

The Computational Biosciences Professional Sciences Masters Program at Arizona State University

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In this presentation I will give a brief background of the history of the CBS program at ASU. This will lead to our curriculum for the CBS students. I will then focus on the specific courses which are designed to review mathematical details for advanced graduate students from other disciplines. The field of computational biosciences is rich with examples in which one can review or introduce concepts in multivariable calculus, linear algebra and differential equations. It is our view at ASU that graduate students aiming for careers in the technical areas of the life sciences, need familiarity with these concepts, but can learn to appreciate the mathematical concepts in terms of very relevant applications. I will present a few examples in which I have discussed the basics behind numerical optimization for problems as diverse as phylogenetics and pattern recognition.