

Economics

Program Requirements

Economics

B.Econ. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 6.5 credits in:	6.5
ECON 1000 [1.0] Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401 [0.5] Elementary Mathematics for Economics I	
ECON 1402 [0.5] Elementary Mathematics for Economics II	
ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5] Intermediate Macroeconomics I	
ECON 2103 [0.5] Intermediate Macroeconomics II	
ECON 2210 [0.5] Introductory Statistics for Economics	
ECON 2220 [0.5] Introductory Econometrics	
ECON 3900 [0.5] Research Methods in Economics	
ECON 3920 [0.5] Professional Practice of Economics	
ECON 4905 [0.5] Honours Capstone Seminar (see Note 1 below)	
2. 2.0 credits in ECON at the 3000 level	2.0
3. 2.0 credits in ECON at the 4000 level	2.0
B. Credits Not Included in the Major CGPA (9.5 credits)	
4. 5.0 credits in electives not in ECON	5.0
5. 4.5 credits in free electives	4.5
Total Credits	20.0

Note: ECON 4908 [1.0] Honours Essay may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B.Econ. Honours with Concentration (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 6.5 credits in:	6.5
ECON 1000 [1.0] Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401 [0.5] Elementary Mathematics for Economics I	
ECON 1402 [0.5] Elementary Mathematics for Economics II	

ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5] Intermediate Macroeconomics I	
ECON 2103 [0.5] Intermediate Macroeconomics II	
ECON 2210 [0.5] Introductory Statistics for Economics	
ECON 2220 [0.5] Introductory Econometrics	
ECON 3900 [0.5] Research Methods in Economics	
ECON 3920 [0.5] Professional Practice of Economics	
ECON 4905 [0.5] Honours Capstone Seminar (see Note 1 below)	
2. One of the concentrations described after the Economics B.Econ. Honours with Concentrations program below, also included in the Major CGPA	4.0
3. 1.0 credit in ECON at the 3000 level	1.0
4. 1.0 credit in ECON at the 4000 level	1.0
B. Credits Not Included in the Major CGPA (7.5 credits)	
5. 4.0 credits in electives not in ECON	4.0
6. 3.5 credits in free electives.	3.5
Total Credits	20.0

Note:

An Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5-credit 4000 level ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay Guidelines maintained by the Department for further details.

Economics

B. Econ. Honours with Concentrations (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. 6.5 credits in:	6.5
ECON 1000 [1.0] Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401 [0.5] Elementary Mathematics for Economics I	
ECON 1402 [0.5] Elementary Mathematics for Economics II	
ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5] Intermediate Macroeconomics I	
ECON 2103 [0.5] Intermediate Macroeconomics II	
ECON 2210 [0.5] Introductory Statistics for Economics	
ECON 2220 [0.5] Introductory Econometrics	
ECON 3900 [0.5] Research Methods in Economics	
ECON 3920 [0.5] Professional Practice of Economics	

ECON 4905 [0.5]	Honours Capstone Seminar (see Note, below)	
2. Two of the concentrations described below, also included in the Major CGPA		8.0
B. Credits Not Included in the Major CGPA (5.5 credits)		
3. 3.0 credits in	electives not in ECON	3.0
4. 2.5 credits in	free electives.	2.5
Total Credits		20.0

Note: an Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5 credit free elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay Guidelines maintained by the Department for further details.

Concentration in Computational Analysis (4.0 credits)

2a. 1.0 credit in:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
(See Note 1 below)		
2b. 2.0 credits in:		2.0
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 1805 [0.5]	Discrete Structures I (see Note 2 below)	
COMP 2804 [0.5]	Discrete Structures II	
2c. 1.0 credit from:		1.0
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 4111 [0.5]	Data Management for Business Intelligence	
COMP 4003 [0.5]	Transaction Processing Systems	
COMP 3803 [0.5]	Introduction to Theory of Computation	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	
COMP 3801 [0.5]	Algorithms for Modern Data Sets	
Total Credits		4.0

Notes:

- For Item 2a of the Concentration in Computational Analysis, COMP 1405 may replace COMP 1005 and COMP 1406 may replace COMP 1006.
- COMP 1805 in the Concentration in Computational Analysis is not required if precluded course MATH 1800 is required by another component of the student's program, such as the Concentration in Mathematics and Quantitative Economics, in which case an additional 0.5 credit in COMP is required from the list of electives in Item 2c.

Concentration in Development (4.0 credits)

2a. 3.0 credits in:		3.0
ECON 3508 [0.5]	Introduction to Economic Development	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 4507 [0.5]	The Economics of Development	
ECON 4508 [0.5]	International Aspects of Economic Development	
PSCI 2102 [0.5]	Comparative Politics of the Global South	
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	
2b. 1.0 credit from:		1.0
ECON 3510 [0.5]	African Economic Development	
ECON 3220 [0.5]	Canadian Economic History	
ECON 3230 [0.5]	Selected Topics in Economic History	
ECON 3808 [0.5]	The Economics of Transition	
ECON 3870 [0.5]	Comparative Economic Systems	
INAF 4102 [0.5]	Special Topics in Development and International Affairs	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South	
PSCI 4409 [0.5]	Issues in Development Management	
	or INAF 4202 [0.5] Issues in Development Management	
Total Credits		4.0

Concentration in Economic Theory (4.0 credits)

2a. 3.0 credits in: Core Theory		3.0
ECON 3001 [0.5]	Mathematical Methods of Economics	
ECON 4001 [0.5]	Mathematical Analysis in Economics	
ECON 4002 [0.5]	Statistical Analysis in Economics	
ECON 4020 [0.5]	Advanced Microeconomic Theory	
ECON 4021 [0.5]	Advanced Macroeconomic Theory	
ECON 4706 [0.5]	Econometrics I	
2b. 1.0 credit in:		1.0
ECON at the 4000 level		
Total Credits		4.0

Concentration in Financial Economics (4.0 credits)

2a. 1.0 credit in:		1.0
BUSI 1001 [0.5]	Principles of Financial Accounting	
BUSI 1002 [0.5]	Management Accounting	
(See Note 1 below)		
2b. 1.5 credits from:		1.5
ECON 3050 [0.5]	Introduction to Financial Economics	
ECON 4051 [0.5]	Financial Asset Pricing	
ECON 4052 [0.5]	Corporate Financial Economics	
or		
BUSI 3500 [0.5]	Applied Corporate Finance	
BUSI 3502 [0.5]	Investments	
BUSI 3512 [0.5]	Derivatives	
(see Note 2, below)		
2c. 1.5 credits from:		1.5

ECON 3602 [0.5]	International Monetary Problems
or ECON 4602 [0.5]	International Monetary Theory and Policy
ECON 3607 [0.5]	Monetary and Financial Institutions
ECON 4053 [0.5]	Financial Market Modeling
ECON 4056 [0.5]	Insurance Economics
ECON 4057 [0.5]	Behavioural Financial Economics
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
BUSI 2504 [0.5] & BUSI 2505 [0.5] and one of: BUSI 4500 [0.5], BUSI 4502 [0.5] (see Note 3, below)	
Total Credits	4.0

Notes

- For Item **2a** of the Concentration in Financial Economics, BUSI 1004 [0.5] may replace BUSI 1001 [0.5] and BUSI 1005 [0.5] may replace BUSI 1002 [0.5].
- For Item **2b** of the Concentration in Financial Economics, students taking BUSI 3500 [0.5], BUSI 3502 [0.5] and BUSI 3512 [0.5] must meet all required prerequisites for these courses as stated in the Undergraduate Calendar description at the time of registration.
- For Item **2c** of the Concentration in Financial Economics, BUSI 2504 [0.5] and BUSI 2505 [0.5] may not count for credit inside the major without also including either BUSI 4500 [0.5] or BUSI 4502 [0.5].

Concentration in International Political Economy (4.0 credits)

2a. 2.0 credits in:	2.0
ECON 4601 [0.5]	International Trade Theory and Policy
ECON 4602 [0.5]	International Monetary Theory and Policy
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 4603 [0.5]	Analysis of International Political Economy
2b. 1.0 credit from:	1.0
ECON 3807 [0.5]	European Economic Integration
or PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3204 [0.5]	Politics of Latin America
or PSCI 3205 [0.5]	Mexican Politics
PSCI 3600 [0.5]	International Institutions
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3802 [0.5]	Globalization and Human Rights
or ANTH 3027 [0.5]	Studies in Globalization and Human Rights
or SOCI 3027 [0.5]	Globalization and Human Rights
2c. 1.0 credit from:	1.0
ECON 4508 [0.5]	International Aspects of Economic Development
INAF 4103 [0.5]	Special Topics in International Political Economy and International Affairs
or PSCI 4604 [0.5]	Selected Problems in International Political Economy

PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
Total Credits	4.0

Concentration in Natural Resources, Environment, and Economy (4.0 credits)

2a. 3.0 credits in:	3.0
ECON 3803 [0.5]	The Economics of Natural Resources
ECON 3804 [0.5]	Environmental Economics
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3022 [0.5]	Environmental and Natural Resources
PSCI 3801 [0.5]	Environmental Politics
2b. 0.5 credit from:	0.5
ECON 4407 [0.5]	Project Evaluation
GEOG 4004 [0.5]	Environmental Impact Assessment
TSES 4001 [0.5]	Technology and Society: Risk
2c. 0.5 credit from:	0.5
ERTH 4303 [0.5]	Resources of the Earth
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
PSCI 4808 [0.5]	Global Environmental Politics
TSES 3002 [0.5]	Energy and Sustainability
Total Credits	4.0

Concentration in Mathematics and Quantitative Economics (4.0 credits)

2a. 1.5 credits in:	1.5
MATH 1800 [0.5]	Introduction to Mathematical Reasoning
MATH 2007 [0.5]	Elementary Calculus II
MATH 2107 [0.5]	Linear Algebra II
(See Note, below)	
2b. 1.0 credit from:	1.0
MATH 2000 [1.0]	Calculus and Introductory Analysis II (Honours)
or	
MATH 2008 [0.5]	Intermediate Calculus
& MATH 3009 [0.5]	Introductory Analysis
2c. 1.0 credit from:	1.0
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)
MATH 3001 [0.5]	Real Analysis I (Honours)
MATH 3107 [0.5]	Linear Algebra III
2d. 0.5 credit from:	0.5
ECON 4004 [0.5]	Operations Research I
or MATH 3801 [0.5]	Linear Programming
ECON 4005 [0.5]	Operations Research II
ECON 4700 [0.5]	Measurement Economics
ECON 4713 [0.5]	Time-Series Econometrics

ECON 4714 [0.5] Advanced Topics in Applied Econometrics

Total Credits 4.0

Notes:

1. Students enrolled in the Concentration in Mathematics and Quantitative Economics must replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements with either (i) MATH 1007 [0.5] and MATH 1107 [0.5], or (ii) MATH 1002.
2. Those who choose option (ii) must also replace MATH 2007 [0.5] and MATH 2107 [0.5] in Item 2a of the concentration requirements with MATH 1102 [1.0].
3. Students who have completed MATH 1004 [0.5] and MATH 1007 [0.5] can replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements.

Economics

B.Econ. Combined Honours (20.0 credits)

Students admitted to the Bachelor of Economics may register for a Combined Bachelor of Economics and any other discipline in which a B.A. Combined program is available.

A. Credits Included in the Economics Major CGPA (7.5 credits)

1. 6.5 credits in: 6.5

ECON 1000 [1.0]	Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401 [0.5]	Elementary Mathematics for Economics I	
ECON 1402 [0.5]	Elementary Mathematics for Economics II	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 2210 [0.5]	Introductory Statistics for Economics	
ECON 2220 [0.5]	Introductory Econometrics	
ECON 3900 [0.5]	Research Methods in Economics	
ECON 3920 [0.5]	Professional Practice of Economics	
ECON 4905 [0.5]	Honours Capstone Seminar (see Note 1 below)	

2. 1.0 credit in ECON at the 3000 or 4000 level 1.0

B. Additional Requirements (12.5 credits) 12.5

3. The requirements for Combined Honours in the other discipline must be satisfied

4. Sufficient credits in free electives to make 20.0 credits for the degree.

Total Credits 20.0

Note: ECON 4908 [1.0] Honours Essay, may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905

requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay stream must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B.A. Honours Combined (20.0 credits)

Students already enrolled in a B.A. discipline may add Economics as an additional discipline under the B.A. Combined Honours. Economics course requirements for the B.A. Combined Honours are the same as those listed under the B.Econ. Combined Honours, above.

Economics

B.Econ. General (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 3.5 credits in: 3.5

ECON 1000 [1.0]	Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401 [0.5]	Elementary Mathematics for Economics I	
ECON 1402 [0.5]	Elementary Mathematics for Economics II	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2210 [0.5]	Introductory Statistics for Economics	

2. 3.5 credits in ECON at the 2000 level or higher 3.5

B. Credits Not Included in the Major CGPA (8.0 credits)

3. 6.0 credits in electives not in ECON 6.0

4. 2.0 credits in free electives. 2.0

Total Credits 15.0

Specialization in International Economic Policy

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINs 1000 [0.5]	Global History	
GINs 1010 [0.5]	International Law and Politics	
GINs 1020 [0.5]	Ethnography, Globalization and Culture	
GINs 2000 [0.5]	Ethics and Globalization	
GINs 2010 [0.5]	Globalization and International Economic Issues	
GINs 2020 [0.5]	Global Literatures	
GINs 3010 [0.5]	Global and International Theory	
GINs 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINs 4090 [0.5]	Honours Seminar in Global and International Studies	

2. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations 1.0

ECON 1000 [1.0]	Introduction to Economics or FYSM 1003 [1.0] Introduction to Economics	
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b. 0.5 credit in Microeconomics 0.5

ECON 2001 [0.5]	Intermediate Microeconomics for Non-Mathematical Majors	
or ECON 2009 [0.5]	Managerial Economics	
or ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
c. 0.5 credit in: Macroeconomics		0.5
ECON 2101 [0.5]	Intermediate Macroeconomics for Non-Mathematical Majors	
or ECON 2102 [0.5]	Intermediate Macroeconomics I	
d. 0.5 credit in: Research Methodologies		0.5
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis	
or ECON 2210 [0.5]	Introductory Statistics for Economics	
e. 2.0 credits in: International and Public Economics		2.0
ECON 3403 [0.5]	Introduction to Public Economics: Expenditures	
ECON 3405 [0.5]	Introduction to Public Economics: Taxation	
ECON 3601 [0.5]	Introduction to International Trade	
ECON 3602 [0.5]	International Monetary Problems	
f. 3.0 credits from: International Economic Policy		3.0
ECON 3370 [0.5]	The Economics of Migration	
ECON 3508 [0.5]	Introduction to Economic Development	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3510 [0.5]	African Economic Development	
ECON 3803 [0.5]	The Economics of Natural Resources	
ECON 3804 [0.5]	Environmental Economics	
ECON 3807 [0.5]	European Economic Integration	
ECON 3808 [0.5]	The Economics of Transition	
ECON 3860 [0.5]	Agricultural Economics	
ECON 3870 [0.5]	Comparative Economic Systems	
Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.		
B. Credits Not Included in the Major CGPA (8.0 credits)		
3. 8.0 credits in: Free Electives		8.0
C. Additional Requirements		
4. The International Experience requirement must be met.		
5. The Language requirement must be met.		
Total Credits		20.0
Stream in International Economic Policy		
B.G.In.S. General (15.0 credits)		
A. Credits Included in the Major CGPA (8.0 credits)		
1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	

GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0
a. Foundations		
ECON 1000 [1.0]	Introduction to Economics	
or FYSM 1003 [1.0]	Introduction to Economics	
b. Microeconomics		
ECON 2001 [0.5]	Intermediate Microeconomics for Non-Mathematical Majors	
or ECON 2009 [0.5]	Managerial Economics	
or ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
c. Macroeconomics		
ECON 2101 [0.5]	Intermediate Macroeconomics for Non-Mathematical Majors	
or ECON 2102 [0.5]	Intermediate Macroeconomics I	
d. Research Methodologies		
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis	
or ECON 2210 [0.5]	Introductory Statistics for Economics	
e. International Economic Policy		
ECON 3403 [0.5]	Introduction to Public Economics: Expenditures	
ECON 3405 [0.5]	Introduction to Public Economics: Taxation	
ECON 3508 [0.5]	Introduction to Economic Development	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3510 [0.5]	African Economic Development	
ECON 3601 [0.5]	Introduction to International Trade	
ECON 3602 [0.5]	International Monetary Problems	
ECON 3803 [0.5]	The Economics of Natural Resources	
ECON 3804 [0.5]	Environmental Economics	
ECON 3807 [0.5]	European Economic Integration	
ECON 3808 [0.5]	The Economics of Transition	
ECON 3860 [0.5]	Agricultural Economics	
ECON 3870 [0.5]	Comparative Economic Systems	
Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.		
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in: Free Electives		7.0
C. Additional Requirements		
4. The Language requirement must be met.		
Total Credits		15.0
Minor in Economics (4.0 credits)		
Open to all undergraduate degree students not pursuing a Major in Economics or the B.G.In.S. Specialization or Stream in International Economic Policy.		
Requirements:		
1. 1.0 credit in:		1.0
ECON 1000 [1.0]	Introduction to Economics	
or FYSM 1003 [1.0]	Introduction to Economics	

2. 0.5 credit in:	0.5
ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors	
or ECON 2009 [0.5] Managerial Economics	
or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	
3. 0.5 credit in:	0.5
ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors	
or ECON 2102 [0.5] Intermediate Macroeconomics I	
4. 2.0 credits from:	2.0
IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis	
ECON at the 2000 level or higher	
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Industrial Economics (4.0 credits)

Open to all B.Eng. students and other undergraduate degree students not pursuing a Major in Economics who have successfully completed ECOR 3800 and SYSC 3200 while registered in a B.Eng. program.

Requirements:

1. 1.0 credit in:	1.0
ECON 1000 [1.0] Introduction to Economics	
2. 0.5 credit in:	0.5
ECON 2009 [0.5] Managerial Economics	
or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	
3. 1.5 credits from:	1.5
ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 3300 [0.5] Public Policy Toward Business	
ECON 3360 [0.5] Introduction to Labour Economics	
ECON 3365 [0.5] Introduction to Industrial Relations	
ECON 3509 [0.5] Development Planning and Project Evaluation	
ECON 3804 [0.5] Environmental Economics	
ECON 3864 [0.5] Transportation Economics	
ECON 4005 [0.5] Operations Research II	
ECON 4020 [0.5] Advanced Microeconomic Theory	
ECON 4301 [0.5] Market Structure and Firm Behaviour	
ECON 4309 [0.5] Applied Industrial Economics	
ECON 4407 [0.5] Project Evaluation	
4. 1.0 credit in:	1.0
ECOR 3800 [0.5] Engineering Economics	
SYSC 3200 [0.5] Industrial Engineering	
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Post-Baccalaureate Diploma in Economics (4.0 credits)

Admission to this program requires the permission of the Department of Economics.

Requirements:

1. 3.0 credits in:	3.0
ECON 4001 [0.5] Mathematical Analysis in Economics	
ECON 4002 [0.5] Statistical Analysis in Economics	
ECON 4020 [0.5] Advanced Microeconomic Theory	
ECON 4021 [0.5] Advanced Macroeconomic Theory	
ECON 4706 [0.5] Econometrics I	
ECON 4990 [0.5] Research and Writing in Economics	
2. 1.0 credit in electives approved by the Department, normally in economics at the 4000 level but may include ESLA 1906 and/or ECON 3001.	1.0
Total Credits	4.0

Economics (ECON) Courses

ECON 1000 [1.0 credit]

Introduction to Economics

An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation, and international economic problems.

Precludes additional credit for ECON 1001, ECON 1002, and FYSM 1003.

Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1001 [0.5 credit]

Introduction to Economics: Microeconomics

The microeconomics half of ECON 1000.

Precludes additional credit for ECON 1000 and FYSM 1003.

Prerequisite(s): normally restricted to students who have obtained transfer credit for the equivalent of the macroeconomics half of ECON 1000.

Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1002 [0.5 credit]

Introduction to Economics: Macroeconomics

The macroeconomics half of ECON 1000.

Precludes additional credit for ECON 1000 and FYSM 1003.

Prerequisite(s): normally restricted to students who have obtained transfer credit for the equivalent of the microeconomics half of ECON 1000.

Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1401 [0.5 credit]**Elementary Mathematics for Economics I**

Functional relations: functional forms and error terms. Graphing economic magnitudes: scatter diagrams, time-series graphs, functional relationships. Applied calculus: mechanics of differentiation and integration, elasticity, consumer/producer surplus. Applied algebra: solving systems of linear equations and Keynesian national-income analysis. Problem solving approaches.

Also listed as MATH 1401.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119.

Prerequisite(s): Ontario Grade-12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401.

Lectures three hours a week, tutorials one hour a week.

ECON 1402 [0.5 credit]**Elementary Mathematics for Economics II**

Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.

Also listed as MATH 1402.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 with a grade of C- or higher.

Lectures three hours a week, tutorials one hour a week.

ECON 2001 [0.5 credit]**Intermediate Microeconomics for Non-Mathematical Majors**

The main topics in microeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their applications. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.I.B., B.Math., or B.Sc. program.

Precludes additional credit for ECON 2002 (no longer offered), ECON 2003 (no longer offered), ECON 2009, ECON 2020, and ECON 2030.

Prerequisite(s): ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2009 [0.5 credit]**Managerial Economics**

An economic analysis of managerial decision-making. Elements of production and cost; price and output determination under perfectly and imperfectly competitive market structures; the role of information; topics in business strategy; and the impact of government intervention. Not open to students in any Economics program.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2020.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher; MATH 1009 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and half hours a week.

ECON 2020 [0.5 credit]**Intermediate Microeconomics I: Producers and Market Structure**

Theory of the firm: elements of production and cost; input allocation, pricing, and firm behaviour under perfectly and imperfectly competitive market structures; the role of information; game theory and public policy, including basic competition policy.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2009.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401 (or equivalent) with a grade of C- or higher; and ECON 1402 (or equivalent), which may be taken concurrently with ECON 2020.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2030 [0.5 credit]**Intermediate Microeconomics II: Consumers and General Equilibrium**

Theory of consumer choice and demand; applications to intertemporal choice, labour supply, and/or choice under uncertainty; welfare analysis; general equilibrium theory; externalities and the role of government.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), and ECON 2003 (no longer offered).

Prerequisite(s): ECON 2020 with a grade of C- or higher or ECON 2009 with a grade of C+ or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2101 [0.5 credit]**Intermediate Macroeconomics for Non-Mathematical Majors**

The main topics in macroeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their application. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.Math., or B.Sc. program. Precludes additional credit for ECON 2102 and ECON 2103.

Prerequisite(s): ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2102 [0.5 credit]**Intermediate Macroeconomics I**

An introduction to the macroeconomic modeling of output in the short and long run, and to fixed-price models of the closed and open economy over the business cycle. Policy prescriptions in relation to the business cycle are analysed.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401 (or equivalent) with a grade of C- or higher; and ECON 1402 (or equivalent), which may be taken concurrently with ECON 2102.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2103 [0.5 credit]**Intermediate Macroeconomics II**

An extension of macroeconomic modeling to the dynamics of wage-price adjustment in the intermediate and long run, to the theoretical foundations of basic macroeconomic relationships, and to contemporary policy issues arising in relation to the business cycle and long-run growth.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 2102 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2210 [0.5 credit]**Introductory Statistics for Economics**

Basic statistical methods for the study of economics. Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.

Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): ECON 1401 (or equivalent) with a grade of C- or higher; ECON 1402 (or equivalent), which may be taken concurrently with ECON 2210.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2220 [0.5 credit]**Introductory Econometrics**

Topics include correlation, simple and multiple linear regression, and an introduction to statistical computing using an econometrics package. Emphasis on understanding appropriate methods and their properties, as distinct from their formal theoretical development. Empirical applications.

Precludes additional credit for ECON 2200 (no longer offered), ECON 2202 (no longer offered), STAT 2509, and STAT 2607.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3001 [0.5 credit]**Mathematical Methods of Economics**

Constrained optimization via Lagrange and Kuhn-Tucker conditions; implicit functions and implicit differentiation; comparative static methods applied to models such as utility maximization and least-cost production; homogeneous functions; concave and convex functions; compounding and exponential functions; economic models involving integration; differential equations.

Precludes additional credit for ECON 2400 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher; and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3050 [0.5 credit]**Introduction to Financial Economics**

The major theories and basic tools used to address modern financial economic issues. Topics may include time value of money, bond and stock valuation, investment criteria, capital budgeting, the risk-return tradeoff, options and option valuation, cost of capital, and the fundamentals of international corporate finance.

Precludes additional credit for BUSI 2504, ECON 2504 (no longer offered), BUSI 2505, ECON 2505 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher, ECON 1402 (or equivalent) with a grade of C- or higher, and BUSI 1002 or BUSI 1005 with a grade of C- or higher.

Lectures three hours a week.

ECON 3201 [0.5 credit]**Economic Thought and Policy in Canada**

An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.

Precludes additional credit for ECON 3404 (no longer offered).

Prerequisite(s): an introductory course in one of the social sciences or Canadian history.

Lectures three hours a week.

ECON 3220 [0.5 credit]**Canadian Economic History**

A survey of Canadian economic history from the sixteenth century to the present.

Also listed as HIST 3220.

Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3230 [0.5 credit]**Selected Topics in Economic History**

An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year.

Also listed as HIST 3230.

Precludes additional credit for ECON 3005 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3300 [0.5 credit]**Public Policy Toward Business**

The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation, and public enterprise.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3360 [0.5 credit]**Introduction to Labour Economics**

Basic principles of labour economics including market, institutional, and sociological forces. Technology and labour demand, wage systems, human capital, internal wage structure, market discrimination, female labour-force entry, wage-price spiral, household labour supply, and wage determination. Preclusion: credit will not be given if taken concurrently with or after ECON 4305 (no longer offered) or ECON 4306 (no longer offered) or ECON 4360. Precludes additional credit for ECON 3506 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3365 [0.5 credit]**Introduction to Industrial Relations**

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada, and Canadian public policy in industrial relations. Preclusion: credit will not be given if taken concurrently with or after ECON 4365 or ECON 4605 (no longer offered).

Precludes additional credit for BUSI 3107 (no longer offered) and ECON 3507 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3370 [0.5 credit]**The Economics of Migration**

An introduction to the economic aspects of migration.

Topics include, among others: the economics of migration within countries; the economics of host country integration of immigrants; the impact of immigration on outcomes in the host country; the impacts of emigration on the home country.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3380 [0.5 credit]**The Economics of Gender and Ethnicity**

The impact of gender and ethnicity on labour-market outcomes. Topics may include: employment, work, earnings, and poverty; discrimination and policy responses; immigration; the economics of the household; gender and development; micro-credit; labour standards. Precludes additional credit for ECON 3100 (no longer offered) and ECON 3810 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3403 [0.5 credit]**Introduction to Public Economics: Expenditures**

The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal politics, techniques of public expenditure analysis, and intergovernmental fiscal relations.

Precludes additional credit for ECON 3003 (no longer offered) and ECON 3408 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4402 (no longer offered) or ECON 4403.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3405 [0.5 credit]**Introduction to Public Economics: Taxation**

The role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal, corporate, sales and wealth taxes, fiscal stabilization policy, and the economics of public debt.

Precludes additional credit for ECON 3003 (no longer offered) and ECON 3407 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4401 (no longer offered) or ECON 4404.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3420 [0.5 credit]**Economic Theories of Federalism**

Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies; decentralization possibilities for fiscal and economic development policies; and consequences of policies such as provincial trade barriers and impediments to factor flows.

Precludes additional credit for ECON 3206 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3450 [0.5 credit]**Political Economy in the Modern State**

An examination of the role of government in the economy, with emphasis on alternate forms of social coordination and the advantages and disadvantages of each form in the Canadian system.

Precludes additional credit for ECON 3305 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3460 [0.5 credit]**Introduction to Health Economics**

Health as an economic good: demand and need; supply and cost. Public health and personal health care.

Alternative health-care delivery systems: financing, performance, quality, and cost effectiveness.

Preclusion: credit will not be given if taken concurrently with or after ECON 4460.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3508 [0.5 credit]**Introduction to Economic Development**

A discussion of the principles of economic development. Application to the problems of the developing countries.

Precludes additional credit for ECON 3603 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4507.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3509 [0.5 credit]**Development Planning and Project Evaluation**

An introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques.

Precludes additional credit for ECON 3604 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3510 [0.5 credit]**African Economic Development**

Domestic and international aspects of development problems and policies in the African context. Topics may include human resource development, growth and poverty reduction, domestic resource mobilization, the implications of ethnic diversity, governance, and institutions, and issues of trade, investment, aid, migration, and health.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3600 [0.5 credit]**Introduction to International Economics**

A discussion of theory and policy in international trade and finance. Intended for students planning to take only 0.5 credit in international economics at the 3000-level.

Preclusion: credit will not be given if taken concurrently with or after ECON 4601 or ECON 4602.

Precludes additional credit for ECON 3601 and ECON 3602.

Prerequisite(s): ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3601 [0.5 credit]**Introduction to International Trade**

An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development. Preclusion: credit will not be given if taken concurrently with or after ECON 4601.

Precludes additional credit for ECON 3600.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3602 [0.5 credit]**International Monetary Problems**

A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.

Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4602.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3607 [0.5 credit]**Monetary and Financial Institutions**

The behaviour of financial intermediaries and institutions such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3706 [0.5 credit]**Applied Econometrics**

Introduction to applied econometric methods with emphasis on the use of the regression model for empirical research. Real-world examples are used extensively to illustrate key concepts. Hands-on computer exercises are an integral part of the course.

Precludes additional credit for ECON 4706.

Prerequisite(s): ECON 1000 or FYSM 1003, ECON 2201 (or equivalent) with a grade of C- or higher, and ECON 2202 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3801 [0.5 credit]**Regional Economics**

Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II and the outlook for the future is evaluated, considering "natural" adjustment mechanisms and policy tools.

Precludes additional credit for ECON 3401 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3803 [0.5 credit]**The Economics of Natural Resources**

The application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed.

Precludes additional credit for ECON 3805 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3804 [0.5 credit]**Environmental Economics**

Microeconomic analysis of environmental issues. Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming.

Precludes additional credit for ECON 3806 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3807 [0.5 credit]**European Economic Integration**

A discussion of the theories of free trade areas and customs, monetary, and economic unions, and the related historical experience of Europe. Topics include: currency area and the euro, coordination of fiscal policy and the EU budget, common agricultural policy, labour mobility, and regional policy.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3808 [0.5 credit]**The Economics of Transition**

The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union, and Asia are compared.

Precludes additional credit for ECON 3700 (no longer offered), ECON 3701 (no longer offered), and ECON 3702 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3820 [0.5 credit]**Topics in Canadian Economic Policy**

Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.

Precludes additional credit for ECON 3800 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3840 [0.5 credit]**An Economic Analysis of Law**

An introduction to the application of economic principles and methodology to a variety of legal problems with emphasis on the theory of property rights and the allocation of resources.

Precludes additional credit for ECON 3204 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3850 [0.5 credit]**Economics of Information and the Media**

An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies. Preclusion: credit will not be given if taken concurrently with or after ECON 4205 (no longer offered) or ECON 4850.

Precludes additional credit for ECON 3200 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3856 [0.5 credit]**Housing Economics**

Examination of housing markets, housing finance, and government housing policy using the tools of microeconomics. Models of demand, supply, and market equilibrium emphasizing the special characteristics of housing, including heterogeneity, durability, and spatial fixity. Relationships to other goods and markets and the wider macroeconomy.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3860 [0.5 credit]**Agricultural Economics**

An examination of the agricultural industry in the national economy and in low-income societies, with emphasis on the working out of the basic forces that determine supply and demand for the industry, and the functional distribution of income among the factors of production.

Precludes additional credit for ECON 3406 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3864 [0.5 credit]**Transportation Economics**

Factors affecting demand for and supply of transportation services; demand elasticities and cost structures of various modes of transport; transportation service pricing. Topics may include transport demand forecasting, transportation investment and project appraisal, and the role of transport in economic development.

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3870 [0.5 credit]**Comparative Economic Systems**

Analysis of the structure, institutions, and performance of alternative economic systems, including capitalism, socialism, and communism. Selected countries are studied as examples of these systems.

Precludes additional credit for ECON 4806 (no longer offered) and ECON 4807 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3880 [0.5 credit]**Special Studies in Economics**

Content may vary from year to year and is announced in advance of the registration period.

Precludes additional credit for ECON 3402 (no longer offered).

Prerequisite(s): ECON 1000 or FYSM 1003.

Lectures and/or seminars three hours a week.

ECON 3900 [0.5 credit]**Research Methods in Economics**

The process of doing basic research in economics: development of the research proposal, finding and critically evaluating relevant literature, model development, methods for locating and collecting economic data, analytical methods, and writing mechanics. This course has a strong practical focus.

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3920 [0.5 credit]**Professional Practice of Economics**

Development of skills used by professional economists, including writing professional documents such as policy briefs and memos, data visualization, communication of economic ideas in non-technical terms, presentation skills, and team-based problem solving.

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3999 [0.0 credit]**Co-operative Work Term**

Graded Sat/Uns.

Prerequisite(s): registration in the Honours Economics or Applied Economics Co-operative Education option, satisfactory completion of the Co-op preparation classes offered by the Co-operative Education Office, and permission of the Department.

ECON 4001 [0.5 credit]**Mathematical Analysis in Economics**

Analysis and algebra: set theory, sequences and series, quadratic forms, separation and fixed-point theorems. Static optimization: the Weierstrass, Lagrange, and Kuhn-Tucker theorems; convexity and quasi-convexity; the envelope theorem. Dynamic optimization: the Maximum Principle and Bellman's equation. Applications of these tools to economic theory.

Prerequisite(s): ECON 3001 with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4002 [0.5 credit]**Statistical Analysis in Economics**

Probability: including conditional probability, random variables and distributions, unconditional and conditional expectations. Distributions: including special distributions and their properties, and sampling distributions of estimators. Nonparametric methods and limit theorems; stochastic processes; simulation and bootstrap methods. Applications of these tools to economic theory. Precludes additional credit for STAT 3500 (no longer offered), STAT 3508, and STAT 3558. Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher. Lectures three hours a week, tutorials one and a half hours a week.

ECON 4004 [0.5 credit]**Operations Research I**

Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied. Precludes additional credit for BUSI 2300 (no longer offered), MATH 3801, and SYSC 3200. Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4005 [0.5 credit]**Operations Research II**

Dynamic programming, inventory models, queuing, simulation, and non-linear programming. Prerequisite(s): ECON 4004 or MATH 3801 or SYSC 3200; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher. Lectures three hours a week.

ECON 4020 [0.5 credit]**Advanced Microeconomic Theory**

Advanced theory of individual economic behaviour in production, consumption, and general equilibrium. Elementary tools of mathematics are employed in the exposition of most topics. Precludes additional credit for ECON 4200 (no longer offered). Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020. Lectures three hours a week, tutorials one and a half hours a week.

ECON 4021 [0.5 credit]**Advanced Macroeconomic Theory**

An introduction to advanced macroeconomic models. Topics may include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms. Precludes additional credit for ECON 4201 (no longer offered). Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4021. Lectures three hours a week, tutorials one and a half hours a week.

ECON 4025 [0.5 credit]**Game Theory and Economics**

Analysis of strategic behaviour using non-cooperative game theory. Topics include extensive-form and strategic-form representation of games, and solution concepts for games of complete and incomplete information such as Nash equilibrium, subgame perfect equilibrium, and perfect Bayesian equilibrium. Economic applications will be presented. Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher or ECON 2002 (no longer offered) and ECON 2003 (no longer offered) each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4025. Lectures three hours a week.

ECON 4026 [0.5 credit]**Macroeconomic Dynamics**

Dynamic models as applied to topics such as economic growth, business cycles, consumption, investment, inflation, and real-financial linkages. Empirical and/or policy issues may also be discussed. Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4026. Lectures three hours a week.

ECON 4030 [0.5 credit]**Economics of Uncertainty and Information**

Uncertainty, imperfect information, and asymmetric information in the allocation of resources and the performance of markets and alternative coordinating mechanisms.

Precludes additional credit for ECON 4006 (no longer offered) and ECON 4260 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4051 [0.5 credit]**Financial Asset Pricing**

Factors that drive security prices and models that attempt to account for aspects of security returns, including the generic arbitrage pricing model, the capital asset pricing model (CAPM), the consumption CAPM, and the intertemporal CAPM.

Precludes additional credit for BUSI 3500, ECON 3500 (no longer offered), BUSI 3502, ECON 3502 (no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4052 [0.5 credit]**Corporate Financial Economics**

Optimization and corporate finance. Corporate governance and managerial compensation. Capital structure and the Modigliani-Miller theorem. Agency theory and asymmetric information. The issue of equity, debt, and other securities. Dividend policy. Investment and capital budgeting, NPV, and real options.

Precludes additional credit for BUSI 3500 (or ECON 3500, no longer offered) and BUSI 3502 (or ECON 3502, no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4053 [0.5 credit]**Financial Market Modeling**

The modeling of the evolution of prices in (near) efficient markets and the evaluation of functions of these prices such as guarantees, options, warrants, futures, and other types of derivatives. Arrow-Debreu state-contingent claims. Notions of complete and incomplete markets.

Precludes additional credit for ECON 4100 (no longer offered) and ECON 4504 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 3001 with a grade of C- or higher.

Lectures three hours a week.

ECON 4056 [0.5 credit]**Insurance Economics**

The theory of insurance founded on probability and decision theory. The optimal design of insurance policies from a risk-sharing and an information economics perspective. Principal-agent problems including adverse selection, asymmetric information, and moral hazard with implications for insurance. The interaction between insurance and other markets.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4057 [0.5 credit]**Behavioural Financial Economics**

Market efficiency and the limits of arbitrage. Heuristics and biases identified by behavioural decision theorists and their effect on the behaviour of managers and investors. Behavioural theories of market trading volume and asset prices. Behavioural approaches to corporate financial economics problems.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 3050 with a grade of C- or higher.

Lectures three hours a week.

ECON 4108 [0.5 credit]**Behavioural Economics**

Major factors underlying economic behaviour, including various views of the role of rationality in economic analyses of individual decision-making and institutional design and a detailed treatment of behavioural heuristics and biases and their implications for nudging techniques that aim to improve economic outcomes.

Prerequisite(s): ECON 2030 with a grade of C- or higher.

Lectures three hours a week.

ECON 4109 [0.5 credit]**Experimental Economics**

An introduction to the use of and insights gained from both laboratory- and field-type experimental methods in economic research. Topics include analysis of individual rationality, performance of markets, and design of economic systems. In-class experiments are an integral part of the course.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 with a grade of C- or higher.

Lectures three hours a week.

ECON 4209 [0.5 credit]**Selected Topics in the History of Economic Thought**

The development of economic thought through time in relation to selected economic problems.

Precludes additional credit for ECON 4105 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher, and ECON 2103 with a grade of C+ or higher.

Also offered at the graduate level, with different requirements, as ECON 5209, for which additional credit is precluded.

Lectures and/or seminars three hours a week.

ECON 4230 [0.5 credit]**Economic History**

The application of economic theory and quantitative techniques to selected topics in economic history, which may include historical patterns of growth and welfare, nineteenth-century globalization, technological change, the development of agriculture, industrialization, the Great Depression, and the origins of central banks.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Also offered at the graduate level, with different requirements, as ECON 5230, for which additional credit is precluded.

Lectures three hours a week.

ECON 4301 [0.5 credit]**Market Structure and Firm Behaviour**

Various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets.

Precludes additional credit for ECON 4300 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4302 [0.5 credit]**Competition and Regulatory Policy**

Public policies relating to competition and regulation.

Topics may include: Ramsey pricing, peak-load pricing, cross-subsidization, access pricing (ECPR), multi-part pricing and price discrimination, predatory and targeted pricing, vertical restrictions, traditional regulation (including rate-of-return regulation), incentive regulation (including price caps), and the political economy of regulation.

Precludes additional credit for ECON 4300 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4309 [0.5 credit]**Applied Industrial Economics**

The empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4360 [0.5 credit]**Labour Economics**

The application of price theory to the labour market. Topics include models of labour supply and labour demand, human capital and the economics of education, and unions and their impact on the labour market.

Precludes additional credit for ECON 4305 (no longer offered) and ECON 4306 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4365 [0.5 credit]**Industrial Relations**

Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market.

Precludes additional credit for ECON 4605 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4403 [0.5 credit]**Public Economics: Expenditures**

A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Examination of current topics such as expenditures and grants in the Canadian federation.

Precludes additional credit for ECON 4402 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4404 [0.5 credit]**Public Economics: Taxation**

A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform, are examined.

Precludes additional credit for ECON 4401 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4407 [0.5 credit]**Project Evaluation**

Techniques and problems in the evaluation of public and private projects. Examination of alternative approaches to public decision-making including cost-benefit analysis, cost-effectiveness analysis, and multiple-objective frameworks. Case studies of projects in various areas such as natural resources, the environment, human resources, public services, and transportation.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4460 [0.5 credit]**Health Economics**

Economic analysis of the organization, financing, and utilization of health-care services. Topics include supply and demand of health care, the impact of private and social health insurance on demand, and policy issues in the provision of health care in Canada.

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4507 [0.5 credit]**The Economics of Development**

An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4508 [0.5 credit]**International Aspects of Economic Development**

An analysis of the international economic policy problems of development in Asia, Africa and Latin America, focusing on international trade, direct foreign investment, technological transfer, regional integration, debt and development financing, and international migration.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4601 [0.5 credit]**International Trade Theory and Policy**

International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4602 [0.5 credit]**International Monetary Theory and Policy**

International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.

Prerequisite(s): ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4670 [0.5 credit]**Monetary Theory and Policy**

The role of money and the monetary system in determining income, employment, and price level; techniques of monetary policy; the relationship between monetary and fiscal policy.

Precludes additional credit for ECON 4607 (no longer offered) and ECON 4608 (no longer offered).

Prerequisite(s): ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4700 [0.5 credit]**Measurement Economics**

National accounting and index numbers. Topics may include: the measurement of output and income, capital and depreciation, productivity, employment and unemployment, poverty and inequality, household production, pollution and resource depletion, and the balance of payments; price indexes; standard-of-living indexes; and international comparisons.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4706 [0.5 credit]**Econometrics I**

An introduction to econometric theory and analysis of the classical normal linear regression model. Topics include estimation methods, hypothesis testing, multicollinearity, indicator variables, heteroscedasticity, and an introduction to time-series methods.

Precludes additional credit for ECON 3706.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4707 [0.5 credit]**Econometrics II**

An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.

Prerequisite(s): ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher.

Lectures three hours a week.

ECON 4713 [0.5 credit]**Time-Series Econometrics**

An introduction to the basic concepts and tools of time-series econometrics. Topics include stationary and non-stationary time series, identification, estimation and forecasting, unit root testing, cointegration analysis, error-correction models and ARCH models, together with relevant economic applications.

Precludes additional credit for ECON 4803 (no longer offered) and STAT 4603.

Prerequisite(s): ECON 4706 with a grade of C- or higher, or STAT 3503 with a grade of C- or higher.

Lectures three hours a week.

ECON 4714 [0.5 credit]**Advanced Topics in Applied Econometrics**

Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.

Precludes additional credit for ECON 4804 (no longer offered).

Prerequisite(s): ECON 4706 with a grade of C+ or higher; and ECON 4707, which may be taken concurrently with ECON 4714.

Lectures three hours a week.

ECON 4800 [0.5 credit]**Spatial Economics**

Spatial dimensions of economic activity and organization. Theories of urban agglomeration effects, transport costs, forward and backward linkages, and associated spatial dynamics; empirical analysis of spatial economic clusters; effects of globalization and economic growth on the spatial structure of production and the associated policy response.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4850 [0.5 credit]**Advanced Economics of Information and Media**

The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, and its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy, and Internet policy.

Precludes additional credit for ECON 4205 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4880 [0.5 credit]**Special Topics in Economics**

Selected advanced topics of interest to upper-year Honours Economics and Applied Economics students. Topics may vary from year to year and are announced in advance of the registration period.

Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; and ECON 3706 or ECON 4706, which may be taken concurrently with ECON 4880 or may be waived by permission of the Department.

Lectures and/or seminars three hours a week.

ECON 4903 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 or ECON 4901 or ECON 4902.

Prerequisite(s): permission of the Department.

ECON 4904 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 or ECON 4901 or ECON 4902.

Prerequisite(s): permission of the Department.

ECON 4905 [0.5 credit]**Honours Capstone Seminar**

The development of individual research projects in suitable economics topic areas with the exchange of results at each stage through in-class discussions and written and oral reports and culminating in a major research paper by each course registrant.

Precludes additional credit for ECON 4890, ECON 4900 (no longer offered), ECON 4901, and ECON 4902.

Prerequisite(s): ECON 3900 with a grade of C+ or higher, ECON 3920 with a grade of C+ or higher, and registration in an Honours Economics program.

Seminars three hours a week.

ECON 4908 [1.0 credit]**Honours Essay**

Students taking Honours in Economics or Applied Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.

Prerequisite(s): permission of the Department.

ECON 4990 [0.5 credit]**Research and Writing in Economics**

Development of fundamental research and writing skills pertinent to the discipline of economics. Writing summary reviews of economics texts of increasing sophistication; writing up empirical and/or theoretical results of increasing complexity.

Prerequisite(s): registration in the Post-Baccalaureate Diploma in Economics program and/or permission of the Department.

Seminars three hours a week, tutorials one and a half hours a week.

Summer session: some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at central.carleton.ca

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at central.carleton.ca