This chart compares the equivalent sections of the UC Davis MAT 17A and (enter your college name here + course name and number).

**Calculus For Biology and Medicine Course Comparison**

Equivalency of UC Davis Calculus for Biology and Medicine (MAT 17A) and (enter your college here + course name and number)

Textbook used for (college name) course:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ISBN:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **UC Davis MAT 17A Sections** | **(enter your college + course name and number) Sections** |
| 1.1-1.3 Preliminaries: Elementary functions/Graphing.Include one full lecture on ‘scaling’, log transforms, and log-log/semi-log plots |  |
| 2.1 Discrete models of exponential growth and decay |  |
| 2.2 Sequences |  |
| 2.3 Biological examples of discrete models (e.g. Logistic map). Basic ideas of fixed points/steady states, stability, periodic solutions and chaos). |  |
| 3.1 Limits - only informal definition of a limit |  |
| 3.2, 3.5 Continuity of functions (very briefly); Intermediate value theorem and the bisection method |  |
| 3.3, 3.4 Limits; Limits at infinity; Trig limits (briefly, without detailed proofs); Sandwich Theorem, |  |
| 4.1 Definition of derivative and geometric meaning; Derivative as the rate of change; Differentiability |  |
| 4.2 Power rule and basic rules of differentiation - no detailed proof of the power rule, but discuss idea of the proof using a simple (quadratic) example |  |
| 4.3 Product and quotient rules |  |
| 4.4 Chain rule; Implicit differentiation; Related rates; Higher derivatives |  |
| 4.5, 4.6 Derivatives of exponential and trigonometric functions |  |
| 4.7 Derivatives of inverse and logarithmic functions |  |
| 4.8 Linear approximation |  |
| 5.1 Extrema; (Optional: Mean value theorem) |  |
| 5.2 Monotonicity and concavity |  |
| 5.3 Graphing-examples including sigmoidal curves |  |
| 5.4 Optimization |  |
| 5.5 L’Hospital’s Rule |  |
| 5.6 Stability of fixed points in difference equations |  |
| Use remaining lectures as buffer for material above *and/or* to cover optional material in 5.7 (Numerical method for root finding - Newton-Raphson Method) |  |