# Topics in macroeconomics 2

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| Course title – Intitulé du cours | Topics in macroeconomics 2 |
| Level / Semester – Niveau /semester | L3S5 : Eco, EM, ED |
| Lecturer – Enseignant responsible | Philippe Alby |
| Lecturer | Loïc Batté |
| Teaching assistant – Chargé de TD | |
| Lecture Hours – Volume Horaire CM | 30 |
| TA Hours – Volume horaire TD | 15 |
| Language of instruction – Langue du cours | English[1] |
| Language for tutorials – Langue des TD et/ou TP | English[2] |

**Teaching staff contacts – Coordonnées de l'équipe pédagogique :**

Philippe Alby: Philippe.alby@tse-fr.eu
Loïc Batté: loic.batte@tse-fr.eu
Information about office hours will be provided to the students at the start of the course. All the TAs shall provide their email on their first tutorial session.

**Course Objectives – Objectifs du cours :**

This course is the second half of the yearlong macroeconomics course for third-year undergraduates. It is focused on the study of the economy in the very long run. Throughout the course, the economy is studied as a dynamic system. We will make explicit use of microeconomic foundations to get aggregate economic behavior, which will be determined in a general equilibrium setting.

*This course starts with an exploration of the dynamics of a natural resource when human activity interferes with the natural rate of renewal of this resource through harvesting. The level of human population is assumed constant. In the next chapter, it then develops into a full-fledged integrated model where human population and natural resources co-evolve over time. We focus explicitly on the possibility of a collapse (both in economic and ecological terms). Time permitting, a study of Malthusian models will also be covered.*

*A final step in this course is to go back to the first assumptions made about technological progress in the Solow model. We will present two models of endogenous growth where technological progress occurs through rent-seeking behavior by innovators (expanding variety model then Schumpeterian growth model).*

[1] As the lecturers are French native speaker, students should feel free to interact in French whenever English becomes a serious obstacle to comprehension, provided it does not prevent non-French speakers from following the lectures.
[2] None of the teaching assistants is a French native speaker, so English should remain the main language for interactions during the tutorials.

By the end of this course, the student will be able to:

- Provide a detailed account of the main forces and constraints that shape the evolution of the aggregate economy in the very long run
- Solve quantitative models of the aggregate economy using the tools and techniques studied in class
- Provide an economic interpretation of the mathematical results obtained once the model is solved
- Discuss the main assumptions behind the models used in modern macroeconomics

**Prerequisites – Prérequis :**

- Mathematics: differential calculus; real analysis; constrained optimization.
- Microeconomics: producer theory, consumer theory, general equilibrium (undergrad level); basics of welfare analysis.
- Macroeconomics: national accounts; growth theory; AS-AD model; notions of business cycle analysis and macroeconomic policy.
- English: B2 level.

**Practical information about the sessions – Modalités pratiques de gestion du cours :**

No remote teaching/learning unless necessary. Attending the tutorials is mandatory. The use of electronic devices with Internet connection is allowed provided they are used for class purposes (taking notes, downloading and editing the handouts…). The lecturer reserves the right to establish additional rules to foster good working conditions in class.

**Grading system – Modalités d'évaluation :**

To complete the class, students will have to sit for two written exams:
- A mid-term exam (1h) that accounts for 40% of the final grade.
- A final exam (1h30) that accounts for 60% of the final grade.

**Bibliography/references – Bibliographie/références :**

- Daron Acemoglu: "Introduction to modern economic growth"
- Philippe Aghion & Peter Howitt: "Economic Growth"
- Garin, Lester & Sims: "Intermediary Macroeconomics" (available online for free).
- Pablo Kurlat: "A Course in Modern Macroeconomics" (available online for a small fee).

**Session planning – Planification des séances**

- Topics in macroeconomics 1 (first semester)
  - Chapter 1: Introduction to Growth Theory (4 weeks)
  - Chapter 2: consumption & savings (2 weeks)
  - Chapter 3: investment & capital accumulation (2 weeks)
  - Chapter 4: OLG models (2 weeks)
- Topics in macroeconomics 2 (second semester)
  - Chapter 5: Resource economics (3 weeks)
  - Chapter 6: The economics of collapse (3 weeks)
  - Chapter 7: Innovation and endogenous growth (4 weeks)

- (Chapter 8: Malthusian models, time permitting)

**Remote learning – *Enseignement à distance :***

If necessary, remote learning solutions will be provided.