

THE UNIVERSITY OF UTAH DEPARTMENT OF ECONOMICS

Learning Outcomes Assessment Interim Report 2: June 2021



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Executive Summary

This document provides an interim report on programmatic learning outcome assessments in the Department of Economics at the University of Utah. In accordance with regulations, the assessment of programmatic learning outcomes is embedded within a curriculum management plan. This second interim report builds on the first interim report submitted in June of 2019, and documents further progress made in implementing procedures and executing assessments. Both interim reports lay the groundwork for the full report due for Graduate Council Review AY 22/23.

This interim report collects information on the undergraduate major in Economics (BA/BS), the Master's degrees in Economics (MA/MS), and the PhD in Economics. For all of these, mission statement and assessment procedures have been formulated. Assessments have been implemented for the undergraduate degree. A pilot assessment was undertaken in the Fall of 2016 and every semester since, with a major revision of assessment procedures in the Summer of 2017. The department intends to strengthen assessments for graduate programs as well as transcripted emphases before the full report is due.



Overview

This section briefly provides an overview of degrees, transcripted emphases, and certificates that the Department of Economics is administers and/or collaborates on.

Undergraduate

Bachelor of Arts/Bachelor of Science

The undergraduate degrees (BA and BS) and certificates in economics granted by the department provide a comprehensive education in economics in all of its dimensions that leads to productive careers in academia, private business, government, non-governmental organizations, and multilateral institutions. The major in economics is one of the largest at the University of Utah. Undergraduate students are taught a rigorous and pluralist economics curriculum.

<u>Minor</u>

[...]

Emphases and certificates

The department offers two transcripted emphases and participates with other units across the college to support a certificate. All of these efforts are geared towards aiding students in building quantitative research skills and marketable job skills.

- **Statistical Analysis** transcripted emphasis (SAE; administered by Department of Economics): The SAE uses real-world data and statistical software to establish applied econometrics skills. Carry out analysis for local non-profits and other groups then write and present reports on your findings while working with a faculty mentor.
- **Business Economics and Analytics** transcripted emphasis (BEA; administered in collaboration with DESB/Finance & QAMO): This emphasis is Perfect for students who are interested in a mathematical and statistical analysis approach to their economics studies, the BEA offers detailed training in relevant business topics.
- Quantitative Analysis Certificate: This certificate is aimed at providing students a set of skills that will make them valuable in a multitude of contexts where data and evidence-based decisions are made. The skills are based on promoting understanding as to how data can be collected, how to describe and make inferences from data, and expressing the implications of data to other individuals. Students will become competent in three primary areas: skills in implementing statistical analyses, skills in research methodology, and skills in communicating research findings. This certificate is administered by a CSBS committee and draws on courses from across the college.



Graduate

MA/MS

<u>MSTAT</u>

<u>PhD</u>

Graduate Statistics Certificate



Enrollment and degree trends

Data below reports recent data on enrollment and degrees awarded for BA/BS, masters degrees and doctorate degrees. Data were obtained from the Office of Budget and Institutional Analysis (OBIA).

| Headcount | t Enrollment: Sprir | ng 2016-2021 | | | | | | |
|--------------------------------------|---------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|
| Extract: Census | | | | | | | | |
| College: Social & Behavioral Science | | | | | | | | |
| Departme | nt or Program: Ecc | onomics | | | | | | |
| | | | Spring 2017 | Spring 2018 | Spring 2019 | Spring 2020 | Spring 2021 | |
| Undergraduate | Pre-major | | 30 | 29 | 15 | 17 | 32 | |
| | Bachelors | | 434 | 414 | 380 | 360 | 324 | |
| Graduate Masters | | | 33 | 34 | 27 | 20 | 24 | |
| | Doctorate | | 53 | 48 | 43 | 38 | 30 | |
| Total | | | 550 | 525 | 465 | 435 | 410 | |

Table 1: Enrollment trends. Enrollments for pre-majors, bachelors, masters and doctorate students in the Department of Economics. "Pre-majors" have declared their intent to major in Economics, but lack certain prerequisites. "Bachelors" includes all *primary majors*, i.e. only first-declared majors: a double major who first declared, say, political science, is *not* included in this count. "Masters" includes MA/MS and MSTAT students. "Doctorate" includes PhD students.



| Degrees Awarded by Fiscal Year and Career | | | | | | | | | |
|---|----------|-------------------|---------------------------|-------------------|----------|----------|--------|----------|----------|
| 274 O | | | | | 271 O | | | | |
| | 0 231 | 214 O | 205 | 0 0 | | 245 O | 248 | 191 O | 174 O |
| 18 | 20 | 35 0 6 0 | 22 O O 2013-2014 | 33 0 2 0 | | | ٩ ا | 13 O | |

Figure 1: Degrees awarded. This figure summarizes degrees awarded by the Department of Economics. Top line (blue) are BA/BS degrees. Middle line (green) are the sum of MA/MS and MSTAT degrees. Bottom line (red) are PhD graduations.



BA/BS Economics

The undergraduate degrees (BA and BS) and certificates in economics granted by the department provide a comprehensive education in economics in all of its dimensions that leads to productive careers in academia, private business, government, non-governmental organizations, and multilateral institutions. The major in economics is one of the largest at the University of Utah. Undergraduate students are taught a rigorous and pluralist economics curriculum.

The undergraduate curriculum is administered by tenure-line faculty of the department. The director of undergraduate studies works closely with the undergraduate committee, which is composed of the director, three faculty (not all of which need to be tenure-line), and the associate chair and the chair. The committee brings curricular revisions and advances as well as any other administrative matters to tenure-line faculty, which votes on changes. The committee is directly responsible for assessment of learning outcomes and decisions over departmental undergraduate scholarships.

Mission statement

The major in economics prepares you for a successful career in academia, private business, government, non-governmental organizations, and multilateral institutions. The discipline of economics studies societal production and distribution of goods and services. Today, the market mechanism is the dominant form of the provision of goods and services. Legislative bodies regulate markets, and intervene where market failures or recurring crises make that necessary.

As such, economics directly addresses the many political fault lines debated today: How deeply should the national economy be integrated into a global economy? Is continued economic growth sustainable in light of climate change? What is the relationship between global integration and rising income inequality in its many dimensions—households, generations, genders, race/ethnic groups? How can a nation ensure adequate healthcare for its citizens? How has the labor market for college graduates changed in recent decades? What are the economic effects of rising income inequality?

Economists study these questions with theoretical models, empirical methods (statistics, econometrics) as well as historical analyses. At the University of Utah, a major in economics is exposed to all of these methods. Core theory classes, rigorous quantitative requirements and electives in a wide variety of fields prepare students for a large number of careers. As a graduate of our program, students will acquire state-of-the-art knowledge in the discipline. In the process, students will hone skills in critical and analytical thinking and writing.



Programmatic learning outcomes

Note of revisions

- Adopted 2016
- Revised May 2018 to encompass sustainability objectives.

Outcomes

1. Knowledge base:

Students should demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, historical trends, and empirical findings to discuss how economic principles apply to socio-economic problems. Students completing *Principles* courses should demonstrate breadth of their knowledge and application of economic ideas to simple problems; students completing a baccalaureate degree should show depth in their knowledge and application of economic concepts and frameworks to problems of greater complexity.

- 1.1. Describe key concepts, principles, and overarching themes in economics; including those related to departmental research foci on inequality, globalization and/or sustainability.
- 1.2. Differentiate fields and describe relevant applications.
- 1.3. Define and distinguish schools of thought.
- 2. Scientific inquiry, critical thinking and quantitative reasoning:

The skills in this domain involve the development of scientific reasoning and problem solving, including effective research methods. Students completing *Principles* courses should learn basic skills and concepts in describing economic phenomena, evaluating economic policy and critically examining societal interactions; students completing a baccalaureate degree should argue on these matters based on theory, formal models and empirical evidence.

- 2.1. Use scientific reasoning to interpret economic phenomena.
- 2.2. Demonstrate literacy in basic quantitative methods.
- 2.3. Critically evaluate economic theories and their policy implications; including theory and policy related to departmental research foci on inequality, globalization and/or sustainability.
- 3. Communication skills and professional development

Students should demonstrate competence in writing, oral, and interpersonal communication skills. These skills are mainly developed in advanced major courses.



Students completing a baccalaureate degree should demonstrate the ability to write a cogent scientific argument, explain scientific results, and develop these skills at greater depth. These skills refer to abilities that sharpen student readiness for postbaccalaureate employment, graduate school, or professional school.

- 3.1. Demonstrate effective writing for different purposes.
- 3.2. Demonstrate effective presentation design.

Assessment procedures

Note of revisions

- Fall 2017: Switch to eight LOs per semester
- Fall 2019: Switch to four LOs per semester, with flexible rotation to satisfy coverage of all instructor levels and LOs
- *Fall 2021*: Anticipated revision of course selection from focus on core courses plus "Focus Areas" (Econometrics, History, Doctrines) to focus on core courses plus "Tracks" (Macroeconomics & Globalization; Microeconomic Theory & Policy; Inequality & Sustainability; Economic History & History of Thought; Pre-Law)

Procedures

The basic assessment cycle consists of (1) definition of learning outcomes and assessment procedure, (2) execution (collection of artefacts), and (3) analysis and revision. The following list outlines the procedure for the <u>undergraduate major in economics</u>:

1. **Eight LOs in eight classes:**

The department has defined eight *learning outcomes* (LOs), listed above. Each of the eight LOs is assessed once per academic year in a different class, so that eight classes are assessed each academic year.

2. Class selection

Three of the eight classes are chosen from the six core classes, three from focus area courses (one each for Econometrics, Doctrines and History) and two from a subset of 3000-level electives. The specific eight courses and LOs therein to be assessed in any year are selected in this manner by the UG director in consultation with the UG committee (and instructors). The goal is to ensure rotation across courses as well as instructors.

3. The artefacts

The instructor in the assessed course selects an assignment (or exam question) that pertains to the specific LO allocated to her course. The instructor can choose an



assignment or exam at any point throughout the semester. After grading the assignment, the instructor fills out a summary form, and further selects one poor, one average and one excellent student work sample. These four documents are then aggregated into one pdf, which is submitted to the UG director (or uploaded to Canvas).

4. Analysis & revision

The eight submissions (with a total of 24 student work samples) are reviewed and discussed by the UG committee. On the basis of the lessons learned, the UG committee proposes revisions to LOs as well as the assessment procedure for the next cycle.

5. Transcripted emphases

The two transcripted emphases are *Business Economics and Analytics* (BEA) and *Statistical Analysis Emphasis* (SAE). BEA and SAE are completed by majors in economics. BEA requires completion of three specific courses in Economics, SAE requires completion of a sequence of two specific courses. In order to ensure assessment of these transcripted emphasis, the department further adds *one* course from each BEA and SAE per academic year to the roster of eight described above. In line with BEA and SAE focus on quantitative methods, LOs assessed will tend to be (but do not need to be) chosen from section 2 on *Scientific inquiry, critical thinking and quantitative reasoning*.



Assessment form

Learning Outcomes Assessment: Summary Form

Class information:

Class: _____

Instructor: _____

Term: _____

Assessed LO: _____

Assignment information:

Assignment/exam question:

Assignment/exam question grades:

| Average grade | class | Median grade | class | Poor grade | sample | Average sample grade | Excellent sample grade |
|------------------|-------|-----------------|-------|---------------|--------|-------------------------|---------------------------|
| | | | | | | | |

Instructor reflection: What worked well with this assignment? Did students achieve the LO? What did not work well, and what could be improved?

Thank you!!

Box 1: Assessment form.



Assessment sample

The following text was copied from a recent assessment. The course and instructor identifying question is removed. The LO assessed here is 2.1: "Use scientific reasoning to interpret economic phenomena." To delineate this sample, it is formatted in italics.

Assignment/exam question:

Question based on data of the smoking habit of males in 1979 and early 1980 from the Smoking Supplement to the 1979 National Health Interview Survey. (Note: Data summary and regression results are not presented here in the interest of space.) Do the evidence from the correlation table and the regression estimates support the law of demand in terms of price effect? Is the price effect economically significant? Clearly explain how you reached your conclusions.

Assignment/exam question grades:

| , isong i i i i e i i e | , 67.6 | accurrent gre | | | | | |
|-------------------------|--------|---------------|-------|-------|--------|----------------|------------------|
| Average | class | Median | class | Poor | sample | Average sample | Excellent sample |
| grade | | grade | | grade | | grade | grade |
| В | | B+ | | В | | B+ | Α |

Excellent Sample:

According to the law of demand, holding other factors fixed, as the price of a product increases, the quantity demanded will decrease. For this data set, this means that price and quantity of cigarettes should have a negative correlation and variable "lcigprice," representing the log of cigarette price, should have a negative coefficient. The correlation table and the regression estimates align with the own-price effect of law of demand. According to the correlation table, the correlation for cigarettes per day and log of the price of cigarettes in cents is negative at -0.0114. The regression estimate also shows that the coefficient for the natural log of price of cigarettes in terms of cents per pack is negative at -3.159516. This is a level-log relationship so the coefficient is interpreted by: if cigarette prices increase by 1%, the demand for cigarettes will decrease by 0.03159516 cigarette price is -3.159516. Because this is interpreted as increase by 1% for price of cigarettes, it is estimated that the demand for cigarettes will decrease by 0.03159516 cigarette price is incredibly small. Because this effect is extremely small, in my opinion, the price effect is not very economically significant.

Average sample:

The law of demand in terms of price effect means that, assuming all other factors remain constant, an increase in the price of a good will lead to the decrease in the demand for a good and vice versa. In other words, the price of a good and the demand for the good will be negatively correlated. The correlation coefficient between cigs and cigprice is -0.0114, as is shown by the correlation table. This does line up with the law of demand in terms of price effect, as there is a negative correlation between the two variables. The regression analysis for cigs shows that the coefficient of lcigprice is -3.159516, meaning that an increase in cigprice will lead to a ceteris peribus decrease in cigs. This also supports the law of demand in terms of price effect. The coefficient of lcigprice as discussed in part b (-3.1595616) means that a 1 percent increase in the cigprice will lead to a ceteris peribus average decrease in cigs by .031595616; by this, the price effect would not appear to be economically significant given that the mean of cigs is 8.688493.



Poor sample:

The correlation between the demand for cigs and price of cigs according to the correlation table is -0.0114. This negative correlation agrees with the law of demand as the law of demand states an increase in price should lead to a decrease in quantity and vice versa (with all other variables staying constant). The coefficient of lcigpric is -3.16 which also supports the law of demand in terms of price effect. This coefficient of -3.16 means that when the price of a cigarette increases by 1\$; 3.16 less cigarettes would be demanded. Given a sample mean of 8.69 cigarettes, this price effect is economically significant.

<u>Instructor reflection</u>: What worked well with this assignment? Did students achieve the LO? What did not work well, and what could be improved? (Please write about a paragraph.) This assignment required the students to evaluate a fundamental microeconomic theory prediction using real data wherein they had to think carefully about the numeric interpretation as well as economic relevance of the estimated effect. All students achieved the objective of interpreting the correlation and regression estimates qualitatively to evaluate the law of demand. Some students (as demonstrated by the poor sample) did not interpret the magnitude of the estimated effect from the regression correctly as they failed to recognize or correctly compute the level-log format regression estimates.



Assessment overview

Since the pilot assessment in Fall semester of 2016, more than fifty courses have been assessed. Assessment procedures have been substantially revised, complicating comparisons over time. However, since Fall 2019 the procedures have been largely unchanged, so that some statistics below focus on this period.

Each of the learning outcomes is assessed once per academic year. Rotation occurs in the choice of courses, particularly electives, and the assignment of courses to learning outcomes as well as instructor level. The following table summarizes assignments since Fall of 2019:

| | | Fall | 2019 | Spring | 2020 | Fall | 2020 | Spring | 2021 |
|----------------|------|------|------|--------|------|------|------|--------|------|
| Princ Micro | 2010 | | | AST | 2.3 | | | | |
| Princ of Macro | 2020 | FUL | 1.1 | | | GTA | 1.2 | | |
| Math | 3620 | | | GTA | 2.2 | | | | |
| Prob | 3640 | | | | | | | GTA | 2.2 |
| Int Micro | 4010 | FUL | 2.1 | | | | | FUL | 3.1 |
| Int Macro | 4020 | | | ASC | 3.2 | | | | |
| Econometrics | 4650 | | | | | ASC | 2.1 | | |
| Keynes | 5050 | | | | | | | | |
| Doctrines | 5060 | AST | 1.3 | | | | | | |
| Marxian | 5080 | ļ | | | | FUL | 1.3 | | |
| Middle East | 5400 | | | | | | | | |
| EU | 5410 | | | | | | | | |
| China | 5420 | | | | | | | | |
| Asia | 5430 | | | | | | | | |
| Latin America | 5460 | | | | | | | | |
| US | 5470 | | | ADJ | 3.1 | | | | |
| Labor | 3100 | | | | | | | | |
| Health | 3190 | | | | | CAR | 1.1 | | |
| Money | 3200 | | | | | | | FUL | 3.2 |
| Enviro | 3250 | | | | | | | ASC | 2.3 |
| International | 3500 | | | | | | | | |
| CEP | 3540 | GTA | 1.2 | | | | | | |

Table: Assessed courses and instructors since Fall 2019. Labels stand for graduate teaching assistant (GTA), adjunct (ADJ), career line faculty (CAR), and tenure line faculty (assistant AST; associate ASC; full FUL). The assignment frequencies (roughly) reflect teaching frequencies. Courses that have not been assigned are taught infrequently.

Per course and learning outcome, one form is filled out and three artefacts are saved. The summary form is critically important in the assessment process as it requires instructors



to constructively reflect upon their teaching goals, their students' success and hence the learning outcomes.

As can be seen, different learning outcomes have been assigned throughout to different courses and instructors. This facilitates communication about departmental instructional goals and programmatic learning outcomes, and critical reflection by instructors, thus ensuring program integrity and teaching excellence.

| | Frequency | |
|--------|-------------|-------------|
| | F2017-S2021 | F2019-S2021 |
| LO 1.1 | 7 | 2 |
| LO 1.2 | 6 | 2 |
| LO 1.3 | 6 | 2 |
| LO 2.1 | 5 | 2 |
| LO 2.2 | 6 | 2 |
| LO 2.3 | 6 | 2 |
| LO 3.1 | 6 | 2 |
| LO 3.2 | 6 | 2 |
| | 48 | 16 |

Below we further include summary statistics:

Table: Assessment frequency across Learning outcomes since Fall 2017.

| | Frequency | | Frequency |
|-----------|-----------|-----|-----------|
| Core | 20 | FUL | 12 |
| Metrics | 5 | ASC | 7 |
| Doc | 6 | AST | 6 |
| Hist | 5 | CAR | 4 |
| Electives | 12 | GTA | 15 |
| | | ADJ | 4 |

Table: Assessment frequency by type of course and type of instructor since Fall of 2017.



Master Program

The Master of Science (MS) degree in Economics is oriented toward the preparation of professional economists who work in the public or private sector and for students who may be considering further graduate work in economics or related fields. Students may choose the Master of Arts (MA) degree by satisfying an additional foreign language requirement that is coordinated through the Department of Languages and Literature in the College of Humanities.

The program is oriented toward a broad, general training in economics that includes theory and applied courses. Areas of specialization include public finance, natural resource and environmental economics, economic history, quantitative analysis in economics, industrial organization, monetary economics, international trade, development theory, poverty, feminist economics, labor economics and others.

Programmatic learning outcomes

Master students in Economics at the University of Utah are expected to:

- Have an advanced understanding of essential economic principles, the professional literature and methods of research used in the core fields of microeconomics, macroeconomics, and applied econometrics.
- Have an advanced understanding and demonstrate mastery of mathematical and statistical methods used in the discipline.
- Develop an area of specialization in which they have begun to make original contribution to knowledge through the completion and successful defense of a master thesis or a research project.
- Develop the writing and oral presentation skills that will make them effective communicators of knowledge and serve them well in careers as managers or researchers in the public or the private sector.

Assessment procedures

The department will use artefacts (i.e. examples from exams, projects or presentations) from core and selective courses, or artefacts from students' theses or master research projects.

A successful defense of master research project or thesis is an essential master program requirement. By the beginning of the third semester, a student in a Master of Science/Arts program must choose three faculty members who will serve as the supervisory committee. The student is expected to work with committee members, who will also attend the final oral exam and approve the thesis or research project. The majority of committee members must be tenured or tenure-track faculty and the chair must be from the Economics Department.



A master research project is a research paper written on a particular topic that has been decided by the student in conjunction with the chair of his/her Master Committee. When a student initially decides on a topic or field of interest, the student will approach an Economics faculty member, who has expertise in the field pertaining to this topic, for assistance by serving as the Chair of the student's Master Committee. The requirements for formatting and binding the document should be discussed with committee chair.

The student is expected to complete the master research project in a reasonable period of time and conduct a successful oral defense of the project. A master thesis is an in-depth research paper written on a particular topic selected by the student in consultation with the chair of the student's Master Committee. When a student initially decides on a topic or field of interest, the student will approach an Economics faculty member, who has expertise in the field pertaining to this topic, for assistance for serving as Chair of the student's Master committee. For the thesis option, students must follow University formatting rules for the thesis and the completed document must be approved through the Graduate Thesis Office. The student is expected to complete the master thesis in a reasonable period of time and conduct a successful oral defense of the project.

Assessment overview

The departmental committee that oversees the Master program in Economics has collected and reviewed all Master theses in Economics since inception of this assessment cycle.



PhD

The Ph.D. program in Economics at the University of Utah prepares students for professional careers in research, teaching, business, and government. The program aims to provide a broad mastery of theoretical and applied fields of economics. Both orthodox and heterodox approaches to economics are integral parts of the program, which includes a technically sophisticated presentation of economic theory and quantitative methods as well as a variety of fields of specialization. Our first year core courses include a sequence in Political Economy, which exposes students to a wider variety of approaches to economics than they would encounter in most other programs.

We regularly offer field courses in Development Economics, International Economics, Labor and Gender Economics, Environmental and Natural Resource Economics, Economic Doctrines, Advanced Monetary Theory, Health Economics, Economic History, and Behavioral Economics. Students may also enroll in field courses in Finance by special arrangement. To facilitate the transition from coursework to original research, all secondand third-year students are required to participate in the research workshops organized by the faculty.

Programmatic learning outcomes

Doctoral students in Economics at the University of Utah are expected to:

- Have an advanced understanding of essential economic principles, the literature and methods of research used in the core fields of microeconomics, macroeconomics, and political economy.
- Have an advanced understanding and demonstrate mastery of mathematical methods used in the discipline.
- Have an advanced understanding and demonstrate mastery of statistical methods used in the discipline.
- Develop an area of specialization, related to their field course work, in which they have begun to make original contributions to knowledge through a research program, including the completion and successful defense of a doctoral dissertation.
- Develop the writing and oral presentation skills that will make them effective communicators of knowledge as teachers and/or serve them in careers as researchers in academia, government, non-governmental research and policy organizations, or private enterprise.



Assessment procedures

The basic assessment cycle consists of (1) definition of learning outcomes and assessment procedure, (2) execution (collection of artefacts), and (3) analysis and revision. The following list outlines the procedure for the PhD degree in Economics at the University of Utah:

Assessment procedures for four LOA:

- 1. The outcomes from the Ph.D. qualifying exams will be used to assess mastery of principles and literature in microeconomics, macroeconomics and political economy
- 2. Artefacts from one qualifying exam will be used to assess the mastery of mathematical methods used in the discipline
- 3. Artefacts from one econometrics course will be used to assess the mastery of statistical methods used in the discipline
- 4. Artefacts from students' participation in the research workshops and/or from dissertations will be used to assess their expertise and contribution to a field of economics
- 5. Reviews and feedback from courses taught by graduate students and artefacts from students' presentations (e.g. PPT slides) at the research workshops and for thesis and topic defenses will be used to assess their skills as effective communicators of knowledge

The department will continue to document the job market outcomes of our Ph.D. graduates as an overall assessment of the Ph.D. program success.

Course selection relevant for LO 2

Mastery of mathematical methods used in the discipline is assessed based on qualifying exams in macroeconomics and microeconomics. Specifically, artefacts will be provided on a rotating basis between the two qualifying exams.

Econometrics course selection relevant for LO 3

The econometrics course selected to provide artefacts and assessment for the learning outcome 3) above will switch between the first year econometrics courses, ECON 7590 and ECON 7800, in order to ensure rotation across courses as well as instructors.

Collection of artefacts for each of the LOA above

1. Collections of artefacts for LO 1, 2 and 3 above will be done as follows: the faculty administering the qualifying exams in microeconomics, macroeconomics and political economy, or teaching the first year econometrics courses will select an exam or assignment question as an artefact. Specifically, after grading the exam, the faculty fill out a summary form, and further select one poor, one average and one excellent student work sample. These four documents are then aggregated



into one pdf, which is submitted to the Director of Graduate Studies (DOG) (or uploaded to Canvas).

- Collection of artefacts for LO 4 above: faculty in each of the research workshops will provide on a rotating basis artefacts to assess students' expertise and contribution to a field of economics. Specifically, the group will select one average and one excellent thesis chapter or research paper which will be submitted as a pdf to the DOG.
- 3. Collection of artefacts for LO 5 above: course feedback and research presentations will be used as a source of artefacts for assessing oral presentation skills. The UG director will provide one poor, one average, and one excellent course feedback report of graduate instructors. Course selection can be selected on a rotating basis of core and elective courses in the undergraduate program in Economics. Artefacts from research presentations should be submitted as PPT slides as follows: one presentation to a research workshop group; one presentation of a thesis/topic proposal defense; one presentation of a final thesis defense. The DOG will assign these artefacts to the research workshop groups, and to committee chairs on a rotating basis.

Analysis & revision:

- There will be <u>five submissions</u> (with a total of <u>15 student work samples</u>) for the Learning Outcomes 1, 2 and 3.
- There will be <u>two submissions</u> for the Learning Outcome 4.
- There will be three submissions of course feedback reports and three submissions of research presentations to assess Learning Outcome 5.

The submissions will are reviewed and discussed by the Ph.D. committee. On the basis of the lessons learned, the Ph.D. committee will propose revisions to LOs, the program as well as the assessment procedure for the next cycle.