

Syllabus

The structure of this tutorial

This tutorial runs over **six sessions of 90 minutes**, followed by one **voluntary mock exam**. Each session covers one topic that recurs across your KLU M.Sc. courses. The sessions build on one another, so following the order pays off, but every session also stands on its own if you want to revise a single topic.

Sessions take place on **Tuesdays**; dates, times and rooms are listed below. Two sessions run online via **Zoom**, the link is posted in Moodle. Note that the mock exam starts earlier than the other sessions.

Sessions

#	Topic	What it covers	When	Where
1	<u>Notation & Logic</u>	Number sets, intervals, sums and products, indices; statements, implication, and quantifiers	Tue 8 Sep 2026, 18:00–19:30	Auditorium
2	<u>Sets</u>	Elements, subsets, and cardinality; union, intersection, difference, and complement; Cartesian products and power sets; sets in business	Tue 15 Sep 2026, 18:00–19:30	Auditorium
3	<u>Functions</u>	Domain and range; the function gallery from linear to logarithmic; composition and inverses; monotonicity, convexity, and concavity	Tue 22 Sep 2026, 18:00–19:30	Zoom
4	<u>Differentiation</u>	Rates of change and the derivative; power, product, quotient, and chain rules; the second derivative and marginal analysis	Tue 29 Sep 2026, 18:00–19:30	Zoom
5	<u>Single Variable Optimization</u>	Stationary points and the first-order condition; second-order test; local vs. global; profit maximisation and the economic order quantity	Tue 6 Oct 2026, 18:00–19:30	Auditorium

#	Topic	What it covers	When	Where
6	Systems of Linear Equations	From one equation to a system; Gaussian elimination; one, no, or infinitely many solutions; equilibrium and production planning	Tue 13 Oct 2026, 18:00–19:30	Auditorium
7	Mock Exam (voluntary)	An interactive self-test spanning all six sessions, worked through together in class, ungraded and untracked	Tue 27 Oct 2026, 14:30–16:00	Auditorium

The Homework Rhythm

Each session comes with a set of **homework tasks** and a short **self-test quiz**. You work on them **between sessions**, at your own pace. Nothing is collected or graded.

- The **tasks** are problems with fully worked solutions (hidden until you want them). Treat them as the place where the real learning happens.
- The **self-test quiz** is a quick, formative check with instant feedback.
- The **cheatsheet** is a one- to two-page reference you can print and keep next to you while practising.

Every session (from Session 2 onward) **opens with a recap and your questions** on the previous homework. So make a note of anything that stayed unclear and bring it along: that discussion is part of the plan.

Materials

All materials live on this website. Lectures are available as a web page, as reveal.js **slides**, and as a **PDF** (use the format links at the top of each lecture). Task sets can be printed as a worksheet, with solutions kept on the website.

For textbook and self-study recommendations, see the [Literature](#) page. For practical questions, see the [FAQ](#).