

## MATHEMATICS A.B. (Plan 2 - Secondary Teaching)

### SAMPLE SCHEDULE

YEAR 1	YEAR 2
<u>FALL QUARTER</u> : MAT 21A, 1 natural science course	<u>FALL QUARTER</u> : MAT 21D, MAT 22A, MAT 22AL
<u>WINTER QUARTER</u> : MAT 21B, 1 natural science course	<u>WINTER QUARTER</u> : MAT 22B, 1 natural science course
<u>SPRING QUARTER</u> : MAT 21C, ECS 32A	<u>SPRING QUARTER</u> : MAT 108, MAT 115A
YEAR 3	YEAR 4
<u>FALL QUARTER</u> : MAT 127A	<u>FALL QUARTER</u> : MAT 150A, MAT 1XX
<u>WINTER QUARTER</u> : MAT 127B, MAT 135A	<u>WINTER QUARTER</u> : MAT 111, MAT 141
<u>SPRING QUARTER</u> : MAT 127C	<u>SPRING QUARTER</u> : Capstone

### Requirements

PREPARATORY COURSEWORK (39-43 units): Plan to complete these by the end of sophomore year.				
Course	Units	Qtr(s) Offered	Year	Prerequisites & Enrollment Restrictions
<input type="checkbox"/> MAT 21A (Calculus: Differential Calculus)	4	F W S SSI SSII		Math placement exam score of 35 or higher (& 3 or higher on trig subscore)
<input type="checkbox"/> MAT 21B (Calculus: Integral Calculus)	4	F W S SSI SSII		21A or 21AH with C- or above; or 17A with B or above
<input type="checkbox"/> MAT 21C (Calculus: Partial Derivatives & Series)	4	F W S SSI SSII		21B, 21BH, 16C, or 17C with a C- or above; or 17B with a B or above
<input type="checkbox"/> MAT 21D (Vector Analysis)	4	F W S SSI SSII		21C or 21CH with a C- or above; or 17C with a B or above
<input type="checkbox"/> Choose between (22A/27A and 108) or 67:				
<input type="checkbox"/> MAT 22A (Linear Algebra) <b>OR</b>	3	F W S SSI SSII		21C or 21CH with a C- or above; AND ENG 6 or concurrent enrollment in 22AL
MAT/BIS 27A (Linear Algebra w/ Applications to Bio)	4	W		17C or 21C or 21CH C- or above
<input type="checkbox"/> <b>AND</b> MAT 108 (Intro to Abstract Math)	4	F W S SSI SSII		21B (but not recommended until you complete 21C)
<input type="checkbox"/> <b>OR</b> MAT 67 (Modern Linear Algebra)**	4	W		21C or 21CH with a C- or above. <i>See note below.</i>
<input type="checkbox"/> MAT 22B (Differential Equations) <b>OR</b>	3	F W S SSI SSII		22A or 67 with C- or above
MAT/BIS 27B (Differential Equations w/ Applications to Bio)	4	S		27A C- or above; or 22A C- or above AND (22AL or ENG 6 OR EME 5 C- or
<input type="checkbox"/> ENG 6 (Engineering Problem Solving), <b>OR</b>	4	F W S SSII		16A, 17A, or 21A, C- or above; AND 16B, 17B, or 21B with a C- or above (may be taken concurrently)
ECS 32A (Intro to Programming)***	4	F W S		Please wait to take this class until after your first quarter.
<input type="checkbox"/> 12 units of non-math natural science classes	12			For a list of approved classes, visit the Area (Breadth) Requirements section of <a href="https://ls.ucdavis.edu/degree-requirements">https://ls.ucdavis.edu/degree-requirements</a> .
<input type="checkbox"/> MAT 22AL, <b>OR</b>	1	F W S SSI SSII		16C, 17C, or 21CH
ENG 6 (Engineering Problem Solving) - or EME 5 or ECH 6	4	F W S SSII		16A, 17A, or 21A, C- or above; AND 16B, 17B, or 21B with a C- or above (may be taken concurrently)

#### NOTES

\*\* MAT 67 is a more abstract, rigorous version of 22A and 108. Recommended if you earn all A's in MAT 21ABC and like theory.

\*\*\* ECS 32A can be replaced by ECS 10, 30, 40, 32B, 34, 36A, 36B, or 36C.

If you are interested in teaching high school or junior high, consider a Single Subject Waiver. [math.ucdavis.edu/undergrad/degree-requirements/teaching-credential](http://math.ucdavis.edu/undergrad/degree-requirements/teaching-credential)

<b>DEPTH COURSEWORK (39 units):</b> Plan to complete these during your junior and senior years.					
	<b>Course</b>	<b>Units</b>	<b>Qtr(s) Offered</b>	<b>Year</b>	<b>Prerequisites &amp; Enrollment Restrictions</b>
<input type="checkbox"/>	MAT 127A (Real Analysis)	4	F W S SSI		21C or 21CH; and (22/27A and 108) or 67
<input type="checkbox"/>	MAT 127B (Real Analysis)	4	F W S SSII		127A
<input type="checkbox"/>	MAT 127C (Real Analysis)	4	F W S SSI		127B
<input type="checkbox"/>	MAT 135A (Probability)	4	F W S SSI		MAT 021C; and (MAT 108 or MAT 127A)
<input type="checkbox"/>	MAT 150A (Modern Algebra)	4	F W SSI		(22/27A and 108) or 67
<input type="checkbox"/>	MAT 111 (History of Math)	4	W		8 units of upper division MAT
<input type="checkbox"/>	MAT 115A (Number Theory)	4	F SSI SSII		21B
<input type="checkbox"/>	MAT 141 (Euclidian Geometry)	4	W S		21B and (22/27A or 67)
<input type="checkbox"/>	Enrichment Class (MAT 111 - 185B, excluding 180)	4	See below for more information about Enrichment options.		
<input type="checkbox"/>	Capstone	3	See info below for more information about Capstone options.		

*Information above is subject to change, based on changes to course offerings, prerequisites, etc.*

### **ENRICHMENT CLASSES**

#### **You are required to take 1 Enrichment Course**

- Your Enrichment course must be from the Math Department. Any class starting with MAT 111 and going through MAT 185B will count, excluding MAT 180 and any core classes (e.g. MAT 127ABC, 135A).

### **CAPSTONE**

You are required to complete 1 of the following options before graduation (typically in your last year).

- One of the in-depth math courses: **MAT 115B, 118B, 119B, 135B, 146, 150B, 150C, or 185B.**
- **MAT 180** (Special Topics class). Offered F, W, S. Topic changes every quarter: <https://www.math.ucdavis.edu/courses/syllabi/special-topics/>
- **MAT 189** (Advanced Problem Solving). Offered irregularly (usually spring). Project-based class with written and verbal presentations.
- **MAT 194** (Undergrad Thesis). Requires that you find a faculty member who will work with you. 2 quarter commitment minimum. <https://www.math.ucdavis.edu/undergrad/research/thesis/>
- **EDU/GEL 183** (Teaching High School Math). Teaching class & internship through CalTeach/MAST (Math and Science Teaching) Program.