THREE-YEAR ECONOMICS UNDERGRADUATE CURRICULUM

INET Economics Curriculum Task Force

INTRODUCTION

On the basis of the Task Force's analysis of the problems with the way economics currently is taught (see 'Problems and Principles' paper), the Task Force has developed a three-year, "width, competencies, depth" model. This note is a translation of that model into a concrete British single-honours undergraduate curriculum in economics. To facilitate adoption of the curriculum – either in part or in its entirety – at existing institutions, and to ensure that students of the new INET curriculum meet the requirements of existing graduate programmes, a few similarities to the existing curriculum have been retained both with regard to overall structure and, in the second year, to content.

Even so, a comparative glance at the existing curriculum and the INET curriculum shows that the INET curriculum represents a radical departure from the way students are taught today.

Typical existing curriculum:

	COURSES TAUGHT IN PARALLEL OR SEQUENTIALLY			
Year 1:	Intro to micro	Intro to macro	Intro to maths	Elective
Year 2:	Interm. Micro	Interm. Macro	Econometrics	Elective
Year 3:	Economic elective	Economic elective	Outside option	Dissertation

INET curriculum:

	COURSES TAUGHT IN PARALLEL			
Year 1: width	Economics of the Real World	Basic Concepts and philosophy of science	Basic Tools	Continuing debates in econ and econ history
Year 2: competencies	Micro: Dominant theory & its limitations	Macro: Dominant theory & its limitations	Econometrics	Language of econ and 'alternative' approaches
Year 3: depth	Real-world case studies	Economic electives	Outside option	Dissertation

In terms of content, the four major differences between the existing and proposed curricula are:

1. The proposed INET curriculum focuses is on the purpose and not the application of a particular methodology of economics. This necessitates philosophical, ethical and applied policy discussions

2. The proposed INET curriculum teaches theories and techniques as tools with specific applicability rather than universal 'truths'. This requires that students learn to choose different theories depending on the nature of the problem examined. For this purpose:
    a. All students take courses in economic history and history of economic thought to learn about the contexts in which various theories were developed
    b. All students learn about institutional structures in order to understand the variety of contexts in which different theories are to be applied
3. The proposed INET curriculum puts great emphasis staying in contact with the 'real world':
    a. Throughout, students are exposed to informative case studies
    b. Lecturers are expected to make use of teaching materials referring to topical issues
4. The INET curriculum incorporates the insight that a majority of students never interact with professional economists after graduation. All students are therefore taught how to express economic arguments to different kinds of audiences.

FIRST YEAR: WIDTH

With an eclectic composition of courses in the first year, students leaving the discipline early are guaranteed to have been steeped in the understanding that different theories work in different situations. While they all have their uses, none of them is universally applicable.

Students are encouraged to think laterally – to draw on a wealth of experiences and tools when approaching an economic problem. They also learn the basics of what it means to conduct qualitative and quantitative analysis scientifically.

(a) Economics of the Real World

The purpose of this course is to inspire students to study economics by making clear the discipline's relevance but also making them aware of its specific application. This course is, in essence, a one-year-long version of the 15 minutes of 'why economics?' that students typically get at the start of their first lecture in the first year in the existing curriculum.

Using topical examples, the first half of 'Economics of the Real World' introduces students to a wide array of problems about which economics has something to say and makes clear when it doesn't. Some of these questions and cases are meant to be solved in the lecture using reasoning à la *Freakonomics* or Tim Harford but many of them cannot be expected to be solved – at least not in the first year – but serve to stimulate debate and further students' interest in the discipline. Problems include:

a. Do we really need this much education?
b. Why is there persistent unemployment?
c. Why are some countries rich and others poor?
d. Climate change: is it worth responding?
e. Is free trade always best?
f. Whose future – the West's or the rest's?

g. Does growth always increase inequality?
h. Why do we need a state?
i. Do we need financial regulation? Should banks be broken up?
j. Is there a "right" $-£ exchange rate?
k. Are the Chinese consuming too little or the Americans consuming too much?

The first half of this course will also seek to discuss the role of economics in society by asking questions such as "what did societies look like before there were economists?"; and "how does economics relate to economies?". Throughout, students are encouraged to approach every problem by asking 'wide' questions drawing on a wide array of techniques. Solutions are to match questions rather than the other way around. Asking wide questions is the first step in introducing disciplined eclecticism.

In the second half of this course, students are exposed to the facts of the real world. The aim is to orientate students in the economic landscape. This involves teaching students about the different roles and institutional structures of the World Bank, the IMF and the Bank of International Settlement; going through how mortgages, pension systems, business associations and labour unions work; and requiring students to learn some basic figures such as the sizes of, say, the world's ten largest economies, the approximate magnitude of world trade and the market capitalisation of some of the largest companies.

(b) Basic concepts

In tandem with the 'Economics for the Real World' course, students are taught about the theoretical concepts which reside at the core of modern micro and macro economics. The course starts with a short introduction on the philosophy of science and the state of economics as a science – analysing how social sciences differ from natural sciences (studying a pre-interpreted world), and examining the relationships between theory and fact and between economics and other disciplines. The course then continues along the lines of existing introductory micro and macro courses. Topics include theories of: supply and demand, consumer choice, the firm, risk and uncertainty, general equilibrium theory, national income determination and growth, investment, international trade, money and banks, inflation, unemployment and business cycles. Being literate in these concepts does not only invite the student to the world of economics jargon and thereby to partake in discussions with other economists, it also allows the student a better theoretical understanding of the problems simultaneously discussed in 'Economics for the Real World'.

(c) Basic tools

In order to apply and test theoretical concepts, a thorough familiarity with the technical tools is a necessity. The purpose of the 'Basic Tools' course is to introduce students to basic mathematical and statistical techniques. It will also put emphasis on the importance of understanding and producing numbers. "How does the calculation of GNP differ from that of the GDP?" for instance. Topics include algebra, graphical representation, systems of equations, differentiation, optimisation, sampling methods, medians and averages and index constructions. As the year progresses, students

will be encouraged to apply their technical knowledge as a complement to empirics and theory in discussions in their other first-year courses. Throughout, students are trained in using relevant software such as MS Excel to facilitate their analysis.

At this early stage, it is also important that students are made aware of the limitations of mathematical and statistical analysis. Mathematical sophistication has been instrumental in developing and testing economic theories but it has also led to unhelpful 'physics envy'. Not everything that is mathematically elegant is conceptually valid and relevant to the real world. The course will complement the technical training with lectures on how to avoid the pitfalls of data-mining and other misuses of data; and it will explain both the limits of quantitative theory-testing and the difficulties of data collection. This part of the course ties in with the introduction to the philosophy of science in the parallel 'Basic concepts' course.

(d) Continuing debates in economics and economic history

Unlike the natural sciences, debates in economics are – to a large degree – interminable. The social and subjective nature of economic interaction invites a range of valid explanations for each observed phenomenon. Throughout this course, students rely on anthologies with selected original writings to learn about a wide range of great thinkers such as Smith, Marx, the 'Marginalists', Veblen, Schumpeter, Keynes, Knight, Hayek, Friedman, Simon and Lucas.

In the first half of this course students are taught about how different theoretical schools have approached the same economic problem from a wide array of different angles. Students are introduced to what the 'Greats' had to say about topics such as money, employment and unemployment, wages, business cycles, financial crises and prices. By adopting a 'one-problem-several-solutions' angle, students are encouraged to think critically about the dominance of theories in the discipline. "Are there other ways of thinking about it?" should be frequently asked question.

The second half of the course looks more specifically at important debates in economic history. Students are taught about how economists have analysed the rise of the West, the causes and consequences of the Industrial Revolution, Imperialism, the Asian growth leap, the great economic fluctuations of the last century and other topics.

Ideally, this course should teach the history of economic thought in the context of economic history. However, the two-part structure is justified given the difficulty of finding instructors who move comfortably in both.

SECOND YEAR: COMPETENCIES

In the second year, students are required to strengthen both their conceptual and technical competencies on the platform built in the first year.

Intentionally, the intermediate courses in micro, macro and econometrics are similar – but not identical – to intermediate courses in existing economics degree programmes. This is important in order to ensure that students who complete the INET curriculum possess the skills demanded at existing graduate-level programmes.

(a) Microeconomics

The purpose of this course is to strengthen students' understanding of key microeconomic concepts as well as the mathematical techniques necessary for their analysis. Topics include

- general equilibrium
- normative economics (welfare economics)
- market structures and institutions (public goods, natural monopolies, and externalities)
- knowledge problems (Hayek's theory of knowledge, Simon's bounded rationality, the distinction between risk and Keynesian/Knightian uncertainty)
- expected utility
- game theory
- industrial organisation and competition policy

As always in the INET curriculum, students are taught the limitations of theories as well as their uses.

(b) Macroeconomics

Just as in the case of the second-year micro course, the macroeconomics course aims to enhance students' understanding of key concepts as well as the mathematical techniques necessary for their analysis. Students are taught theories from a number of perspectives, including neoclassical and post-Keynesian economics. Topics span demand, supply and flexible prices in closed and open economies; the theory of effective demand; price rigidity and imperfect competition; inflation; expectations; fiscal and monetary policy; exchange rates, time inconsistency; central banks; intertemporal economics; international economics; and economic growth.

(c) Econometrics

Once the first-year 'Basic Tools' course has ensured an understanding of number construction and basic statistics, students are introduced to the tools of econometric analysis for the purpose of theory testing. Topics include the fundamentals of time-series and cross-section regression analysis, measurement error, binary dependent variables, panel data regression, instrumental variables and endogeneity. Throughout, strong emphasis is put on ensuring that students develop a good

understanding of probabilities. Moreover, the course covers model selection and introduces students to the unit-root non-stationarity and the generally non-constant nature of economies. Students will be given real data to try the techniques on, and to the extent possible example data will tie in with cases and problems discussed in the first-year 'Economics of the Real World' course.

The availability of masses of data series and fast computers means that students risk confusing the ease with which you can do quantitative analysis with its usefulness and relevance. Similar to the 'Basic tools' course, therefore, techniques are taught with 'health warnings' attached to them: throughout, students are reminded of the targeted applicability of the quantitative tools they learn.

(d) The language of economics, and alternative approaches

This course is divided into three equally sized components. The first of these, the language of economics, is compulsory for all students. The objective of this part of the course is twofold.

1. The first is to train students in the art of conveying economic arguments to a variety of audiences. Hence, students will be trained to express their economic ideas both orally and in writing to suit academic journals as well as current affairs magazines, policy debates as well as the layman in the street.
2. The second objective is to give students an understanding of the role of language (including metaphor and story-telling) both in economic behaviour and in economic analysis – themes familiar from the writings of Deirdre McCloskey, Akerlof and Shiller, and Richard Bronk.

On top of the 'language of economics' part of the course, students are required to familiarise themselves in some detail with two 'alternative approaches' chosen from a list. By showing a different perspective, the course aspires to stimulate students to think critically about dominant explanations of economic phenomena. The list which will have to reflect the interests of the faculty could, for instance, include institutional economics, behavioural economics, complexity economics, economic sociology, game theory and alternative financial market theories.

THIRD YEAR: DEPTH

At the beginning of the third year students should be familiar with the reasons economics is of interest to society, the interminable nature of much of economic debate, the tools and concepts of mainstream economics and its limitations, the value of communicating economic thought and the importance of alternative approaches. The purpose of the third year is to apply this knowledge to real economic problems.

Whereas in the first year the focus lay on encouraging wide questions, at this stage, students are expected to move beyond the mere asking and show mastery of filtering relevant from irrelevant tools and information as well as employing them intelligently in providing answers.

(a) Case studies

At the heart of the Task Force's reform philosophy lies the idea of producing *useful* economics graduates – economists who can engage in policy debates, provide accurate evaluations and who know the strengths and weaknesses of the models they are using. The case-study approach fits very well with this idea. Therefore, in this 'course', students are asked to choose four cases from a list. Topics can include:

a. the justification for banker's bonuses
b. the effectiveness of development aid
c. the collapse of the Soviet Union
d. the economic role of the state
e. the consequences of labour unions
f. pros and cons of public debt
g. applications of principal-agent problem
h. the Great Recession
i. the climate change coordination problem
j. the shift towards large supermarkets in urban peripheries
k. implications of changing demographies
l. politicians and 'closet mercantilism'

Cases are introduced with open-ended questions; students are required to identify the relevant ideas, concepts and tools to solve the problem at hand rather than being told what models to use.

(b) Economic electives

Alongside the more practical case studies, students are also expected to acquire a deeper understanding of economic theory. This is done in the form of taking two economic electives from a list which, depending on the resources of the particular department, could include

a. Ethics and economics
b. The philosophy of economics
c. Institutional economics

d. Labour economics
e. Development economics
f. Welfare economics
g. Money and banking
h. Advanced econometrics
i. International economics
j. Mathematical economics
k. Business cycles
l. Economic history
m. Industrial organisation
n. Economics of technology
o. Game theory

Unlike conventional electives, however, these courses are meant to draw on a plethora of different thinkers and examples from economic history as well as tie into discussions of ethics. For instance, the course on the theory of international economics should include Ricardo's ideas of comparative advantage as well as various criticisms of the same (Alexander Hamilton, Friedrich List, Erik Reinert, just to name a few), while also asking the question whether international trade is of intrinsic benefit to our society.

(c) Elective course from other department

As a part of the ideal of disciplined eclecticism, students take one course from another faculty within the university. The chosen elective may have nothing to do directly with economics yet contributes to the student's understanding of society at large.

(d) Dissertation

The opportunity to apply theoretical and technical knowledge in the form of independent research cannot be overestimated. The dissertation should show thorough awareness of content learnt in courses taken over the three years.

GENERAL BIBLIOGRAPHY TO ACCOMPANY THE INET UK CURRICULUM

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Frydman, R. and Michael Goldberg: Beyond Mechanical Markets

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