

# Supplemental Material

*CBE—Life Sciences Education*

Cash *et al.*

## **Instructor Survey script**

You are invited to take part in a research study looking at the class dynamics in the College of Biological Sciences (CBS) at the University of Guelph. (*Note: Intentionally vague*)

**ELIGIBILITY** To be eligible to participate in the study, you must be an instructor in the College of Biological Sciences at the University of Guelph.

**PARTICIPATION** This online survey is expected to take 10-15 minutes to complete. Participation is completely voluntary and you may skip any question you would prefer not to answer. **You may also withdraw your consent** to participate at any time without any repercussions up to the point of submission. After which, your data cannot be withdrawn due to the anonymous nature of the survey. Partially completed surveys will be automatically discarded after a week. (*\*Note: This is the only timeframe Qualtrics allows\**)

Please note that it will not affect the student researcher's grade if you decide not to participate or withdraw part-way through the study.

**RISKS** There are no foreseeable risks of harm in completing this survey.

**BENEFITS** While there is no direct benefit to you, your participation may help improve the student learning experience at the University of Guelph.

**INCENTIVE** By participating in this study, you will be given an opportunity to win one of five \$10 Hospitality Services Gift Cards. If you choose to enter the draw, an e-mail address will need to be provided but this personal information will not be attached to your survey responses. Estimated odds of winning are 1 in 487. Actual odds depend on the number of participants.

**CONFIDENTIALITY** Your confidentiality is highly valued. As such, no identifiable information such as your name and IP address will be collected during the survey. Please note that confidentiality cannot be guaranteed while data are in transit over the internet. As well, due to the relatively small sample size, your confidentiality can not be guaranteed. Your responses will be stored in a password-protected electronic format in a secure office and will only be viewed by the 4<sup>th</sup> year research student and the two faculty advisors. Collected data will be kept for 5 years and may be used to facilitate future studies.

The results of this study will be presented as part of a poster presentation on March 31, 2015 between 1-3 pm (location – to be determined) and the researchers will undertake to publish the results in a peer-reviewed journal. If the results of the study are published, no identifiable information will be released or published without your specific consent of disclosure.

## QUESTIONS

If you have any questions about the project, you can contact the research team:

Jessa Letargo, 4<sup>th</sup> Year Research Student, Interdisciplinary Program,  
[jletargo@mail.uoguelph.ca](mailto:jletargo@mail.uoguelph.ca)

Steffen Graether, Associate Professor, Department of Molecular and Cellular Biology,  
[graether@uoguelph.ca](mailto:graether@uoguelph.ca), ext. 56457

Shoshanah Jacobs, Assistant Professor, Department of Integrative Biology,  
[sjacob04@uoguelph.ca](mailto:sjacob04@uoguelph.ca), ext. 58096

Please address any questions about ethical concerns and your rights as a research participant to:

S. Auld  
Director, Research Ethics  
[reb@uoguelph.ca](mailto:reb@uoguelph.ca)  
519-824-4120 ext.56606

---

**ELECTRONIC CONSENT:** You are encouraged to print a copy of this consent form for your own records. By clicking on the “I Consent” button, you are indicating that: 1. You have read the above information 2. You voluntarily agree to participate

- I Consent (1)
- I Do Not Consent (2)

If I Do Not Consent Is Selected, Then Skip To Thank You for your Interest! We ...

Q2 Do you identify as:

- Male (1)
- Female (2)
- Other: (3) \_\_\_\_\_

Q3 Please indicate your Main Field of Teaching

- Biochemistry (1)
- Biodiversity (2)
- Biological Science (3)
- Biomedical Science (4)
- Human Kinetics (5)
- Marine and Freshwater Biology (6)
- Microbiology (7)
- Molecular Biology and Genetics (8)
- Nutritional and Nutraceutical Sciences (9)
- Plant Science (10)
- Toxicology (11)
- Wildlife Biology and Conservation (12)
- Zoology (13)
- Other: (14) \_\_\_\_\_

Q4 How long have you been teaching at the undergraduate level? Please select 1 if teaching experience is less than or equals a year.

\_\_\_\_\_ Number of Years (1)

Q5 Please indicate if you have taught or are currently teaching a large, medium-size and/or small class at the undergraduate level.

	-	
	Yes (1)	No (2)
Large Class (1)	<input type="radio"/>	<input type="radio"/>
Medium-Sized Class (2)	<input type="radio"/>	<input type="radio"/>
Small Class (3)	<input type="radio"/>	<input type="radio"/>

Q6 What do you consider to be a large, medium-size and small university class? Please enter a range of numbers. (ie. minimum number - maximum number)

	Minimum (1)	Maximum (2)
Large Class (1)		
Medium-Size Class (2)		
Small Class (3)		

Q9 Aside from the number of students, how would you characterize a large class?

Q10 Aside from the number of students, how would you characterize a medium-size class?

Q11 Aside from the number of students, how would you characterize a small class?

Q12 Do you think class size affects the quality of learning?

Yes (1)

No (2)

Answer If Do you think class size affects the quality of learning? Yes Is Selected

Q13 Please explain how class size affects the quality of student learning.

Answer If Do you think class size affects the quality of learning? No Is Selected

Q14 Why do you think class size does not affect the quality of student learning.

Q15 Please indicate if the following statements apply to the following class sizes. Check all that apply.

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	I do not identify with this statement (4)
I enjoy teaching (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I encourage class participation (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am disrupted by students' noise while teaching (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel disconnected from my students (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I incorporate active learning in my classes (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My students are not engaged in my classes (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My students ask and answer questions in class (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My students perform well in class (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I actively seek student feedback in class (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q16 Do your office hours change with class size?

- Yes (1)
- No (2)

Answer If Do your office hours change with class size? Yes Is Selected

Q17 Do you offer more or less office hours to your large classes?

- More (1)
- The Same (2)
- Less (3)

Q18 Does your teaching style change with class size?

- Yes (1)
- No (2)

Answer If Does your teaching style change with class size? Yes Is Selected

Q19 If yes, in what way does it change? Please explain.

Q20 Please indicate what teaching methods you use in the following class sizes. Check all that apply.

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	This is/was not used in my classes. (4)
Lecture Only (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Class Discussion (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Class Demonstration (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student Group Activity (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q21 Please indicate if the following evaluation methods have been used in the following class sizes.

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	This is/was not used in my classes. (4)
Labs (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seminars/Tutorials (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular Quizzes (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Written Evaluations (e.g. Essays) (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group Project (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oral Presentation (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in Courselink Discussion (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Midterm (9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final Examination (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others: (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Q22 Has there ever been a time when a numerically large class felt small? Please explain.

Q23 End of Survey

Thank you for your participation! We truly value the information you have provided. Your responses will help us further understand the various dynamics that define class sizes in the College of Biological Sciences at the University of Guelph. If you would like to enter a draw for a chance to win a \$10 Hospitality Services Gift Card, please click on the link below.

<Click for a chance to win 1 of 5 \$10 Hospitality Services Gift Card>

Q24 Thank You for your Interest! We hope that you would reconsider participating in the survey at a later time.

## **Student survey script**

You are invited to take part in a research study looking at the class dynamics in the College of Biological Sciences (CBS) at the University of Guelph. (*Note: Intentionally vague*)

**ELIGIBILITY** To be eligible to participate in the study, you must be a CBS major in second year or above.

**PARTICIPATION** This online survey is expected to take 10-15 minutes to complete. Participation is completely voluntary and you may skip any question you would prefer not to answer. **You may also withdraw your consent** to participate at any time without any repercussions up to the point of submission. After which, your data cannot be withdrawn due to the anonymous nature of the survey. Partially completed surveys will be automatically discarded after a week. (*\*Note: This is the only timeframe Qualtrics allows\**)

Please note that it will not affect the student researcher's grade if you decide not to participate or withdraw part-way through the study

**RISKS** There are no foreseeable risks of harm in completing this survey.

**BENEFITS** While there is no direct benefit to you, your participation may help improve the student learning experience at the University of Guelph.

**INCENTIVE** By participating in this study, you will be given an opportunity to win one of five \$10 Hospitality Services Gift Cards. If you choose to enter the draw, an e-mail address will need to be provided but this personal information will not be attached to your survey responses. Estimated odds of winning are 1 in 487. Actual odds depend on the number of participants.

**CONFIDENTIALITY** Your confidentiality is highly valued. As such, no identifiable information such as your name and IP address will be collected during the survey. Please note that confidentiality cannot be guaranteed while data are in transit over the internet. As well, due to the relatively small sample size, your confidentiality can not be guaranteed. Your responses will be stored in a password-protected electronic format in a secure office and will only be viewed by the 4<sup>th</sup> year research student and the two faculty advisors. Collected data will be kept for 5 years and may be used to facilitate future studies.

The results of this study will be presented as part of a poster presentation on March 31, 2015 between 1-3 pm (location – to be determined) and the researchers will undertake to publish the results in a peer-reviewed journal. If the results of the study are published, no identifiable information will be released or published without your specific consent of disclosure.

## QUESTIONS

If you have any questions about the project, you can contact the research team:

Jessa Letargo, 4<sup>th</sup> Year Research Student, Interdisciplinary Program,  
[jletargo@mail.uoguelph.ca](mailto:jletargo@mail.uoguelph.ca)

Steffen Graether, Associate Professor, Department of Molecular and Cellular Biology,  
[graether@uoguelph.ca](mailto:graether@uoguelph.ca), ext. 56457

Shoshanah Jacobs, Assistant Professor, Department of Integrative Biology,  
[sjacob04@uoguelph.ca](mailto:sjacob04@uoguelph.ca), ext. 58096

Please address any questions about ethical concerns and your rights as a research participant to:

S. Auld  
Director, Research Ethics  
[reb@uoguelph.ca](mailto:reb@uoguelph.ca)  
519-824-4120 ext. 56606

---

**ELECTRONIC CONSENT:** You are encouraged to print a copy of this consent form for your own records. By clicking on the “I Consent” button, you are indicating that:

1. You have read the above information
2. You voluntarily agree to participate

- I Consent (1)
- I Do Not Consent (2)

If I Do Not Consent Is Selected, Then Skip To Thank You for your interest!

Q2 Do you identify as:

- Male (1)
- Female (2)
- Other: (3) \_\_\_\_\_

Q3 Please indicate your age below

- less than 18 years old (1)
- 18 years old (2)
- 19 years old (3)
- 20 years old (4)
- 21 years old (5)
- 22 years old (6)
- 23 years old (7)
- more than 23 years old (8)

Q4 Are you taking 3 or more courses this semester?

- Yes (1)
- No (2)

Q5 What is your current semester level?

- Semester 1-2 (1)
- Semester 3-4 (2)
- Semester 5-6 (3)
- Semester 7-8 (4)
- More than 8 Semesters (5)

Q6 Please indicate your current major of study

- B.Sc. Biochemistry (1)
- B.Sc. Biodiversity (2)
- B.Sc. Biological Science (3)
- B.Sc. Biomedical Science (4)
- B.Sc. Human Kinetics (5)
- B.Sc. Marine and Freshwater Biology (6)
- B.Sc. Microbiology (7)
- B.Sc. Molecular Biology and Genetics (8)
- B.Sc. Nutritional and Nutraceutical Sciences (9)
- B.Sc. Plant Science (10)
- B.Sc. Toxicology (11)
- B.Sc. Wildlife Biology and Conservation (12)
- B.Sc. Zoology (13)
- Other: (14) \_\_\_\_\_

Q7 What is your current cumulative GPA?

- Greater or Equal to 90% (1)
- 80-89% (2)
- 70-79% (3)
- 60-69% (4)
- Less than 60% (5)

The demographic data and responses are linked together for analytical purposes.

Q8 Have you been or are currently enrolled in a large, medium-size and small class?

	-	
	Yes (1)	No (2)
Large Class (1)	<input type="radio"/>	<input type="radio"/>
Medium-Size Class (2)	<input type="radio"/>	<input type="radio"/>
Small Class (3)	<input type="radio"/>	<input type="radio"/>

Q9 What do you consider to be a large, medium-size and small university class? Please enter a range of numbers. (ie. minimum number - maximum number)

	Minimum Number (1)	Maximum Number (2)
Large Class (1)		
Medium-Size Class (2)		
Small Class (3)		

Q12 Aside from the number of students, how would you characterize a large class?

Q13 Aside from the number of students, how would you characterize a medium-size class?

Q14 Aside from the number of students, how would you characterize a small class?

Q15 Do you think class size affects the quality of learning?

- Yes (1)
- No (2)

Answer If Do you think class size affects the quality of learning? Yes Is Selected

Q16 What factors do you think assist and/or hinder your learning in large classes?

Q17 Please take a moment to think of your favourite (or least hated) university class. Putting the course content aside, what made you really like this class? Please indicate the course code or name if possible.

Q18 Please indicate if the following statements apply to the following class sizes. Check all that apply.

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	I do not identify with this statement. (4)
I do not feel engaged in my classes (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel a sense of belonging in my classes (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am encouraged to think critically in my classes (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am often disrupted by other students in my classes (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My professors are approachable (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My professors care about my academic success (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My professors encourage class participation (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My professors are creative with their teaching style (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My TAs are approachable (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My evaluations are fair (9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q19 Please indicate if the following teaching styles have been used in the following class sizes. Check all that apply.

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	This is/was not used in my classes (4)
Lecture Only (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lecture and Class Discussion (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lecture and Class Demonstration (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lecture and Student Group Activity (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others: (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q20 Please indicate if the following evaluation methods have been used in the following class sizes. Check all that apply

	Small Class (1)	Medium-Size Class (2)	Large Class (3)	This is/was not used in my classes (4)
Labs (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seminars/Tutorials (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quizzes (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Written Evaluations (e.g. Essays) (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group Project (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oral Presentation (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in CourseLink Discussion (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Midterm (9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final Examination (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others: (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Q21 Has there ever been a time when a numerically large class felt small? Please explain.

Q22 End of Survey

Thank you for your participation! We truly value the information you have provided. Your responses will help us further understand the various dynamics that define class sizes in the College of Biological Sciences at the University of Guelph. If you would like to enter a draw for a chance to win a \$10 Hospitality Services Gift Card, please click on the link below.

<Click for a chance to win 1 of 5 \$10 Hospitality Services Gift Card>

Q23 Thank You for your Interest! We hope that you would reconsider participating in the survey at a later time.

**Supplementary Data Table S1.** Complete dataset of quantified resources and structural components of 171 offerings of 40 unique courses in the Department of Molecular and Cellular Biology at the University of Guelph (2010-2014 excluding summer semesters). Not all variables included in this table were included in the principal components analysis, as indicated by asterisks (\*).

Class Size Category*	Course Code*	Semester Offered**	Student Enrollment*	Number of Instructors	Number of Teaching Assistants	Type of Office Hours	Instructional Method	Number of assignments	Variety
Large	BIOC 2580	W12	412	2	4.5	Open	Lecture and lab	4	3
Large	BIOC 2580	W14	423	2	5.5	Open	Lecture and lab	4	3
Large	BIOC 2580	W11	434	2	4	Open	Lecture and lab	4	3
Large	BIOC 2580	W13	468	2	5.5	Open	Lecture and lab	4	3
Large	BIOC 2580	F10	946	2	13	Open	Lecture and lab	4	3
Large	BIOC 2580	F11	1022	2	11	Open	Lecture and lab	4	3
Large	BIOC 2580	F13	1111	2	12	Open	Lecture and lab	8	3
Large	BIOC 2580	F12	1166	2	12	Open	Lecture and lab	4	3
Large	BIOC 3560	F13	234	2	1.5	Open	Lecture only	2	1
Large	BIOC 3560	F12	240	2	1.5	Open	Lecture only	2	1
Large	BIOC 3560	F11	263	2	1.5	Open	Lecture only	2	1
Large	BIOC 3560	F10	265	2	1.5	Open	Lecture only	2	1
Large	BIOC 3560	W14	519	2	2.5	Open	Lecture only	2	1
Large	BIOC 3560	W12	569	2	2.5	Open	Lecture only	2	1
Large	BIOC 3560	W13	573	2	2.5	Open	Lecture only	2	1
Large	BIOC 3560	W11	578	2	2.5	Open	Lecture only	2	1
Small	BIOC 3570	F11	35	1	0.5	By appointment	Lecture and lab	14	4
Small	BIOC 3570	F10	36	1	1	By appointment	Lecture and lab	14	4
Small	BIOC 3570	F12	41	1	1	By appointment	Lecture and lab	15	5
Medium	BIOC 3570	F13	50	1	1.5	Open	Lecture and lab	15	5
Small	BIOC 4540	W13	30	1	1	Open	Lecture and lab	4	3
Small	BIOC 4540	W11	35	1	0.5	Open	Lecture and lab	3	2
Small	BIOC 4540	W14	39	1	1	Open	Lecture and lab	4	3
Medium	BIOC 4540	W12	54	1	1	Open	Lecture and lab	3	2
Medium	BIOC 4580	W14	76	1	0.5	Open	Lecture only	4	2
Medium	BIOC 4580	W11	83	1	0.5	Open	Lecture only	4	2
Medium	BIOC 4580	W13	91	1	0.5	Open	Lecture only	4	2
Medium	BIOC 4580	W12	103	1	0.5	Open	Lecture only	4	2
Small	BIOC4520	F12	45	1	0	Open	Lecture only	5	3
Small	BIOC4520	F10	46	1	0	Open	Lecture only	5	3
Small	BIOC4520	F13	49	1	0	Open	Lecture only	5	3

Medium	BIOC4520	F11	77	1	0	Open	Lecture only	5	3
Large	BIOL 1090	F10	283	2.5	3	Not listed	Lecture and seminar	10	5
Large	BIOL 1090	F11	540	2.5	5	Open	Lecture and seminar	10	5
Large	BIOL 1090	F13	894	2.5	10	Open	Lecture and seminar	10	5
Large	BIOL 1090	W14	915	2.5	10	Open	Lecture and seminar	10	5
Large	BIOL 1090	F12	926	2.5	10	Open	Lecture and seminar	10	5
Large	BIOL 1090	W13	962	2.5	10	Open	Lecture and seminar	10	5
Large	BIOL 1090	W11	975	2.5	9	Open	Lecture and seminar	10	5
Large	BIOL 1090	W12	1481	2.5	14	Open	Lecture and seminar	10	5
Medium	BOT 2100	F10	66	2	1.5	Not listed	Lecture and lab	4	3
Medium	BOT 2100	W14	68	1	2	Not listed	Lecture and lab	4	3
Medium	BOT 2100	W12	77	1	2	Not listed	Lecture and lab	4	3
Medium	BOT 2100	F12	79	1	2	Not listed	Lecture and lab	4	3
Medium	BOT 2100	F11	82	1	2	Not listed	Lecture and lab	4	3
Medium	BOT 2100	W13	82	1	2	Not listed	Lecture and lab	4	3
Medium	BOT 2100	W11	84	2	1.5	Not listed	Lecture and lab	4	3
Medium	BOT 2100	F13	88	1	2	Not listed	Lecture and lab	4	3
Small	BOT 3310	W12	49	1	1	Open	Lecture and lab	4	3
Medium	BOT 3310	W14	53	1	1	Open	Lecture and lab	4	3
Medium	BOT 3310	W11	55	2	1	Open	Lecture and lab	4	3
Medium	BOT 3310	W13	59	2	1	Open	Lecture and lab	4	3
Small	BOT 3410	F12	27	1	0.5	By appointment	Lecture and lab	6	3
Small	BOT 3410	F13	31	1	1	By appointment	Lecture and lab	4	4
Small	BOT 3410	F11	43	1	1	By appointment	Lecture and lab	6	3
Small	BOT 3410	F10	45	1	1	By appointment	Lecture and lab	6	3
Medium	BOT 4380	W11	50	2	0	By appointment	Lecture only	3	2
Medium	BOT 4380	W14	51	2	0	By appointment	Lecture only	3	2
Medium	BOT 4380	W12	52	1	0	By appointment	Lecture only	7	3
Medium	BOT 4380	W13	54	2	0	By appointment	Lecture only	3	2
Large	MBG 2000	W11	268	1	2	By appointment	Lecture and seminar	3	1
Large	MBG 2000	F10	1106	2	6	By appointment	Lecture and seminar	2	1
Medium	MBG 2020	F10	182	2	1.25	By appointment	Lecture and seminar	3	1
Large	MBG 2020	W11	684	2	5.25	By appointment	Lecture and seminar	3	1
Large	MBG 2040	W14	407	2	2.5	Open	Lecture and seminar	3	2
Large	MBG 2040	W12	427	2	2	Not listed	Lecture and seminar	3	2
Large	MBG 2040	W13	469	2	2.5	By appointment	Lecture and seminar	3	2
Large	MBG 2040	F13	1124	2	6	By appointment	Lecture and seminar	3	2

Large	MBG 2040	F12	1176	2	6	Not listed	Lecture and seminar	3	2
Large	MBG 2040	F11	1189	2	6	Not listed	Lecture and seminar	3	2
Medium	MBG 3050	W14	70	1	1	By appointment	Lecture and lab	4	3
Medium	MBG 3050	W12	73	1	1	By appointment	Lecture and lab	4	3
Medium	MBG 3050	W13	76	1	1	By appointment	Lecture and lab	4	3
Medium	MBG 3050	W11	83	1	1.5	By appointment	Lecture and lab	4	3
Medium	MBG 3080	F11	76	2	0	Not listed	Lecture only	5	3
Medium	MBG 3080	F12	87	2	0.5	Open	Lecture only	7	3
Medium	MBG 3080	F13	107	2	0	Not listed	Lecture only	7	3
Medium	MBG 3350	F12	58	1	3	By appointment	Lab methods	12	6
Medium	MBG 3350	F10	72	1	5	By appointment	Lab methods	12	3
Medium	MBG 3350	F13	73	1	4	Open	Lab methods	12	6
Medium	MBG 3350	W12	75	1	3	Open	Lab methods	12	6
Medium	MBG 3350	W11	78	1	4	By appointment	Lab methods	12	4
Medium	MBG 3350	F11	78	1	5	By appointment	Lab methods	12	7
Medium	MBG 3350	W14	85	1	5	Open	Lab methods	12	7
Medium	MBG 3350	W13	94	1	5	Open	Lab methods	12	6
Small	MBG 3660	W11	38	1	0	Not listed	Lecture only	3	2
Medium	MBG 3660	F12	52	1	0	Not listed	Lecture only	3	2
Medium	MBG 3660	W14	55	1	0	Not listed	Lecture only	4	2
Medium	MBG 3660	F11	68	1	0	Not listed	Lecture only	3	2
Small	MBG 4070	F13	29	1	0	Open	Lecture only	3	2
Small	MBG 4070	F12	38	1	0	Open	Lecture only	3	2
Small	MBG 4070	F10	44	1	0.5	Not listed	Lecture only	3	2
Medium	MBG 4070	F11	57	1	0	Open	Lecture only	3	2
Small	MBG 4080	W14	22	1	0	Open	Lecture only	5	5
Small	MBG 4080	W11	23	1	0	Open	Lecture only	4	3
Small	MBG 4080	W13	27	1	0	Open	Lecture only	5	5
Small	MBG 4080	W12	29	1	0	Open	Lecture only	5	3
Medium	MBG 4080	F10	51	1	0	Not listed	Lecture only	3	2
Medium	MBG 4080	F12	68	1	0.5	Not listed	Lecture only	4	2
Medium	MBG 4080	F11	76	1	0.5	Not listed	Lecture only	3	2
Medium	MBG 4080	F13	80	1	0.5	Not listed	Lecture only	4	2
Small	MBG 4110	F13	36	1	0	Not listed	Lecture only	8	3
Small	MBG 4110	F12	41	1	0	Not listed	Lecture only	9	3
Medium	MBG 4110	F11	51	1	0	Not listed	Lecture only	3	3
Medium	MBG 4110	F10	56	1	0	Not listed	Lecture only	3	2

Small	MBG 4240	W11	40	1	0	Open	Lecture only	5	3
Medium	MBG 4240	W13	50	1	0	Open	Lecture only	4	3
Medium	MBG 4240	W14	50	1	0	Open	Lecture only	4	3
Medium	MBG 4240	W12	59	1	0.5	Open	Lecture only	4	3
Small	MBG 4270	W13	35	1	0	Not listed	Lecture only	3	2
Medium	MBG 4270	W11	59	1	0	Not listed	Lecture only	4	3
Medium	MBG 4270	W12	71	1	0	Not listed	Lecture only	3	2
Medium	MCB 2050	F12	101	2	1	Not listed	Lecture and seminar	3	8
Medium	MCB 2050	F13	170	2	1.5	Not listed	Lecture and seminar	3	8
Large	MCB 2050	W12	615	2	4	Not listed	Lecture and seminar	3	8
Large	MCB 2050	W13	751	2	4	Not listed	Lecture and seminar	3	8
Large	MCB 2050	W14	772	2	4.5	Not listed	Lecture and seminar	3	8
Medium	MCB 4010	W13	70	1	0.5	Not listed	Lecture only	4	3
Medium	MCB 4010	W14	71	1	0.5	By appointment	Lecture only	4	3
Medium	MCB 4010	W11	77	1	0.5	Not listed	Lecture only	4	3
Medium	MCB 4010	W12	83	1	0.5	Not listed	Lecture only	4	3
Small	MCB 4050	F13	37	1	0	By appointment	Lecture only	3	2
Small	MCB 4050	F10	42	1	0	By appointment	Lecture only	3	2
Medium	MCB 4050	F12	68	1	0	By appointment	Lecture only	3	2
Medium	MCB 4050	F11	78	1	0.5	By appointment	Lecture only	3	2
Medium	MICR 2420	W12	185	1.5	2	By appointment	Lecture and lab	4	3
Medium	MICR 2420	W14	186	1.5	2	By appointment	Lecture and lab	4	3
Medium	MICR 2420	W13	190	1.5	2	By appointment	Lecture and lab	4	3
Medium	MICR 2420	F11	224	2.5	3	By appointment	Lecture and lab	4	3
Large	MICR 2420	F12	270	2.5	3.5	By appointment	Lecture and lab	4	2
Large	MICR 2420	F13	274	1.5	3	By appointment	Lecture and lab	5	3
Small	MICR 2430	F12	41	1	1.5	By appointment	Lab methods	43	8
Small	MICR 2430	F13	48	1	1.5	By appointment	Lab methods	31	8
Medium	MICR 2430	W12	93	1	2.5	By appointment	Lab methods	6	6
Medium	MICR 2430	W13	114	1	2.5	By appointment	Lab methods	40	7
Medium	MICR 2430	W14	123	1	3	By appointment	Lab methods	37	7
Small	MICR 3090	F12	21	1	1	Not listed	Lecture and lab	4	3
Small	MICR 3090	F13	28	1	1	Not listed	Lecture and lab	3	3
Large	MICR 3230	F12	336	2	0.5	Open	Lecture only	3	2
Large	MICR 3230	F13	375	2	0.5	Open	Lecture only	3	2
Large	MICR 3230	F10	393	2	0.5	Open	Lecture only	2	1
Large	MICR 3230	F11	427	2	0.5	Open	Lecture only	3	2

Small	MICR 3260	W12	28	1	0.5	Not listed	Lecture and seminar	6	4
Small	MICR 3260	W11	29	1	0.5	Not listed	Lecture and seminar	6	4
Small	MICR 3260	W13	45	1	1	Not listed	Lecture and seminar	5	3
Small	MICR 3260	W14	47	1	0.5	Not listed	Lecture and seminar	6	4
Medium	MICR 3330	F13	88	1	0	Open	Lecture only	3	2
Medium	MICR 3330	F10	105	2	0	Not listed	Lecture only	3	2
Medium	MICR 3330	F11	135	1	0	Not listed	Lecture only	3	2
Medium	MICR 3330	F12	137	1	0	Not listed	Lecture only	3	2
Small	MICR 3420	F12	43	1	0	Not listed	Lecture only	5	4
Medium	MICR 3420	F13	54	1	0	Not listed	Lecture only	4	4
Small	MICR 3430	W13	37	1	1	Not listed	Lab methods	4	4
Small	MICR 3430	W14	47	1	1	By appointment	Lab methods	4	4
Small	MICR 4010	W14	25	1	0	By appointment	Lecture only	6	3
Small	MICR 4010	W11	27	1	0	Not listed	Lecture only	5	2
Small	MICR 4010	W13	29	1	0	Not listed	Lecture only	6	3
Small	MICR 4010	W12	37	1	0	Not listed	Lecture only	5	2
Small	MICR 4280	W12	15	1	0	Not listed	Lecture only	4	2
Small	MICR 4280	W14	16	1	0	Open	Lecture only	5	3
Small	MICR 4280	W11	28	1	0	Not listed	Lecture only	4	2
Small	MICR 4280	W13	29	1	0	Not listed	Lecture only	4	3
Small	MICR 4330	W12	21	1	0.5	Not listed	Lecture only	4	3
Small	MICR 4330	W14	22	1	0.5	Not listed	Lecture only	4	3
Small	MICR 4330	W11	23	2	1	Not listed	Lecture only	4	3
Small	MICR 4330	W13	27	1	0.5	Not listed	Lecture only	4	4
Small	MICR 4520	F12	10	2	0	By appointment	Lecture only	3	2
Small	MICR 4520	F13	12	1	0	By appointment	Lecture only	3	2
Medium	MICR 4530	W14	53	2	0.5	Open	Lecture only	3	2
Medium	MICR 4530	W13	59	2	0.5	Open	Lecture only	3	2
Medium	MICR 4530	W12	72	2	0.5	Open	Lecture only	3	2

\* Indicates variables not included in the principal components analysis

\*\* F represents University of Guelph's Fall semester (Sept-Dec); W represents winter semester (Jan-April).