

# Global Overview of Compulsory Pre-requisites for the UBC Master of Public Policy and Global Affairs (MPPGA)

## Description

[The Master of Public Policy and Global Affairs \(MPPGA\)](#) is a 20-month professional program offered at the University of British Columbia (UBC) in Vancouver, B.C. The first year of the program requires students to follow mandatory core courses across a wide range of disciplines, including communications, economics, quantitative methods, and public management.

While most of these courses do not require any compulsory pre-requisites in order to be fully eligible after an informal acceptance process, three more quantitatively oriented courses will necessitate prior knowledge from incoming graduate students. Listed below, those two economics courses (microeconomics and macroeconomics), together with the sole course on data analysis and applied quantitative methods, have been subject to a global investigation across a multitude of undergraduate programs specialized in economics, applied social sciences and statistics.

- **GPP 501 – Microeconomics Analysis for Public Policy**
- **GPP 502 - International Macroeconomics**
- **GPP 503 – Measurement and Data Analysis for Policy**

Such an inquiry has been motivated by the need to gather a comprehensive and international data set that can help prospective students understand which academic courses (offered in person or online, e.g. Coursera, Edx, MITOpenCourseWare) might be the most suitable vis-à-vis the MPPGA program's level of requirement.

Furthermore, as the MPPGA program will welcome a growing number of international students, we have included at least one university per continent, accounting for the idiosyncrasies that we have observed across higher-education systems. In the end, after compiling the information present in our data set, we were able to assess some particular tendencies/trends that have proven to be useful and relevant regarding the pre-requisites' outlines displayed herein below. Such summaries can be used as groundwork on compulsory pre-requisites in economics and statistics for prospective students prior to applying to the MPPGA program.

Note: The list of worldwide pre-requisites could also serve as a reference database in order to resolve concerns from prospective students who may be unsure about the validity and relevance of their own academic backgrounds, independently of the continent or region that they are from.

## **GPP 501 – Microeconomics Analysis for Public Policy**

- At least one university-level course in microeconomics (basic principles of economics could not be seen as sufficient),
  - Microeconomics courses adapted to social sciences are not eligible, need to be taught from a Department of Economics,
  - Elementary or pre-university mathematics needed,
  - One or two semesters of university-level mathematics (first year) highly recommended, i.e. differential and multivariable calculus, linear algebra.
- ➔ If a 3-year undergraduate program (mostly across Europe, Asia and Oceania), we would require at least first year courses in microeconomics or principles of economics focused on microeconomics (e.g. “Introduction to Microeconomics” or “Microeconomics I”, while “Intermediate Microeconomics” could be seen as more technical and thus optional before applying to the MPPGA program).
- ➔ If a 4+-year undergraduate program (North and South America), then compulsory pre-requisites have to be at least 2<sup>nd</sup> year microeconomics courses (e.g. “Intermediate Microeconomic theory I” or “Introduction to Microeconomics” in some instances, while “Intermediate Microeconomics II” could be seen as more technical and thus optional).
- ❖ Brief overview of required Microeconomics knowledge
- Introduction and applications related to the concepts of Supply & Demand,
  - Notion of elasticity (quantitative understanding as well),
  - Understanding of general economic equilibrium, under perfect competition and imperfect competition,
  - Alternative market structures, such as monopoly and oligopoly,
  - Study of the individual's consumption choices or consumer theory (preferences, utility...),
  - Study of the firm's production decisions or production theory (production function, labour, physical capital, human capital...),
  - Introduction to market imperfections: externalities, public goods, asymmetry of information...
  - Government interventions (taxes, subsidies...).

## **GPP 502 - International Macroeconomics**

- At least one university-level course in macroeconomics (basic principles of economics could not be seen as sufficient),
  - Macroeconomics courses adapted to social sciences are not eligible, need to be taught from a Department of Economics,
  - Elementary or pre-university mathematics needed,
  - One or two semesters of university-level mathematics (first year) highly recommended, i.e. differential and multivariable calculus, linear algebra,
  - Prior knowledge of Microeconomics is recommended before taking a course in Macroeconomics.
- ➔ If a 3-year undergraduate program (mostly across Europe, Asia and Oceania), we would require at least first year courses in macroeconomics or principles of economics focused on macroeconomics (e.g. “Introduction to Macroeconomics” or

“Macroeconomics I”, while “Intermediate Macroeconomics” could be seen as more technical and thus optional before applying to the MPPGA program).

➔ If a 4+-year undergraduate program (North and South America), then compulsory pre-requisites have to be at least 2<sup>nd</sup> year macroeconomics courses (e.g. “Intermediate Macroeconomic theory I” or “Introduction to Macroeconomics” in some instances, while “Intermediate Macroeconomics II” could be seen as more technical and thus optional).

❖ Brief overview of required Macroeconomics knowledge

- Determination of the level of national income, savings and investment,
- National accounting, deflators, consumer price index (CPI),
- Understanding the relationship and interconnections between key macroeconomic variables,
- Study the behaviour of the aggregate economy in the short-run and in the the long-run,
- Exchange rates, inflation, unemployment,
- Growth theory, with some knowledge of the Solow model,
- Static general equilibrium for a closed and open economy (with the dynamic component being optional),
- Business cycle theory,
- IS-LM Model, Phillips curve, AD-AS,
- Balance of payments,
- Fiscal and monetary policies,
- Introduction to international trade.

### **GPP 503 – Measurement and Data Analysis for Policy**

- At least one university-level course in statistics (& probability) or quantitative methods in Economics,
- Statistics courses adapted to social sciences are not eligible (with few exceptions), need to be taught from a Department of Economics or a Department of Statistics or a Department of Mathematics (some Departments of Commerce or Business can also be accepted),
- Elementary or pre-university mathematics needed,
- One or two semesters of university-level mathematics (first year) highly recommended, i.e. differential and multivariable calculus, linear algebra.

➔ If a 3-year undergraduate program (mostly across Europe, Asia and Oceania), we would require at least first year courses in statistics (& probability) or quantitative methods in Economics (e.g. “Introduction to Statistics” or “Statistics I” or “Introduction to Quantitative methods for Economics”, while “Introduction to Econometrics” could be seen as more technical and thus optional).

➔ If a 4+-year undergraduate program (North and South America), then compulsory pre-requisites have to be at least 2<sup>nd</sup> year statistics (& probability) courses (e.g. “Descriptive Statistics and Probability” or “Statistics and Data analysis for Economics” for instance, while Econometrics courses can be seen as more technical and thus optional).

❖ Brief overview of required Statistics (& probability) knowledge

- Descriptive statistics: measures of central tendency and dispersion,
- Understanding of different types of variables: continuous, discrete and dichotomous,

- Able to demonstrate great Excel skills, while prior knowledge of Stata and R could be considered as valuable assets,
- Histogram, box plots, scatter plots (theoretical understanding & application via Excel),
- Probability theory: independence, conditionality, Bayes' theorem...
- Random experiment and Randomized Control Trials (RCTs),
- Binomial distribution, hypergeometric distribution, the Poisson distribution, the normal distribution...
- Bivariate distributions: notions of covariance and correlation,
- Statistical inference: t-tests, goodness of fit, confidence intervals and hypothesis testing, p-value, statistical power,
- Introduction to regression models (multivariate regression being optional)