BO1. History of Mathematics: lecture list

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In pre-recording the lectures for this term, I will broadly retain the standard 16-lecture structure, along with an indication (by week number) of when the lectures should be viewed — i.e., early in the week indicated. However, for ease of recording, and (hopefully) for ease of viewing, I have broken the lectures down into smaller pieces, labelling them as 'Lecture m, Part n', 'Lecture m, Part $n + 1$', etc. The result is a rather lengthy list of videos in Panopto and corresponding list of slides on the course materials page. This file is therefore intended as an at-a-glance guide to the topics that may be found in each lecture.

This document will be updated throughout MT, as (minor) additions or changes will most likely be made.

Week 1

Lecture I: Introduction

Part 1: What is the history of mathematics?

Part 2: Admin

Part 3: Napier's invention of logarithms

Lecture II: Analytic geometry and the beginnings of calculus

Part 1: Early notation

Part 2: The appearance of symbolic notation

Part 3: Geometry and tangents

Week 2

Lecture III: The beginnings of calculus, continued

Part 1: Quadrature

Part 2: Indivisibles and infinitesimals

Part 3: Newton and Leibniz

Lecture IV: Newton's *Principia*

Part 1: Isaac Newton

Part 2: The mechanics of the universe

Part 3: The *Principia*

Week 3

Lecture V: Successes of and difficulties with the calculus: the 18th-century beginnings of 'rigour'

Part 1: Publication, acceptance, and successes

Part 2: Functions

Part 3: Difficulties and responses

Lecture VI: Infinite series

Part 1: A non-Western prelude

Part 2: The 17th century

Part 3: The 18th century

Week 4

Lecture VII: Establishing rigorous thinking in analysis

Part 1: Early rigour

Part 2: Further rigour

Lecture VIII: Classical algebra — equation solving 1800 BC – AD 1800

Part 1: Quadratics, cubics, and quartics

Part 2: The theory of equations

Week 5

Lecture IX: The 19th-century beginnings of 'modern algebra'

Part 1: Resolvents and permutations

Part 2: Groups

Part 3: The emergence of abstract algebra

Lecture X: Linear algebra

Part 1: Linear equations

Part 2: Determinants and matrices

Part 3: Vectors and vector spaces

Week 6

Lecture XI: 19th-century rigour in real analysis

Part 1: Uniformity

Part 2: Integration

Lecture XII: 19th-century rigour in real analysis, continued

Part 1: Completeness

Part 2: Real numbers

Part 3: Sets

Week 7

Lecture XIII: Complex analysis

Part 1: Complex numbers

Part 2: Functions of a complex variable

Lecture XIV: Geometry and number theory

Part 1: Non-Euclidean geometry

Part 2: Early number theory

Week 8

Lecture XV: Ancient mathematics, modern historiography

Lecture XVI: Concluding miscellany