Cambridge

- **Foundations of Computer Science** Taught by Robert Harle and Jeremy Yallop
  An introductory computer science course taught via OCaml. Topics include Big O notation, basic algorithmic complexity assessment, abstract data structures, recursive functions, tail-recursion optimisation.

- **Databases** Taught by Timothy Griffin
  A course introducing the purpose and usage of databases, including the object-relationship model and the graph-oriented model and the relational calculus.

- **Digital Electronics** Taught by Ian Wassell
  A course on circuitry, combinational logic and sequential logic. Topics included Boolean algebra, adders, latches, flip flops and registers.

- **Mathematics for the Natural Sciences** Taught by Stuart Dalziel
  A course on mathematics required for university-level science problems. Topics included Cartesian geometry with vectors, complex numbers, probability, vector calculus and differential equations.

- **Introduction to Graphics** Taught by Rafal Mantiuk
  A course on basic graphics. Topics included implementing the standard ray tracing model; projection; rasterisation; homogeneous coordinates and colour theory.

- **Object-Oriented Programming** Taught by Andrew Rice
  A course on OOP fundamentals, taught via Java. Topics include inheritance, classes and objects, polymorphism, garbage collection, error handling, design patterns and language evolution.

- **Discrete Mathematics** Taught by Marcelo Fiore and Frank Stajano
  A course in three parts: the first emphasises common proof techniques via basic number theory: solving congruence relations etc; the second is on set theory - Calculus of bijections, axiom of choice, Cantor-Schoeder-Bernstein Theorem etc; the third is on formal languages and automata, through to Kleene's theorem and the Pumping Lemma.

Pomona College

Mathematics

- [A] **Math 60: Linear Algebra** Taught by Stefan Garcia
  Emphasised linear independence and bases, null spaces and ranks of linear transformations, representation of transformations by matrices. Included diagonalisation, eigenvalues/eigenvectors and applications of linear algebra such as least squares problem, singular value decomposition.
  No textbook used.

- [N/A]**Math 101: Introduction to Real Analysis** Taught by Edray Goins
  A course mostly aimed on structure and presentation of proofs. Construction of the real numbers using Dedekind cuts was also discussed, some elementary epsilon-delta analysis was performed.
  No textbook used.
  N.B. Due to course registration limits, I did not formally register for this class, though averaged over 95% across homeworks and tests for it.

- [P]**Math 103: Combinatorial Mathematics** Taught by Shahriar Shahriari
  An introduction to combinatorics and its techniques, including basic counting methods, Ramsey theory, generating functions, elementary graph theory and networking.
  Textbook used: *An Invitation to Combinatorics* (then in pre-print) by Shahriar Shahriari.
  N.B. Due to the coronavirus epidemic, I was not assigned a grade for this course, though averaged over 95% across homeworks and tests for it.

- [N/A]**Math 135: Functions of a complex variable** Taught by Stefan Garcia
  A course on introducing holomorphic functions and their basic properties, including the Cauchy Riemann equations, Cauchy's Integral formula, calculus of residues, winding numbers, conformal mappings and a proof of the Prime Number Theorem.
  No textbook used.
  N.B. Due to course registration limits I did not formally register for this class, though submitted the relevant work for it. I was probably on track for a B.

- [P]**Math 171: Abstract Algebra: Groups and rings** Taught by Ghassan Sarkis
  A course on basic group theory: from axioms to isomorphism theorems through Lagrange, Cauchy and Sylow theorems with emphasis on cosets and group actions. A few weeks devoted to basic ring theory: distinction between Euclidean domains, Principal ideal domains and unique factorisation domains.
  Textbook used: *Algebra in Action: A course in Groups, Rings, and Fields* by Shahriar Shahriari (Chapters 1-12 and 15-18)
  N.B. Due to the coronavirus epidemic, I was not assigned a grade for this course, though averaged over 90% across homeworks and tests for it.

- [N/A]**Math 173: Advanced Linear Algebra** Taught by Stefan Garcia
  A course designed to redo linear algebra from a more generalised infinite-dimensional perspective. Topics included general inner product spaces, similarity, the spectral theorem, Jordan canonical form, the Cayley Hamilton theorem, single value decomposition.
  Textbook used: *A second course in Linear Algebra* by Stefan Garcia and Roger Horn
  N.B. Due to course registration limits I did not formally register for this class, though averaged 90% across homeworks and tests for it.

Other courses

- [P]**Greek 104: Readings in Koine Greek** Taught by Ben Keim
  A half-credit course during which we translated the gospel according to John together.

- [P]**Greek 104: Readings in Koine Greek** Taught by Ben Keim
  A half-credit course during which we translated Revelation together.

- [A]**Greek 33: Intermediate Greek** Taught by Richard McKirahan
  A course in Ancient Greek, aimed at honing grammar and translation skills. Mostly focused on Xenophon.

- [P]**Greek 44: Advanced Greek** Taught by David Roselli
  A course in Ancient Greek, largely aimed at focusing on details of texts, rather than basic translation skills. Mostly focused on Homer, with some lyric poetry.
  N.B. Due to the coronavirus pandemic, I was not assigned a grade for this course, though believe I was on track for an A.

- [P]**History 101K: Politics of Honor in Ancient Greece** Taught by Ben Keim
  A course on the meaning of honor in ancient mediterranean society and how its importance was reflected in the materials we have from that time.
  N.B. Due to the coronavirus pandemic, I was not assigned a grade for this course, though believe I was on track for an A-/B+.

- [A]**Anthropology 145: Mesoamerican Archaeology** Taught by Arlen Chase
  An introductory course with a world-expert with his own dig site in Belize. Predominantly focused on the Maya, though the Aztec were covered too.

- [A]**Chemistry 51: Accelerated General Chemistry** Taught by Zhao Li
  A fast-paced course designed to cover first-year chemistry in one semester. Topics included chemical equilibria, atomic structure, themodynamics, basic quantum mechanics and experimental technique, including computer modeling.