially primarily in first year undergraduate (principle) courses. As I became more experiences, I moved to intermediate undergraduate and graduate courses, where I was generally either the only TA or the head TA. Together, this means I gathered experience teaching on several levels, with my experience spanning first, second, and third year undergraduate course, as well as graduate (first year PhD) courses.

At the University of Alberta, as a teaching assistant for an intermediate macroeconomics course, my only responsibility was grading, and therefore I did not have any contact with students. My first appointment that involved contact with students came at Tilburg University. There, my responsibilities involved teaching tutorials for a principles in macroeconomics course (in Dutch) to small groups of business economics students. I took away several lessons from that first teaching experience, which I carried forward towards future teaching appointments, at the University of Toronto.

2.2 Teaching Practices and Strategies

In this subsection, I will describe how I conduct a typical tutorial session, using undergraduate intermediate macroeconomics and graduate macroeconomic theory as examples.

The tutorials focus on problem solving. Students work on a problem set in advance; they try and solve all exercises before attending. In the tutorials, I go over the solutions. I arrive approximately 10 minutes before the start of the session to allow for questions or concerns.

Course Title	Position, Dates	Level, Duration	Duties	Enrolment
ECO100: Introductory Economics	TA, 2015-16 Summer 2016, 2016-17	UG-1, Full-year course	Tutorials every other week, 2 sections (2h each), Grading,Invigilation	500, 100 per tutorial
ECO102: Principles of Macroeconomics	TA, Summer 2017, Summer 2018	UG-1, Semester course	Grading, Invigilation	200
Macroeconomics for Business Administration (Dutch)	Winter 2015	UG-1, Semester course	Tutorials every other week, 2 Sections, 1.5h each	30 per section
ECO208: Macroeconomic Theory	TA, 2018-19 2019-20, 2020-21	UG-2, Full-year course	Weekly Tutorials (2h), Grading,Invigilation	150
ECO208: Macroeconomic Theory	**Instructor, Summer 2019**	**UG 2nd year; full-year course (condensed)**	**Twelve 2-hour lectures; Course administration; 2 midterm exams, and 1 writing assignment**	35
ECO208: Macroeconomic Theory	TA, Summer 2020 Summer 2021	UG-2, Full-summer	Weekly Tutorials (2h), Grading,Invigilation	35
ECO209: Macroeconomics for Commerce	TA, 2017-18, 2020-21, 2021-22, Summer 2018	UG-2, Full-year or Full-summer	Grading,Invigilation Summer: Bi-weekly Tutorials (1h)	2 sections, 150 each (Summer: 25)
ECO345: Macroeconomics and the Labour Market	TA, Fall 2016, 2019,2021; Winter 2018	UG-3, semester course	Occasional Office Hours, Grading, Invigilation	30
ECON385: Intermediate Macroeconomics II	TA, Fall 2012	UG-3, semester course	Grading, Invigilation	50
ECO2010: Mathematics and Statistics for PhD and MA Doctoral Stream Students	TA, Fall 2016	Graduate, 1st year, 3-week intensive	Daily Tutorials (2h) Grading,Invigilation	45
ECO2100: Macroeconomic Theory I (PhD)	TA, Every Fall, 2017-2021	1st-year PhD semester course	Weekly Tutorials (2h), Grading,Invigilation	25

Table 1: *Summary of Teaching Experience; UG-x=Undergraduate, year x.*

If I plan to post typed out solutions after the tutorial, I completed this beforehand, so that I can make notes on any required clarifications or corrections given student questions.

During the session itself, I do the first set of problems myself. I then progressively ask for more input from students as the session progresses. For example, in a PhD tutorial on search models I explain the solution method using the first exercise, while asking for student input on the next step in a solution for subsequent exercises. This way, I spot some common errors and explain alternative ways to solve the exercise. I use the class breaks for any further questions related to the material. Finally, I generally do not schedule meetings immediately after class so that I can stay behind in case of further questions. This allows me to patiently explain any concept, regardless of the time needed for such explanations. This patience in explaining concepts is greatly appreciated by students, as reflected by teaching evaluations as well as my receipt of a teaching award (for teaching assistants in economics).

When it comes to assessments, I find that writing assignments are a good way to connect the material back to experience students have outside of the classroom. The writing assignment I have included in the sample material provides an example of such an assessment. In particular, the writing assignments features very little mathematical problem solving, and rather has an essay component as well as a component where students explore some related data. The data component is fairly structured, directly providing the students with the data and steps required to generate outcomes of interest. The essay, on the other hand, is open ended and based on an online article from outlets such as *The Atlantic* or *VoxEU*. Exams, on the other hand, do not feature such open-ended questions. Rather, they require students to solve a variation of a problem they encountered during lecture or tutorial. Sometimes this requires them to solve the model mathematically, but I also ask for an intuitive explanation, ensuring that the student understands the mechanics of a certain model. In the sample materials section, I included a midterm exam from the undergraduate intermediate macroeconomics course (for which I was the instructor) to illustrate this.

Some particular strategies that I have used throughout my time at the University of Toronto

warrant some emphasis here. The first of these strategies is the "ticket out the door", which I used during my course instructorship in the summer term of 2019, and briefly elaborated upon in my teaching statement in section 1. Another technology that I would like to highlight here is the Crowdmark grading software. This software facilitates scanning all exams and grading them online. Furthermore, it allows students to submit assignments online. This is improves the experience for both teachers (and TA's) and students. For the teaching team, it allows for multiple graders to grade an assessment simultaneously (without a need to meet in-person to exchange booklets), while allowing the supervisor to easily monitor the progress. For students, the technology is especially helpful as it allows them to access graded work immediately, rather than having to wait until the next in-person meeting. I think this is a substantial improvement over purely in-person graded (and returned) work, and I would love to help implement such technologies at a future place as well (if it is not already in place).

3 Professional Development

Throughout my time as a teaching assistant at the University of Toronto, I have sought to continuously develop as a teacher. While most methods that I used to do this involved informal conversations with more experienced teachers and supervisors, I have also obtained the University of Toronto's "Teaching Fundamentals Certificate". This certificate program is offered by the University of Toronto's Teaching Assitants' Training Program (TATP), and requires the completion of a written reflection and 6 workshops, one of which should be in each of the "Equity and Access in Teaching and Learning", "Educational Technologies and Teaching with Technology", and "Reflective Practice and Teaching Skills for Academic and Non-Academic Careers" category, and is to be completed within one year of registration.

In order to fulfill the requirement of 6 workshops for the aforementioned teaching fundamentals certificate, I participated in the following 7 workshops:

- Tri-Campus Online TA Week 2020: Sessions attended during this week include "*De-*

signing Effective Online Learning Experiences", "*Fostering Equity and Inclusion in Teaching & Learning*", "*Creating a Teaching Presence in the Online Environment*", "*Online student engagement*", and "*Teaching with Quercus, Snagit, BB Collaborate Ultra, Grading in Quercus*".

- Demystifying Library Research for Your Students
- Preparing Your Teaching Dossier
- Facilitating Effective Webinars: Strategies for Bb Collaborate Ultra
- Accessible Online Learning: Synchronous Tools
- Grading for Equity
- Identifying and Addressing Microaggressions in the University Classroom

Across the workshops listed above, I have learned about several techniques that I have subsequently used in my own classes (tutorials). In particular, such techniques include a number of ice-breaker type activities that were especially helpful in the online environment necessitated by the Covid-19 pandemic, as well as grading techniques that focus on putting less emphasis on the negative comments in my grading (e.g. by also pointing out the answers that were especially excellent).

While this certificate program has now ended, and I do not currently have any teaching responsibilities at the Stockholm School of Economics, I will continue to seek further development in my teaching capabilities in the future. In particular, I will be looking to seek out online messaging platforms. These platforms can substantially enrich the student experience in a course, as they allow students to connect with each other and discuss exercises with each other. In my experience, this can be helpful for all types of students in the course, since a true indication of a student's understanding of a concept is an ability to explain the concept to their colleagues.

4 Teaching Appraisals

4.1 Formal Instructor Evaluations

In table 2 below, I summarize the quantitative results from the official student evaluations I received as a course instructor (Summer 2019). The scores are averages and medians of the responses to the listed questions, all of which are on a scale from 1 to 5, where 1="not at all" and 5="a great deal". While the sample size is not very large (with only 8 out of the 36 students responding), these evaluations accurately reflect the personal comments I received from the students. I have attached the full instructor report, which includes response distributions as well as comments from students, in the "Sample Materials" section at the end of this dossier.

Question	Mean	Median	Faculty Mean	Department Mean
Course was intellectually stimulating	4.5	4.5	4.1	4.0
Course provided deeper understanding of subject	4.8	5.0	4.3	4.2
Instructor created an atmosphere conducive to learning	4.6	5.0	4.3	4.0
Assignments/exams improved my understanding	4.4	4.5	4.0	3.8
Assignments/exams allowed me to demonstrate understanding	4.6	5.0	4.0	3.8
Overall quality of learning experience	4.5	4.5	4.0	3.7
Instructor generated enthusiasm	4.6	5.0	4.3	4.1
Workload compared to other courses	3.1	3.0	3.2	3.3
I would recommend this course to other students	4.3	4.0	3.9	3.6
Quality of instruction	4.6	5.0	N/A	4.0
Instructor was approachable	4.9	5.0	N/A	N/A
Instructor organized lectures in a logical manner	4.9	5.0	N/A	N/A
Instructor responded respectfully to questions	4.9	5.0	N/A	N/A
Institutional Composite Mean	4.6	N/A	4.1	3.9

Table 2: *Quantitative Summary of Teaching Evaluations, Course Instructor Position (ECO208: Macroeconomic Theory; Summer 2019). Sample size:* $N = 8$

4.2 Formal TA Evaluations

Unfortunately, no evaluations are available for my first TA appointment (at the University of Alberta in the fall semester of 2012), as this teaching assistantship was purely focused on grading.

In table 3, I summarize the student evaluations I received after my TA work at Tilburg University. The scores listed are averages (individual and course-wide) and standard deviations of the responses to the listed questions (which are originally in Dutch). All of these are on a scale from 1 to 5, where 1 corresponds to "poor" and 5 corresponds to "excellent". This was my first TA appointment involving direct contact with the students, which is reflected in the below-average evaluation results and low response rate. These results therefore contributed to my motivation for continuing to develop myself as a teacher, as summarized in section 3 of this dossier.

Question	Average Score	Standard Deviation	Institutional Average
TA explains the material clearly	3.5	0.55	3.95
TA stimulates students to think about material	3.33	0.52	3.89
TA actively involves students	3.17	0.41	3.89
TA is open to questions	3.67	0.82	4.23
TA is well prepared for class	3.5	0.55	4.2
Overall Satisfaction with TA	3.5	0.55	3.96

Table 3: *Quantitative Summary of Teaching Evaluations (Teaching Assistant Position, Tilburg University, Winter 2015). Sample size:* $N = 6$

For my TA work at the University of Toronto, the only evaluations available are those submitted by the instructor. While I generally scored very well on these evaluations (averaging between 4.0 and 5.0 on a 5-point scale), the numerical scores are not necessarily meaningful, and therefore I chose to omit them from this dossier. The exception to this is when the instructor used comments they received from students to underscore these evaluations. Such comments usually appeared in the comment section of the evaluation. Below I list a selection of the comments I received in these evaluations. The full evaluations are available upon request.

- Kieran Furlong (ECO100: Introductory Economics; Summer 2016): *"Frank was a revelation. I asked him to vet my exams for typos and mistakes before I printed them and was amazed at the care and precision that he applied to the task. He was quiet but really professional. I only give him an overall rating of excellent, rather than outstanding, due to limited observation of his interaction with students, though I did*

hear good things."

- Kieran Furlong (ECO100: Introductory Economics; 2016-17): *"Frank's performance is award quality. He is incredibly conscientious and capable in his tutorial leadership, exam marking, and editing of exams."*
- Kieran Furlong (ECO102: Principles of Macroeconomics; Summer 2017): *"Frank really deserves an award. He is not only extremely capable in all facets of invigilating, marking, and tutoring but he brings a discipline and knowledge of the subject at a first year level that is unparalleled in my experience. I've asked him to review my exams for a few years now and his attention to detail and theory is absolutely unrivalled. This is no small feat for a graduate student since Principles is presented very differently than graduate economics. I would suggest that he be given the first available opportunity to teach Principles since he really grasps the theory and knows how to teach it to first year students. He is very capable and he works hard at every function."*
- Ronald Wolthoff (ECO2100: Macroeconomic Theory I (PhD); 2018-19): *"Multiple PhD students mentioned to me that Frank is by far the best TA they have had so far."*
- Murat Celik (ECO2100: Macroeconomic Theory I (PhD); 2018-19): *"Frank did an outstanding job despite the fact that much of the material I covered was new to him. He spent a great amount of time to prepare and clarify assignment solutions which the students found to be very useful."*
- Diego Restuccia (ECO208: Macroeconomic Theory; 2018-19): *"Frank went beyond the call of duty and made an otherwise heavy course with about 130 students enrolled a smooth operation. His effort and professionalism are to be commended. Probably the best TA work I have supervised in 20 years in Toronto. Definitely award quality."*

5 Sample Materials

In the following pages, I have attached supporting material referred to throughout this dossier. In particular, I have attached the following documents (in order):

1. TATP Teaching Fundamentals Certificate (2 pages)
2. Teaching Award (2019) (1 page)
3. Course Instructor Evaluation, University of Toronto (17 pages)
4. Sample Syllabus (ECO 208, Macroeconomic Theory, Summer 2019) (6 pages)
5. Sample Writing Assignment (ECO 208, Macroeconomic Theory, Summer 2019) (4 pages)
6. Sample Exam (ECO 208, Macroeconomic Theory, Summer 2019, Midterm Exam 1) (3 pages)

Certificate Programs

Teaching Fundamentals Certificate

Congratulations, you have completed this certificate!

Description

This basic or introductory-level certificate is open to currently registered students at the University of Toronto who are interested in improving their teaching skills, and who are currently working as teaching assistants, or who soon will be. You do not have to hold a teaching appointment at the time of registration in order to register for this certificate. Workshops and/or events are offered at the UTM, UTSC, and St. George campuses.

Requirement: 6 TATP-sponsored workshops (3 required, please see information below), written reflection (assesses the overall value and impact of the TF certificate program)

Required Workshops: Of the 6 TATP-sponsored workshops, participants must attend:

- One workshop from the **Equity and Access in Teaching and Learning** category
- One workshop from the **Educational Technologies and Teaching with Technology** category
- One workshop from the **Reflective Practice and Teaching Skills for Academic and Non-Academic Careers** category

Deadline: One year (12-months) from date of registration.

Details and Registration

Teaching Fundamentals Certificate

Program Description

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- One workshop from the **Equity and Access in Teaching and Learning** category
- One workshop from the **Educational Technologies and Teaching with Technology** category
- One workshop from the **Reflective Practice and Teaching Skills for Academic and Non-Academic Careers** category

Deadline: One year (12-months) from date of registration.

Registration information

You are registered in this program.

Registered on: Jul 09, 2020
Completed by: Mar 09, 2022

Congratulations! You have completed this certificate!
Date completed: May 17, 2021

Certificate Portions

⊞ Workshops

⊞ Written Reflection

Frank Leenders

is awarded

The 2019 Award for Excellence in Teaching by Teaching Assistants

from the

Department of Economics, University of Toronto

Congratulations and best wishes for your continued success

Ettore Damiano
Chair

Description of Your Report

Your Course Evaluation Report contains up to four sets of items, represented in up to four sections in your report, described below.

Sets of Items

Institutional Items
These eight items are consistent across the University of Toronto. They are comprised of:

- Five rating-scale items which represent institution-wide teaching and learning priorities.
  - **The institutional composite mean, a mathematical average of these first five items.**
- One rating-scale item on the overall quality of a student's learning experience.
- Two qualitative comment items.

Divisional Items
These items are consistent across your division. They represent division-wide priorities for teaching and learning.

Departmental/Program/Course-Type Items
These items (when applicable) represent further levels of granularity and specificity for teaching and learning priorities within your division (e.g., department, program, course type).

Instructor-Selected Items
These items are optional items which may be selected from the item bank by instructors during the question personalization period.

- **Note that the results from these items are only reported to instructors, as they are primarily intended to function as personal formative feedback.**

Report Sections

The following provide different statistical summaries and representations for your institutional, divisional, and departmental/programmatic items (where appropriate).

Section 1: Course Evaluation Overview
Provides all course evaluation data except instructor-selected items.

Section 2: Response Distributions and Additional Statistics
Provides detailed response distributions.

- The number and relative percentage of respondents providing a given answer is provided, along with a graphical representation.
- This section also reports further statistics for each set of items relative to Section 1.

Section 3: Comparative Data
Provides comparative means for your course as compared to the relevant means across ***all*** *other evaluated courses at a particular level of comparison (e.g. division, program)* for each set of items.

Section 4: Instructor-Selected Items
Provides data for optional items that instructors can select from the item bank during the question personalization period. This section is formatted identically to Section 2.

Statistical Terms Used in this Report

Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

Mode: The most frequently occurring score.

Standard deviation: A measure of the "spread" of the data.

FAS Summer 2019 Undergrad F

Course Name: Macroeconomic Theory ECO208Y1-Y-LEC0101 (A)
Division: ARTSC
Session: Y
Session Codes: F = First/Fall, S = Second/Winter

Instructor: Frank Leenders
Section: LEC0101

Report Generation Date: July 2, 2019

Raters	Students
Responded	8
Invited	36

Section 1: Course Evaluation Overview

Part A. Core Institutional Items

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

Question	Summary	
	Mean	Median
I found the course intellectually stimulating.	4.5	4.5
The course provided me with a deeper understanding of the subject matter.	4.8	5.0
The instructor (Frank Leenders) created an atmosphere that was conducive to my learning.	4.6	5.0
Course projects, assignments, tests, and/or exams improved my understanding of the course material.	4.4	4.5
Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.	4.6	5.0
Institutional Composite Mean	4.6	-

Scale: 1 - Poor 2 - Fair 3 - Good 4 - Very Good 5 - Excellent

Question	Summary	
	Mean	Median
Overall, the quality of my learning experience in this course was:	4.5	4.5

7. Please comment on the overall quality of the instruction in this course.

Comments
He's good.
very good, Frank’s lecture is very detailed
The instruction was great. The lectures covered all of the material, and tutorials helped a lot with understanding of technical part of the course.
He is an excellent instructor. Did a great job of explaining confusing concepts,and is very helpful outside of lecture time.
The instructor has done pretty good at teaching, but just spent too much time doing math process.
Frank is a really good instructor, he is so responsible and I really enjoy his class!

8. Please comment on any assistance that was available to support your learning in this course.

Comments
Office hours
Answer of the past exam
Frank Leenders was very responsive via email and during his office hours
Office hours were very helpful
Tut helps a lot.
Writing center

Part B. Divisional Items

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

Question	Summary	
	Mean	Median
FAS001 The instructor (Frank Leenders) generated enthusiasm for learning in the course.	4.6	5.0

Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

Question	Summary	
	Mean	Median
FAS002 Compared to other courses, the workload for this course was…	3.1	3.0

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

Question	Summary	
	Mean	Median
FAS003 I would recommend this course to other students.	4.3	4.0

Part C: Departmental Items

Scale: 1 - Poor 2 - Fair 3 - Good 4 - Very Good 5 - Excellent

Question	Summary	
	Mean	Median
UNIT(OQI) Overall, the quality of instruction provided by (Frank Leenders) in this course was:	4.6	5.0

Please comment on the value of time spent in class toward your overall learning experience in the course.

Comments
10 hours a week
Valuable
The time in class was the most valuable time in the course since all the information was explained in detail
Lectures are very helpful, a must attend
Valued

Please comment on the value of the required readings toward your overall learning experience in the course.

Comments
Textbook
Valuable
The textbook is not very important for this course since everything what is being taught is being posted online
Readings are essential
Helpful

Please comment on the extent to which course assignments and tests required you to think and apply course concepts rather than memorize them.

Comments
Writing assignment
Moderate level on the exam, just give more time for the exams for us to clearly think and figure out the answers.
I wouldn’t be able to complete any assignments or tests simply by memorizing the concepts
Assignments tested us well on our understanding, rather than memorizing equations
The assignment is really practical.

Section 2: Response Distributions and Additional Statistics

This section provides detailed response distributions.

Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

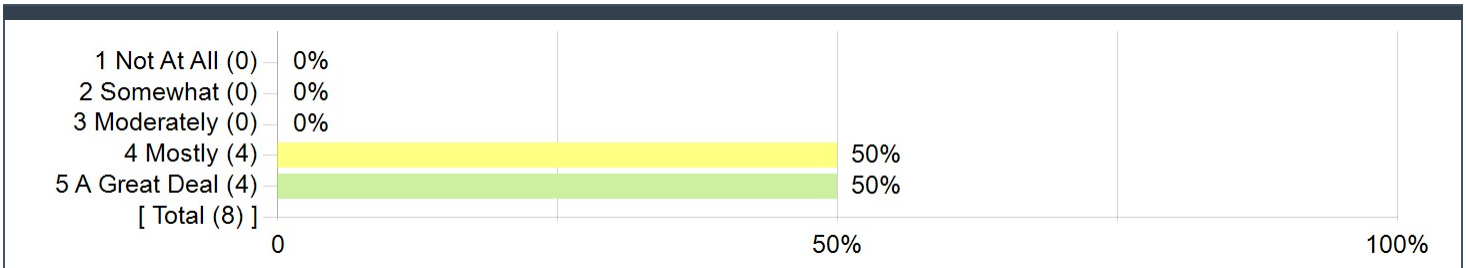
Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

Mode: The most frequently occurring score.

Standard deviation: A measure of the "spread" of the data.

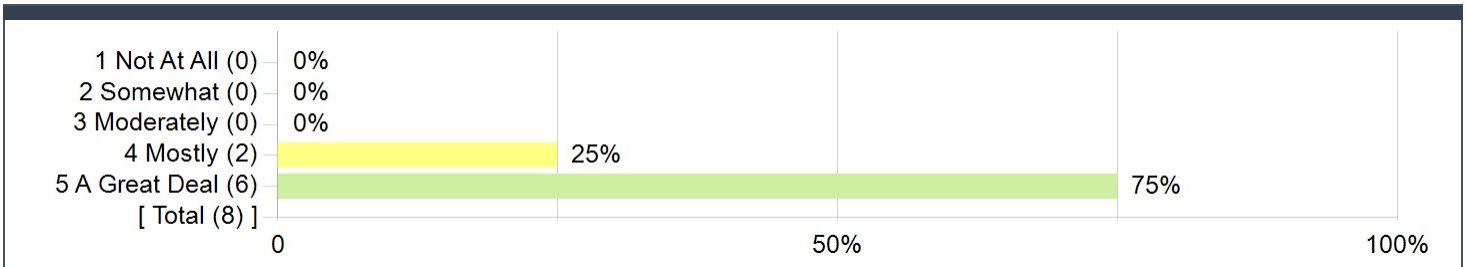
Part A: Core Institutional Items

1. I found the course intellectually stimulating.



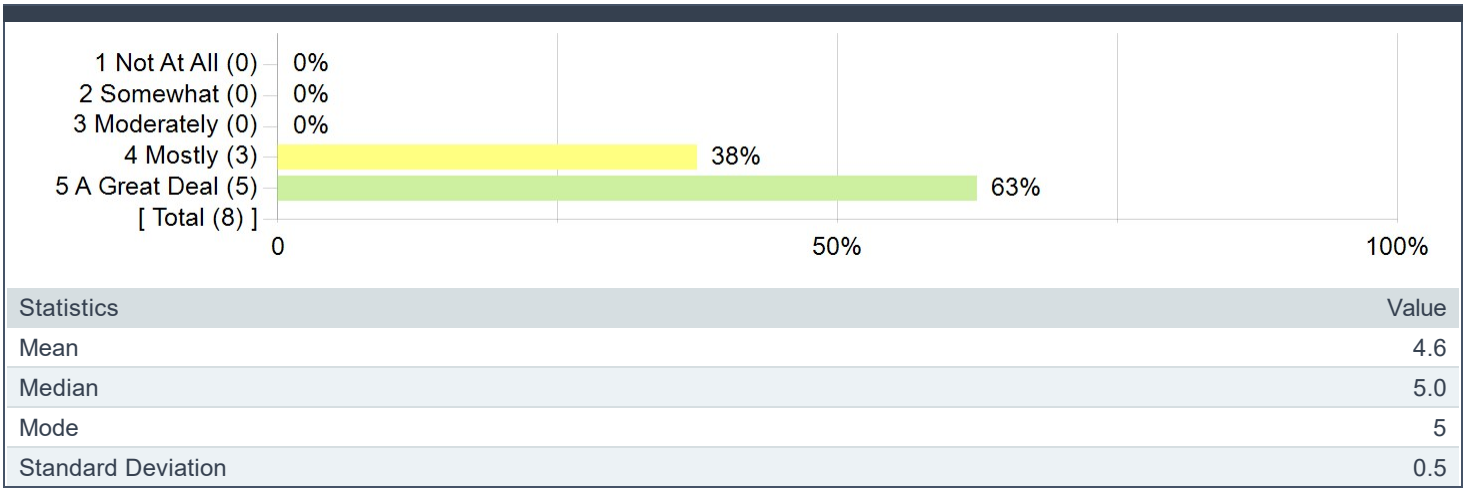
Statistics	Value
Mean	4.5
Median	4.5
Mode	4, 5
Standard Deviation	0.5

2. The course provided me with a deeper understanding of the subject matter.



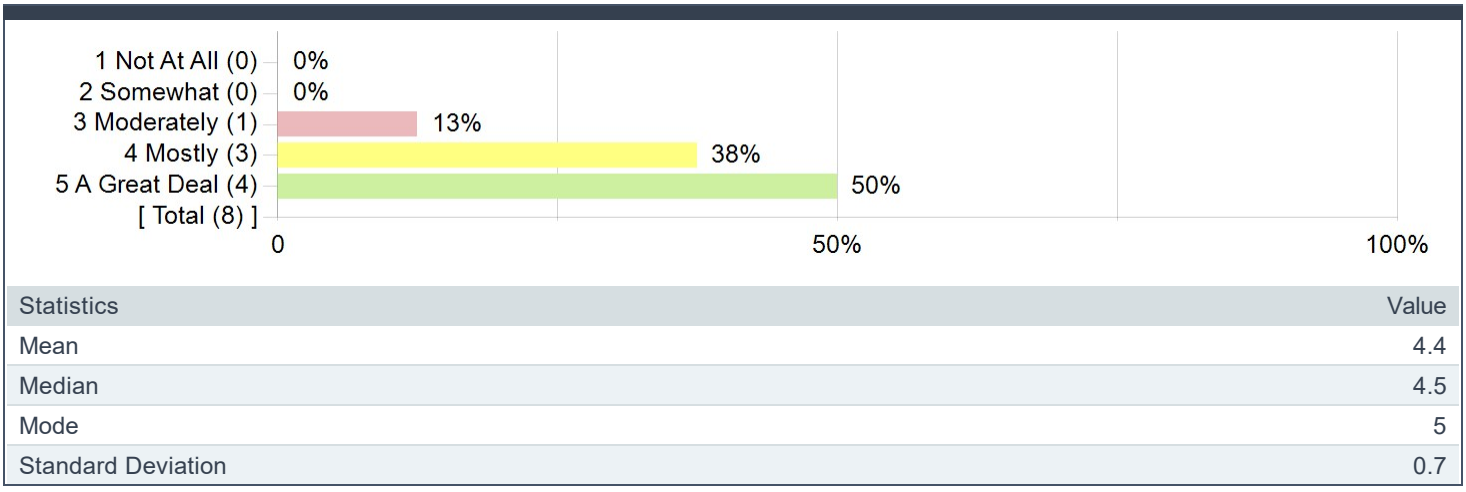
Statistics	Value
Mean	4.8
Median	5.0
Mode	5
Standard Deviation	0.5

3. The instructor (Frank Leenders) created a course atmosphere that was conducive to my learning.



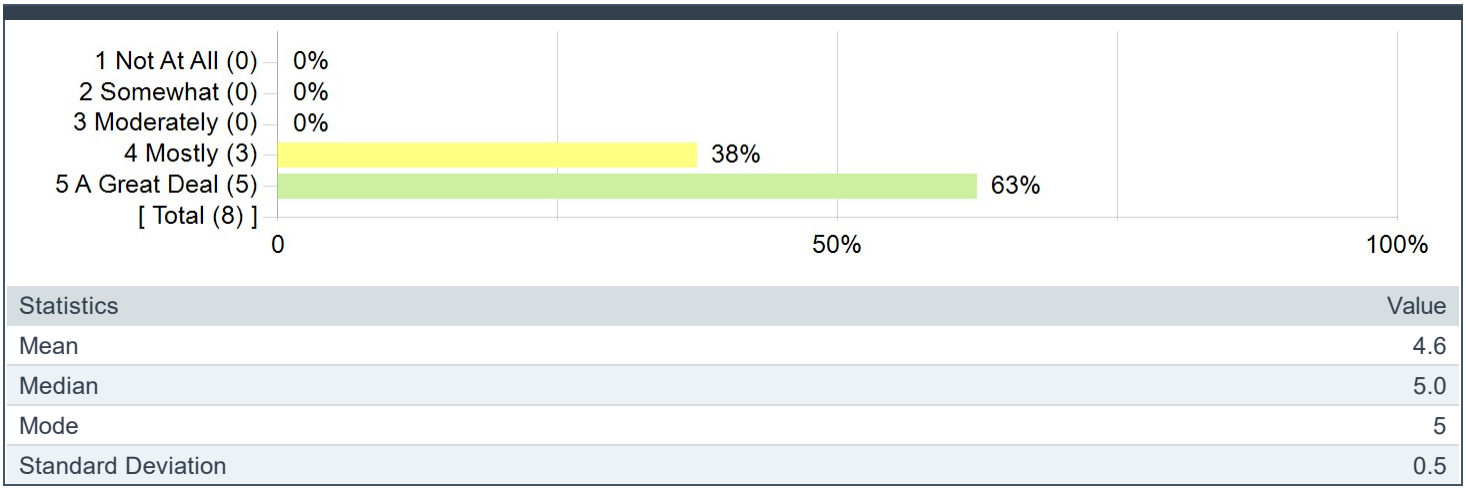
Statistics	Value
Mean	4.6
Median	5.0
Mode	5
Standard Deviation	0.5

4. Course projects, assignments, tests and/or exams improved my understanding of the course material.



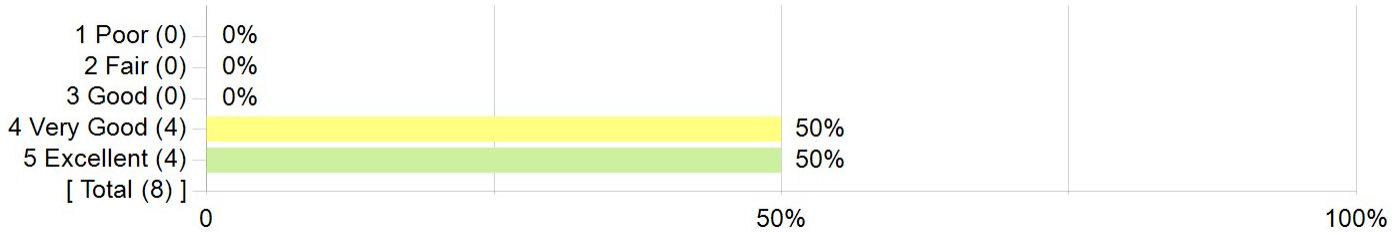
Statistics	Value
Mean	4.4
Median	4.5
Mode	5
Standard Deviation	0.7

5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.



Statistics	Value
Mean	4.6
Median	5.0
Mode	5
Standard Deviation	0.5

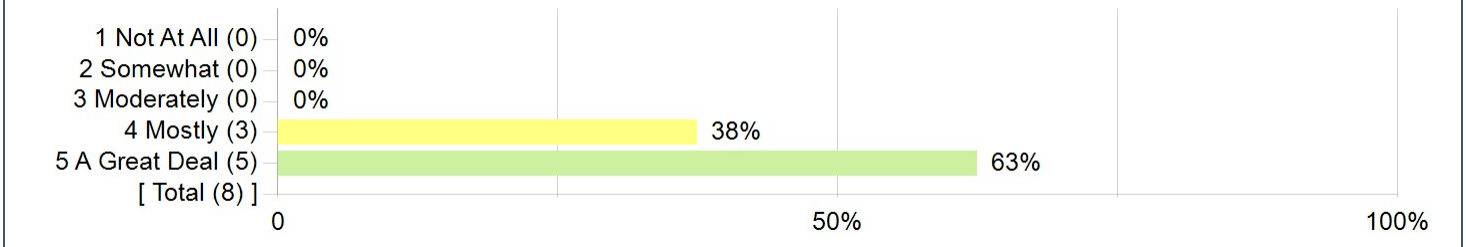
6. Overall, the quality of my learning experience in this course was….



Statistics	Value
Mean	4.5
Median	4.5
Mode	4, 5
Standard Deviation	0.5

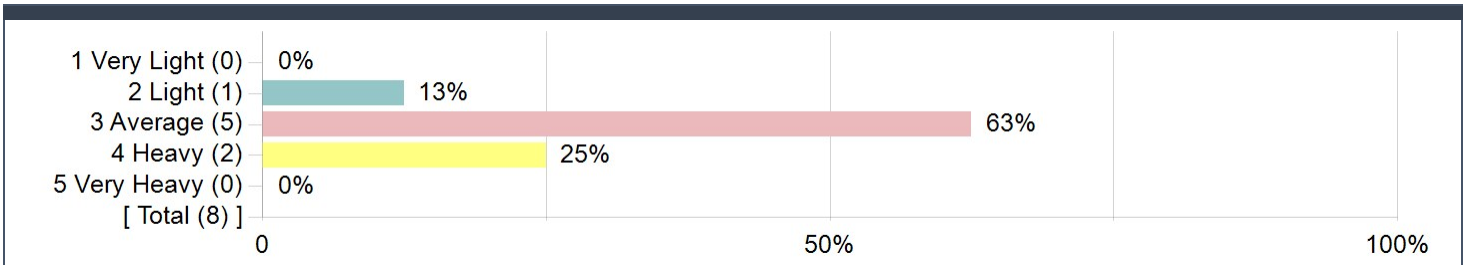
Part B. Divisional Items

The instructor (Frank Leenders) generated enthusiasm for learning in the course.



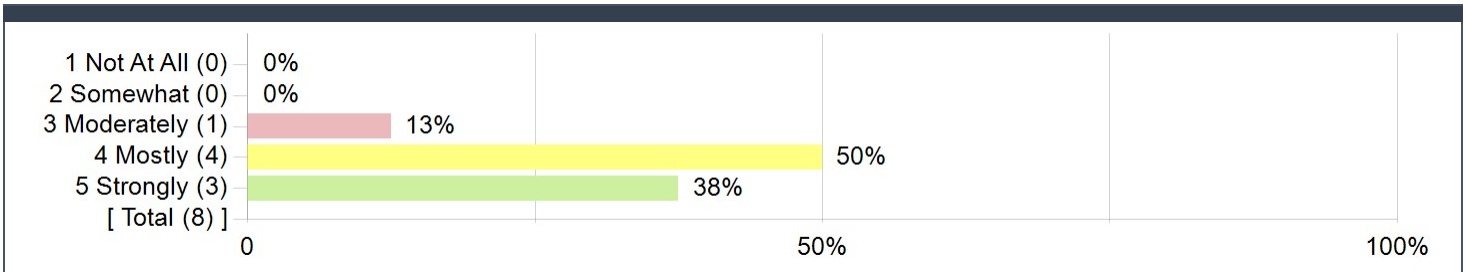
Statistics	Value
Mean	4.6
Median	5.0
Mode	5
Standard Deviation	0.5

Compared to other courses, the workload for this course was…



Statistics	Value
Mean	3.1
Median	3.0
Mode	3
Standard Deviation	0.6

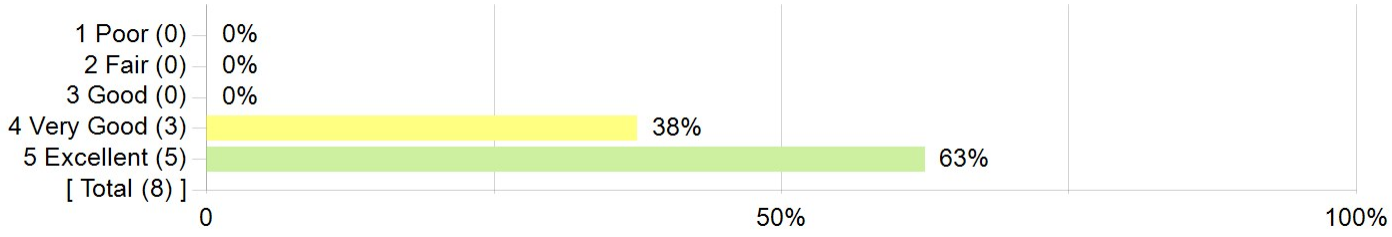
I would recommend this course to other students.



Statistics	Value
Mean	4.3
Median	4.0
Mode	4
Standard Deviation	0.7

Part C. Departmental Items

Overall, the quality of instruction provided by (Frank Leenders) in this course was:



Statistics	Value
Mean	4.6
Median	5.0
Mode	5
Standard Deviation	0.5

Section 3. Comparative Data

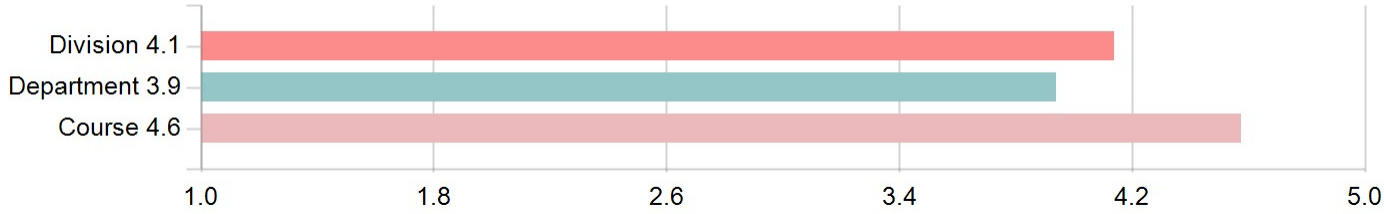
This section provides overall means for given comparators (e.g., division, department) alongside the mean values for a given course. Note that the comparators are calculated by pooling together all individual student survey responses (e.g., student responses for all of the courses in a department are pooled together and the departmental mean responses calculated from that). The provided comparators are thus a measure of the 'average' student experience for a unit or division; they are not a measure of the 'average' course in a unit or division. This calculation has the effect of giving large courses more 'weight' in the calculation of the comparator means. The effect of this on the calculated comparator varies depending on the relative proportion of large or small courses within a unit or division. As such, the departmental and divisional comparative mean values provided on course evaluations should not be regarded as an absolute and definitive benchmark.

For example, if a department offered only two courses, one with 1000 students who all answered 3.5 and the other with 10 students who all answered 4.5 (so that the means would be 3.5 and 4.5 respectively), then the departmental mean provided on the course evaluations would be 3.51 since the calculation would be [(3.5x1000)+(4.5x10)]/1010]=3.51 ***and not*** *(3.5+4.5)/2=4.*

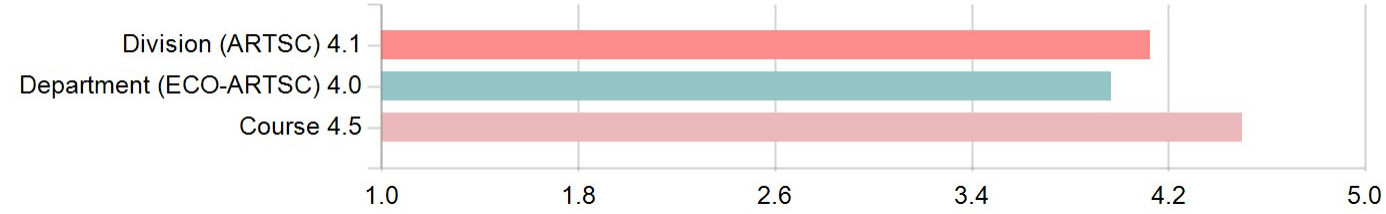
Part A. Core Institutional Items

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

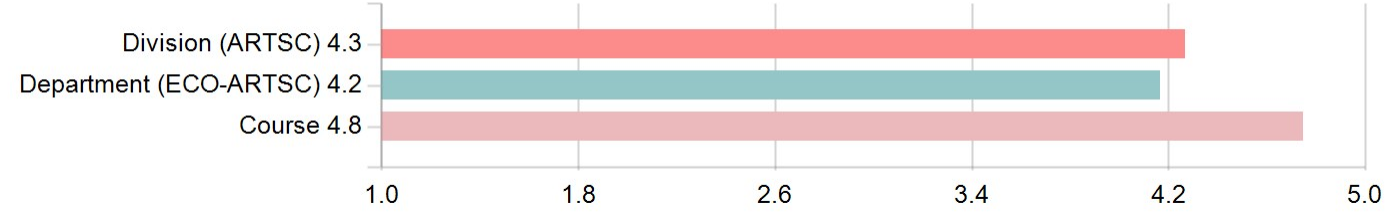
Institutional Composite Mean



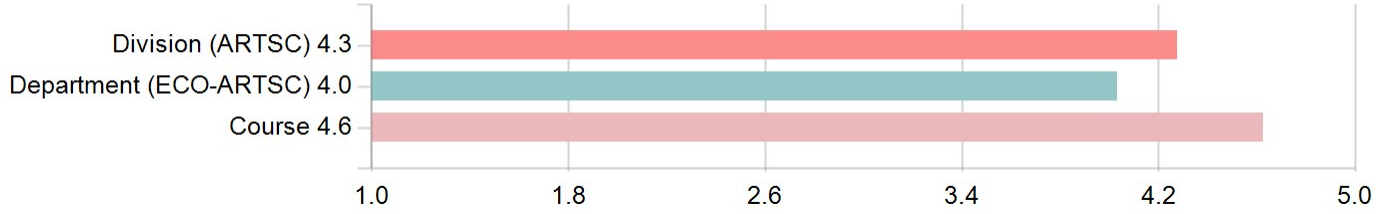
1. I found the course intellectually stimulating.



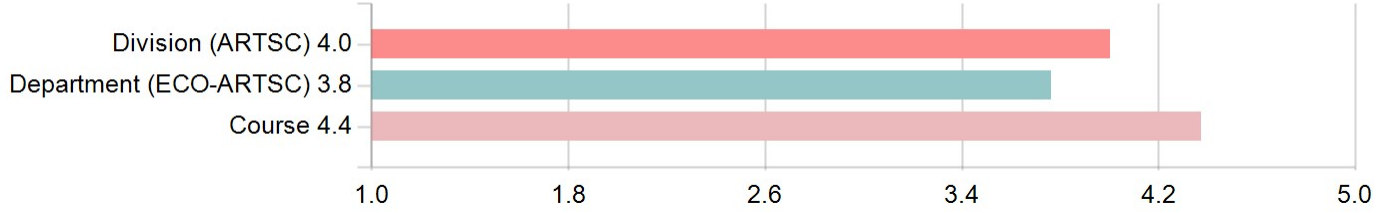
2. The course provided me with a deeper understanding of the subject matter.



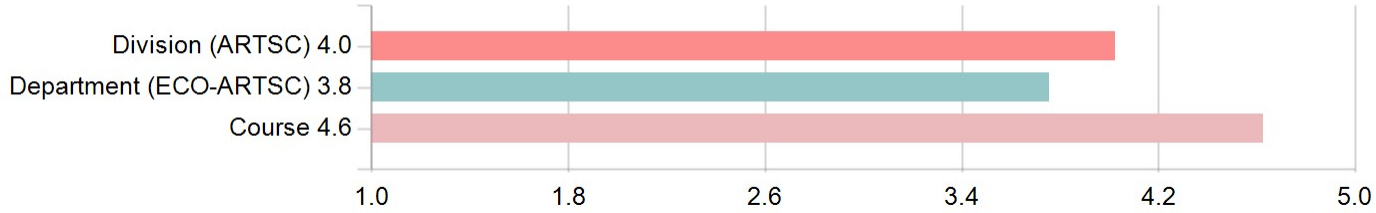
3. The instructor (**Frank Leenders**) created an atmosphere that was conducive to my learning.



4. Course projects, assignments, tests, and/or exams improved my understanding of the course material.

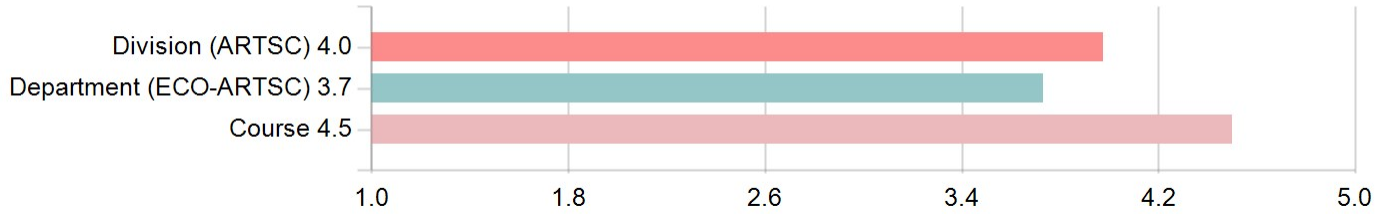


5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.



Scale: 1 - Poor 2 - Fair 3 - Good 4 - Very Good 5 - Excellent

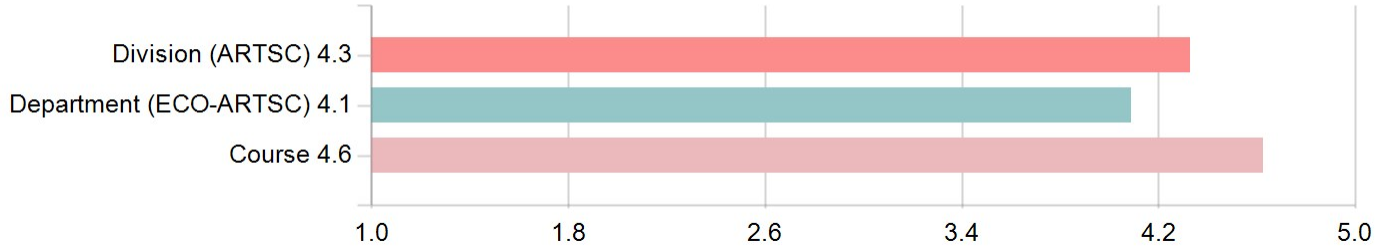
6. Overall, the quality of my learning experience in this course was:



Part B. Divisional Items

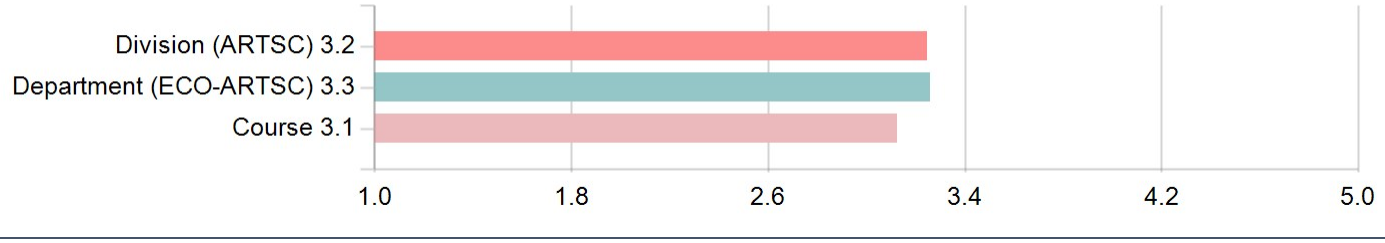
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

9. The instructor generated enthusiasm for learning in the course.



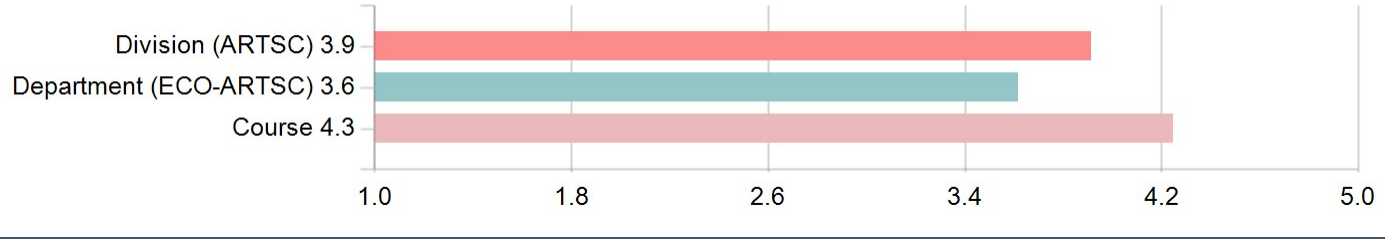
Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

10. Compared to other courses, the workload for this course was:



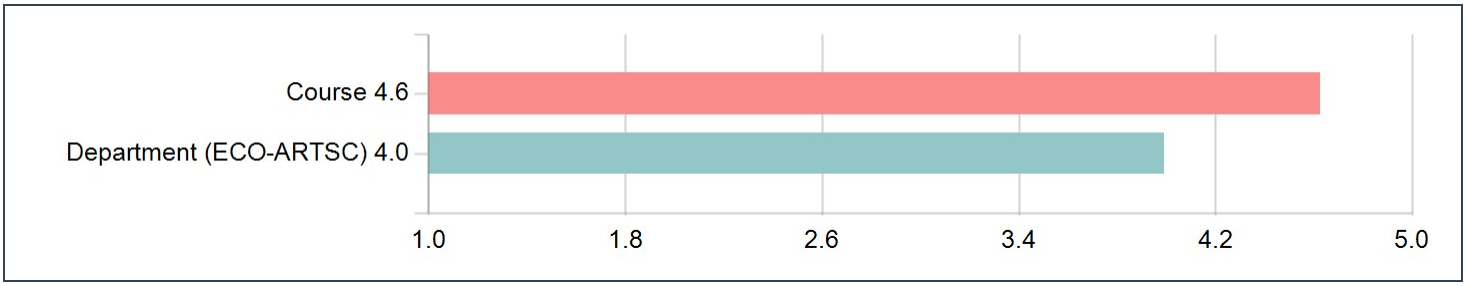
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

11. I would recommend this course to other students.



Part C: Departmental Items

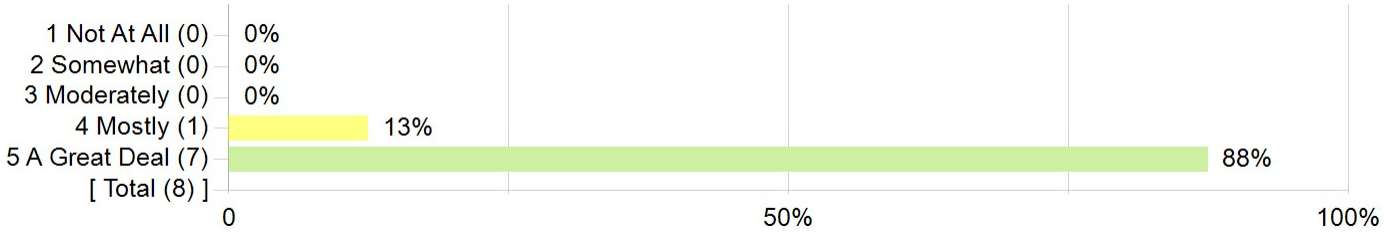
Overall, the quality of instruction provided by (Frank Leenders) in this course was:



Section 4: Formative Data

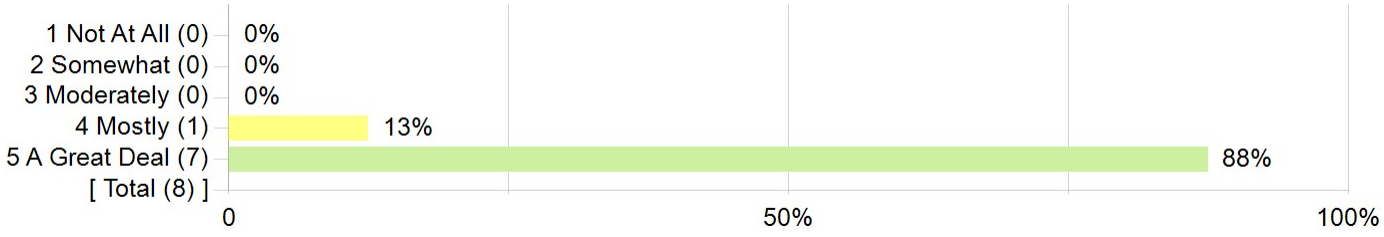
These items are optional items which you selected from the item bank during the question personalization period. Note that the results from these items are only reported to you as they are primarily intended to function as personal formative feedback.

A-2. During the course, the course instructor (Frank Leenders) was approachable when students sought guidance.



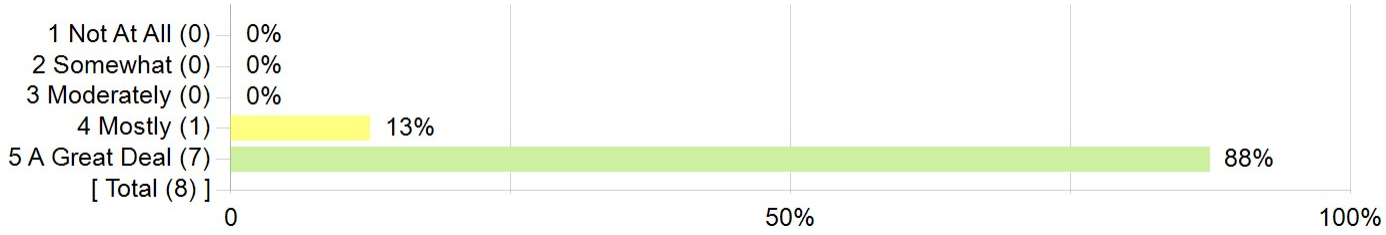
Statistics	Value
Mean	4.9
Median	5.0
Mode	5
Standard Deviation	0.4

C-3. The course instructor (Frank Leenders) organized lectures in a logical manner.



Statistics	Value
Mean	4.9
Median	5.0
Mode	5
Standard Deviation	0.4

D-1. The course instructor (Frank Leenders) responded respectfully to students' questions.



Statistics	Value
Mean	4.9
Median	5.0
Mode	5
Standard Deviation	0.4

University of Toronto
Department of Economics
ECO208Y1Y—L0101
Macroeconomic Theory
Summer 2019
Cory Langlais and Frank Leenders

Lectures: Tuesdays and Wednesdays (unless otherwise specified) 4:00-6:00 pm, BA 1220

Tutorials: Thursday (unless otherwise specified) 4:00-6:00 pm, BA 1220

Instructor 1 (May-June): Frank Leenders, frank.leenders@mail.utoronto.ca,
– Office hr: Mondays 4-5.30pm, Location GE213 (or by appointment)

Instructor 2 (July-August): Cory Langlais, cory.langlais@mail.utoronto.ca,
– Office hr: Mondays 4-5.30pm, Location GE213 (or by appointment)

TA 1 (Tutorials & Office Hours): Paul Zibo Han, p.han@mail.utoronto.ca,
– Office hr: Fridays 4-5pm , Location GE213

TA 2 (Writing TA): Baxter Van Halm Robinson, baxter.robinson@mail.utoronto.ca

TA 3 (Grading Only): Jie Fang

Course Description: ECO208 is an intermediate-level course in macroeconomics. In this course, tools to study macroeconomic events and policies are developed using a framework that is based on micro-foundations – the dominant approach in macroeconomics since the Lucas Critique. Topics include: measurement of aggregate economic variables and business cycles, analysis of government policies, unemployment, economic growth, business cycles and monetary policy, international trade and exchange rates. While the aim is to develop the theoretical tools with which to analyze the macroeconomy, data from several countries will be used to provide examples and to broaden the understanding of the global economy.

Prerequisites: ECO100Y1(70%)/(ECO101H(70%), ECO102H(70%));
MAT133Y1(63%)/(MAT135H1(60%),MAT136H1(60%))/MAT137Y1(55%)/MAT157Y1(55%)

Exclusion: ECO202Y1, ECO209Y1

Note that we cannot waive the prerequisites, and enrolment is handled by the department. If you need help with enrolment, you can contact the undergraduate administrator at your department (different for commerce students). See the course policy of the economics department at: https://www.economics.utoronto.ca/index.php/index/undergraduate/load/prerequisites

Learning Outcomes: As a successful student in this course, you will be able to:

1. Solve economic problems using theoretical models, calculus, and diagrams.

2. Explain the difference between a Pareto Optimal allocation and a competitive equilibrium and the role of "frictions" in economic research.
3. Describe the theory underlying business cycles in both Neoclassical and New Keynesian frameworks.
4. Apply theory to predict how fiscal and monetary policies will affect key economic outcomes such as unemployment, aggregate income, and real interest rates.
5. Explain what Dynamic General Equilibrium Models are and how they are used in macroeconomic research
6. Write a thoughtful, critical analysis of a macroeconomic issue using both theory and empirical data.

Textbook: We will use "Macroeconomics" by Stephen Williamson (fifth Canadian edition). You can purchase the book at the University of Toronto Bookstore on campus. This is an excellent text in macroeconomics and we will follow it closely. Recommended readings will be announced and posted throughout the course.

Grading and Exam Policy: The course grade will consist of term work (60% of the final grade) and a final exam (40%):

	Date	Location	Weight
Term Test 1	May 28	TBA	50% (see below)
Term Test 2	June 13	TBA	
Term Test 3	July 24	TBA	
Writing Assignment 1	June 6	Quercus	5%
Writing Assignment 2	August 8	Quercus	5%
Final Exam	Exam Period: August 15-22	TBA	40%

Term work will include three midterm exams and two written assignments. For the term tests, the best two test marks will be worth 20% each, and your lowest of the three test marks will be worth 10%. The written assignments are worth 5% each. The assignments will be submitted online, by the beginning of the class on the due date.

The current plan is to have the midterm exams during class time, in our regular room; but this may be subject to change later on. If there is a change, it will be announced on the course website.

Make sure you check the important dates at the end of this document (and in the table above) to ensure that there are no conflicts with the exam dates. You are responsible for reporting the conflict within the first two weeks of classes so that accommodations can be made.

Class participation is highly encouraged, and will count positively towards marginal adjustments to the final course grade. Class attendance is also highly encouraged, but this will not be enforced (i.e. there will be no pop-up quizzes or attendance sheets). However, it should be understood that the student bears responsibility for missing any lectures. Since the examinations will rely on the material covered during the lectures, missing too many lectures will without a

doubt lead to a low performance. The TA or the instructors are not responsible to help you catch up with missed lectures; this is the student's responsibility.

Missed tests and assignments: If you miss a term test for a legitimate reason (see below), you will have to write a makeup test at a time and location to be announced. If you miss more than one term test, the grade weight of one term test will shift to the final exam. In such cases, your final exam will be worth 50%, and the makeup test will account for 20 or 40%. The make-up test will be cumulative.

If the deadline of a written assignment is missed, students can submit it within 7 days, but this will result in a late penalty of up to 35% of the grade for the assignment (5% per day). The late penalty may be waived if the student is ill and provides appropriate medical documentation. In such cases, the assignment will be due for the next class following the "anticipated end date" on the form. Late submission penalties apply unchanged given this new due date.

Only the university's official "Verification of Student Illness or Injury" form signed by a medical doctor will be accepted as proof of illness for missed work or tests. The doctor must confirm that the student is too ill by the due date of an assignment or the test date. If this occurs, the student is responsible for contacting the instructors (see e-mail above) on the due date/test date.

Re-grading Policy for Term Work: The Re-grade policy for term work will be posted on Quercus at the start of the course. In short, students who want to have a midterm test or assignment re-graded must submit a re-grade form **within one week of the date that the test or assignment is returned** (whether or not the student actually picked up the exam or assignment on that date)**.** This form will be made available on the course website. The form can be handed in before or after a lecture, or a scanned version can be sent to the instructors.

Re-grading Policy for Final Exam and Course Mark: Final exams are subject to different rules. You need to contact the Faculty of Arts and Sciences for viewing your final exam, and requesting a re-grade. Refer to the information provided in the following links:

http://www.artsci.utoronto.ca/current/exams/examview
http://www.artsci.utoronto.ca/current/exams/rr

Sample Problems: Suggested sample problems will be assigned for the topics covered in class, but they will not be handed in or graded. On most weeks, the TA will go over some of the problems and answer questions during the tutorial hours. Tutorials will generally be held on Thursdays, but may occasionally be scheduled on a different day (in which case the Thursday time allocation is used for a lecture or term test). If this is the case, this will be announced in class and on Quercus.

Office Hours: Both the instructors and the TA's will hold office hours. See the first page for the times and locations.

Contact Policy: The preferred method of communication is in person, during lecture, tutorials and office hours. In the event that communication by e-mail is needed, please make sure to identify yourself and use your utoronto.ca e-mail account. This is to prevent missing e-mails due

to the spam filter. For e-mails asking for a reply, we will reply within three business days. If we fail to do so, you should assume we forgot and re-send your message to remind us.

Quercus (course website): This course uses the University's learning management system, Quercus, to post information about the course, including materials required to complete class activities and course assignments, share important announcements and updates, and foster academic discussion between learners. The site is dynamic and new information and resources will be posted regularly as we move through the term. The principal source of information about all course-related work will be the course site in Quercus, so please make it a habit to log in to the site on a regular if not daily basis. Please note that any grades posted within the Quercus Grade Centre are posted for your information only, so you can view and track your progress through the course. No grades are considered official, included any posted in Quercus at any point in the term, until they have been formally approved by the Course Instructor at the end of the course.

Crowdmark: The department of economics has secured Crowdmark for all of our undergraduate course offerings. Crowdmark is a 'collaborative online grading and analytics platform that helps educators evaluate student work more effectively.' Your term tests will be scanned and uploaded to Crowdmark. It is here that your tests will be graded.

Ongoing Learning Disability or Accommodation Requirement: Students with diverse learning styles and needs are welcome in this course. If you have an ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) (http://www.studentlife.utoronto.ca/as). Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will then assess your medical situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your condition with any instructor, and your instructors will not reveal that you are registered with AS.

Academic Integrity: All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. This is critically important to maintain our community that honors the values of honesty, trust, respect, fairness and responsibility. The goal of these guidelines and policies are to protect you, the students within this community, and the value of the degree towards which you are all working so diligently. According to Section B of the University of Toronto's Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf), which all students are expected to know and respect, it is an offence for students to:

- Obtain unauthorized assistance on any assignment.
- Provide unauthorized assistance to another student. This includes showing another student completed work (e.g. an answer on a test).
- Falsify or alter any documentation required by the university. This includes, but is not limited to, doctor's notes.

- Use or possess an unauthorized aid in any test or exam (e.g. a cell phone).
- Continue writing when the time is up in any test or exam.
- Submit a medical note to get out of a test when the student is not actually sick.

There are other offenses covered under the Code, but these are by far the most common. Please respect these rules and the values that they protect. For useful tips on avoiding academic misconduct, please visit the website of the Office of Student Academic Integrity at http://www.artsci.utoronto.ca/osai/students/avoid-misconduct.

Plagiarism: We ask you to submit your writing assignments to Turnitin.com, through the assignment hand in page on Quercus, for the detection of possible plagiarism. The university requires that the following paragraph be included in the syllabus of all courses using Turnitin.com:

> *'Normally, students will be required to submit their essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turitin.com web site.'*

Please note that you are not obligated to submit your paper to Turnitin.com. If you object to submitting your paper to Turnitin.com, let the instructor know at least one week prior to the due date, and he will offer you a reasonable alternative.

English Language Learning: ELL supports all U of T undergraduates enrolled in the Faculty of Arts and Science whose first language is not English (ESL or multilingual students), as well as native speakers seeking to improve their English language skills. Learn more at: http://www.artsci.utoronto.ca/current/advising/ell

Tentative Outline:

1) Introduction (W, Chapter 1)
2) Measurement (W, Chapter 2)
3) Business Cycle Measurement (W, Chapter 3)
4) Consumer and Firm Behavior (W, Chapter 4)
5) A Closed-Economy One-Period Model (W, Chapter 5)
6) Unemployment (W, Chapter 6)
7) Economic Growth (W, Chapters 7-8)
8) A Two-Period Model (W, Chapter 9)
9) Credit Market Imperfections (W, Chapter 10)
10) A Real Intertemporal Model with Investment (W, Chapter 11)
11) A Monetary Model (W, Chapter 12)
12) Business Cycle Models (W, Chapters 13-14)
13) International Trade in Goods and Assets (W, Chapter 16)
14) Money and Banking (W, Chapters 17-18)

Note that the material in some chapters will be complemented with parts of the Mathematical Appendix from the textbook and from additional notes. A full set of lectures will be provided as the class progresses.

Important Dates:

May 7, 2019 – First Lecture
May 9, 2019 – Lecture (1st hour), Writing Tutorial (2nd hour)
May 16, 2019 – First Regular Tutorial
May 28, 2019 – First term test
May 30, 2019 – Lecture instead of tutorial
June 6, 2019 – Due date for Writing Assignment 1
June 12, 2019 – Tutorial instead of lecture
June 13, 2019 – Second term test

July 2, 2019 – First Lecture of the second term
July 4, 2019 – First Tutorial of the second term
July 15, 2019 – Last day to drop the course without academic penalty
July 24, 2019 – Third term test
August 7, 2019 – Last Lecture
August 8, 2019 – Last Tutorial, Due date for Writing Assignment 2
August 15-22, 2019 – Final exam period.

ECO208 - Macroeconomic Theory

Summer 2019 - Writing Assignment 1

Due: June 6, 2019, 4.10pm (sharp deadline)

An electronic copy must be submitted via Quercus before the scheduled start of the tutorial (4:10 pm).

1 Introduction

This writing assignment consists of a report describing graphs plotted from time series observations and a short essay addressing a question related to these observations. The report should be typed on your favourite editor and uploaded to Quercus as a single pdf file. The report should have reasonable margins, 12 point font, and one and a half line spacing. Make sure to include your name, student number, and a page number to every page of the report. Every figure should be numbered, have a title, labels, legends (if appropriate), and a note with any relevant information (including the data source) that ensures that the figure can be understood without reading the text in the report. The electronic copy of the report must be submitted via Quercus before the start of the tutorial on Thursday June 6th[1]. You do not need to hand in a physical copy. Late submissions will be penalized as outlined in the syllabus: a late submission will receive a 5 point penalty per 24 hours (starting at 4.10pm sharp on June 6th). If you are more than 7 days late, you will receive a grade of zero.

Note that each part below lists a maximum number of words allowed. As it is important to be concise in your discussion, exceeding the maximum word count will be heavily penalized.

2 Data Collection

In this assignment, you will use Labor Force Statistics data from Statistics Canada, from two separate tables. First, you will use data from the table "Labor force characteristics by sex and detailed age group, annual" (`https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410032701`). To select the relevant data from this table, click on the "Add/Remove reference period" button, which will lead you to a screen where you can customize the time period, geographic area, sex, age groups, variables and the layout of the table. From this table, you will need information on employment, population and labor force levels. For sex, include both sexes, males, and females. For age groups, select 15+, 15-24, and 15-64. For the time period, include 1976 to 2018. Finally, for geographical area, include only the total of Canada. Denoting population by N,

[1] Make sure you are aware of how to submit the assignment via Quercus well ahead of the deadline, so that you do not miss the deadline due to technical difficulties. See also the document "How to submit the assignment online" posted on Quercus.

employment by E and labor force by Q, you can now construct[2] time series for the employment rate E/Q and the participation rate Q/N. Either of these rates can be decomposed into gender and age categories. For example, the employment rate at any date t can be decomposed as the employment rate of each category (sex i and age j) weighted by the share of labor force of that category, that is

$$\left(\frac{E_t}{Q_t}\right) = \sum_{i,j} \left(\frac{E_{i,j,t}}{Q_{i,j,t}} \cdot \frac{Q_{i,j,t}}{Q_t}\right)$$

Additionally, you will use data from the table "Labor force characteristics by industry, annual (x1000)" (`https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1410002301`). Once again, you can click on the "Add/Remove reference period" button, which will allow you to customize the time period, geographic area, sex, age groups, variables, industries, and the layout of the table. From this table, you will need information on employment only, for both sexes and age group 15+. For the time period, include 1976 to 2018, and for geographical area include only the total of Canada. Finally, for industries, select the totals for "All Industries" and "Services-producing sector", as well as the following categories: "Agriculture [111-112, 1100, 1151-1152]", "Forestry, fishing, mining, quarrying, oil and gas [21, 113-114, 1153, 2100]", "Utilities [22]", "Construction [23]", and "Manufacturing [31-33]". For the purposes of this assignment, we will sum the employment figures into the following three categories:

1. "Primary": This category includes the employment of "Agriculture [111-112, 1100, 1151-1152]", and "Forestry, fishing, mining, quarrying, oil and gas [21, 113-114, 1153, 2100]".
2. "Secondary": This category includes the employment of "Utilities [22]", "Construction [23]", and "Manufacturing [31-33]".
3. "Tertiary": This category includes only the employment of the "Services-producing sector".

This summation will result in a time series for employment in these three sectors. In the questions below, you will use this employment as a fraction of total employment (employment share). To find this fraction, divide the employment in sector k at time t by the total employment ("All Industries") at time t.

3 Data Analysis

Using the above data, perform the following tasks:

1. Plot, in 2 separate graphs, the time series for the total participation and employment rate (both sexes, age 15+) from 1976 to 2018. Describe the long-run patterns you observe in each of these time series (i.e. do not focus on year to year fluctuations), in particular distinguishing between patterns before and after 2008 (i.e. for 1976-2008 and 2008-2018). Use a maximum of 150 words.

[2]Note that our definition of the employment rate is different from the definition used by Statistics Canada, so you cannot use their calculated "Employment Rate" for this assignment!

2. Plot, in 2 separate graphs, the time series for the participation and employment rate for males and females (age 15+) from 1976 to 2018. You should have one graph for the participation rates (of the different genders), and one graph for the employment rates (of the different genders). Describe the long-run patterns you observe in each of these time series (i.e. do not focus on year to year fluctuations), in particular distinguishing between patterns before and after 2008. How do these patterns help you explaining the patterns you observed in question 1? Use a maximum of 250 words.

3. Plot, in 2 separate graphs, the time series for the participation and employment rate (both sexes) from 1976 to 2018, for age groups 15-24, 25-64, and 65+. You should have one graph for the participation rates (of the different age groups), and one graph for the employment rates (of the different age groups) Describe the long-run patterns you observe in each of these time series (i.e. do not focus on year to year fluctuations), in particular distinguishing between patterns before and after 2008. How do these patterns help you explaining the patterns you observed in question 1? Use a maximum of 250 words.

4. Plot, in 3 separate graphs, the time series for the employment share of the primary, secondary, and tertiary sector (as defined above), from 1976 to 2018. Describe the long-run patterns you observe in each of these time series (i.e. do not focus on year to year fluctuations), using a maximum of 150 words.

4 Short Essay

In the United States, the participation rate has seen a substantial decrease over the last decade. In particular, a recent column in VoXEU by Steven Braun and co-authors entitled "Understanding the decline in the labour force participation rate in the United States"[3] observes a 3 percentage point drop in the participation rate since 2007, and identifies the ageing of the US population as one of its major contributors. Additionally, a blog by IMF economists Francesco Grigoli, Zsóka Kóczán and Petia Topalova entitled "Wanted: Policies to Encourage and Enable Work in Advanced Economies"[4] and its accompanying research article pointed out that automation, which has a stronger impact on certain sectors, also negatively affects the participation rate.

In 650 words or less (excluding the reference list, but including in-text citations and footnotes), write an essay that addresses the following questions:

Has the Canadian Participation rate increased or decreased since 2008? Is ageing, automation, or a different factor driving this change?

You can supplement your arguments with the use of media or academic literature as well as additional relevant data. Your essay should use at least 2 such sources, and at least one of them should be a new

[3] You can access the article (written by Steven Braun, John Coglianese, Jason Furman, Betsey Stevenson, and Jim Stock) through `https://voxeu.org/article/decline-labour-force-participation-us`

[4] You can access this article through
`https://blogs.imf.org/2018/04/09/wanted-policies-to-encourage-and-enable-work-in-advanced-economies/`

source (a source that was not provided to you in this document). When you use these sources, you should cite them properly. In particular, ALL your references should be cited, including any data used to back up your argument, background articles you use, and any additional sources. All citations should be in the Chicago Manual Author-Date style. Failing to cite all sources is considered plagiarism and will be dealt with accordingly, regardless of whether it was intentional or not. See `http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize`, the "How To Cite in Economics" document (posted on Quercus), and resources from Baxter's writing tutorial (held on Thursday May 9th, 5-6pm in our regular classroom) for more information.

U of T email address _____@mail.utoronto.ca

Surname (last name) _____

Given name (first name) _____

Student number _____

Signature _____

UNIVERSITY OF TORONTO
Faculty of Arts and Science

ECO 208Y (Macroeconomic Theory)
Instructor: Frank Leenders

Term Test 1
May 28, 2019

Duration: 90 minutes

Aids Allowed: Non-programmable calculator

This examination paper consists of **3** pages and **3** written-answer questions. Please bring any discrepancy to the attention of an invigilator. The number in brackets at the start of each question is the number of points the question is worth.

Instructions:

- Do not turn this page until instructed.
- Do not write anything in the region above a page - this is reserved for Crowdmark
- This is a closed book, closed notes exam.
- Read each question carefully before attempting to answer. Write your answers clearly, completely and concisely in the designated space provided immediately after each question. No extra space/pages are possible. You cannot use blank space for other questions! Your entire answer (including explanation) must fit in the designated space provided immediately following each question.
- Please write in pencil and use an eraser as needed. This way you can be sure to fit your final answer, including work and reasoning, in the appropriate space.
- When you are done your exam, raise your hand for someone to come and collect your exam. Do not collect your bag and jacket before your exam is handed in.
- Clearly write any additional assumptions you have used. Be concise. Make sure to label your diagrams appropriately. **Good Luck!!**

1. (20 points) Suppose that an economy produces two goods: pizzas and hamburgers. All production in this economy is consumed domestically in the same year. The price and quantity data for Year 1 and Year 2 are gives in the tables below:

	Year 1		Year 2	
	Pizzas	Hamburgers	Pizzas	Hamburgers
Quantity	50	100	120	90
Price	\$12.00	\$10.00	\$13.00	\$15.00

   (a) [2] Calculate the nominal GDP of this economy in Year 1 and Year 2

   (b) [3] Using Year 1 as the base year, calculate the real GDP at constant prices of this economy in Year 1 and Year 2.

   (c) [3] Using Year 2 as the base year, calculate the real GDP at constant prices of this economy in Year 1 and Year 2.

   (d) [4] Using the chain-weighting method, calculate the real GDP of this economy in Year 1 and Year 2, using Year 1 as the base year.

   (e) [5] Calculate the implicit GDP price deflator and the percentage inflation rate from Year 1 to Year 2, implied by all three methods used above (in parts B, C, and D). *Hint: since you calculated the real GDP in three different ways, you should calculate three sets of implicit GDP price deflators and inflation rates.*

   (f) [3] Now suppose that, between Year 1 and Year 2, the unemployment rate decreased from 7% to 5%. Based on this information, your results from part E, and your knowledge about the business cycle behavior of the unemployment rate, does this indicate that the price level is procyclical, countercyclical, or acyclical? Explain.

2. (40 points) Consider the simple model of consumer choice from Chapter 4. The consumer faces the following budget constraint:

$$C = wN^s + \pi + S,$$

   for given w, $\pi > 0$ and lump-sum subsidy $S > 0$. The time constraint is $h = N^s + l$ where h is an endowment of time (in hours) that the consumer can allocate to work and leisure.

   (a) [10] Under standard preferences, show in a well-labeled diagram (with consumption C on the y-axis and leisure l on the x-axis) the optimal bundle for the consumer. Explain why such a bundle is optimal and state a condition that must be satisfied by the optimal bundle. *Hint: to explain why the bundle is optimal, explain why any other bundle on the diagram is not the optimal bundle.*

   (b) [10] Suppose, for this part only, that the government imposes a proportional labor income tax τ to consumers, so that the budget constraint changes to $C = (1-\tau)wN^s + \pi + S$. Using a well-labeled diagram (with consumption C on the y-axis and leisure l on the x-axis), explain how this tax affects the optimal bundle (C, l) for the consumer and decompose the effect into an income and substitution effect.

(c) [10] Instead, suppose (for this part only) that the consumer's health deteriorates so that the consumer's time available reduces from h to h_1. Assume that before this change, the consumer chose to allocate more than h_1 hours to leisure. Using a well-labeled diagram (with consumption C on the y-axis and leisure l on the x-axis), explain how this change affects the optimal bundle for the consumer (C, l). (Correction: the last sentence used to say "tax" rather than "change")

(d) [10] Suppose that preferences for the consumer are described by the following utility function

$$U = \alpha \log(C) + \beta \log(l),$$

with $\alpha > 0$ and $\beta > 0$. State the consumer's problem and the corresponding Lagrangian, and solve for the optimal consumer bundle (C, l). How does the optimal consumer bundle change if the consumer values leisure more (β increases)?

3. (40 points) Consider the closed-economy one-period macroeconomic model developed in Chapter 5. Consumers maximize utility subject to the budget constraint: $C = wN^s + \pi - T$ (where $\pi > T$) and time constraint $h = N^s + l$. The firm maximizes profits π by choosing labour N^d to produce output $Y = zF(K, N^d)$. Profit is $\pi = Y - wN_d$. Suppose that government spending G is financed by the lump-sum tax T on consumers.

(a) [10] Throughout question 3, suppose that the production function $F(K, N^d)$ is such that $Y = zK^{\alpha}(N^d)^{1-\alpha}$, with $0 < \alpha < 1$. Derive the optimal labor demand by the firm, and the corresponding optimal profits. Draw the labor demand curve in a well-labeled diagram with real wage w on the y-axis and labor demand N^d on the x-axis. Using your expression for the optimal labor demand, show in your diagram what happens to the labour demand curve if a fire destroys part of the capital stock (K decreases).

(b) [10] For the rest of question, 3, suppose that consumers do not value leisure: the utility function only depends on C and not on l. Solve for the optimal consumption bundle (C, l) using a well-labeled diagram (with consumption C on the y-axis and leisure l on the x-axis). State the expression for the labor supply curve, and draw the labor supply curve in a well-labeled diagram with real wage w on the y-axis and labor supply N^s on the x-axis.

(c) [10] Rigorously define the competitive equilibrium. That is, state the exogenous variables, endogenous variables, and all conditions that need to be satisfied in the competitive equilibrium for this economy. Using your results from questions 3a and 3b, determine the equilibrium level of taxes, wages, consumption, labor, and leisure in this economy (as a function of exogenous variables and parameters).

(d) [5] State the first fundamental theorem of welfare economics, and describe at least 3 distinct situations under which this theorem would not hold. *Hint: we discussed 4 of these situations in class.*

(e) [5] State the social planner's problem. Explain whether or not the competitive equilibrium in this economy is Pareto Optimal. *Hint: you do not need to solve the social planner's problem explicitly to answer this question.*

End of examination
Total pages: 3
Total marks: 100