NEW!

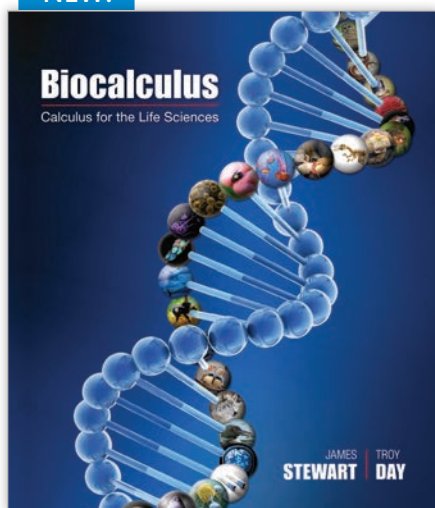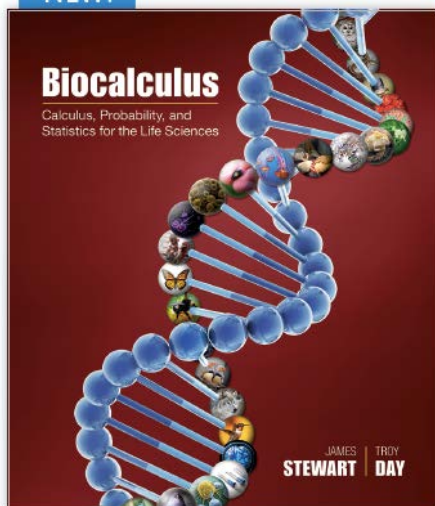**Biocalculus: Calculus
for the Life Sciences, 1e**

James Stewart | Troy Day
ISBN-13: 978-1-133-10963-1
©2015 | Hardcover

NEW!

**Biocalculus: Calculus,
Probability, and Statistics
for the Life Sciences**

James Stewart | Troy Day
ISBN-13: 978-1-305-11403-6
©2016 | Hardcover

New from James Stewart and Troy Day: *Biocalculus: Calculus for the Life Sciences* and *Biocalculus: Calculus, Probability, and Statistics for the Life Sciences*. The first book includes content on calculus and differential equations, as well as important aspects of linear algebra. The second book includes all content from the first, as well as topics in probability and statistics. Both texts show students how mathematics relates to biology, with a style that maintains rigor without being overly formal.

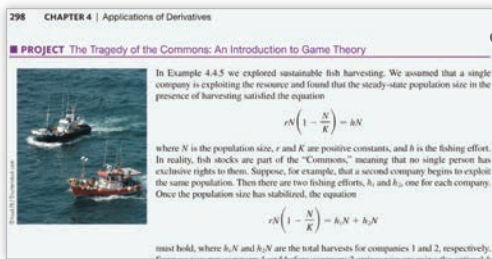## DIVERSE MATERIALS ALLOW FOR FLEXIBLE COURE DESIGN

Some life science calculus courses are similar to other calculus offerings but are presented in the context of biological examples. Others are more radical departures from mathematical tradition and instead are influenced heavily by biological tradition. These can involve discovery-based approaches, active labs, and atypical mathematical content. The *Biocalculus* texts are designed to provide flexibility for accommodating these diverse needs.

- The main exposition of each textbook provides the strong backbone required for any course and the material is developed in the context of *genuine life-science applications* that are current and topical.

- There are *24 extended projects* that can be used in a variety of ways including group work or weekly active labs. These projects are chosen to be biologically meaningful and to illustrate a breadth of applications. They include examples from bioinformatics and high-dimensional data, epidemiology, ecology, biomechanics, molecular biology, surgery, bio-economics, game theory, physiology, behavioral ecology, vaccination, anatomy, sports medicine, pharmacology, and biophysics to name a few.

- *Extensive ancillary materials* are posted on the book website under the heading Biology Background (stewartcalculus.com). Each set of materials is associated with an Example, Exercise, or Project of the textbook (marked with "BB"). These resources provide the opportunity to go much more deeply into the biology. Many involve downloadable data from the literature that can be used in class or in labs and tutorials to motivate the associated mathematical concepts. Content also includes animations and videos.

- *Case studies* are provided in the textbook and additional ones will be posted on the book website. These provide another resource that might be used in less traditional course designs. Each case study is an extensive real-world application requiring several different mathematical skills. Each is made up of 4-5 components, with each component tied to a particular mathematical concept. The exposition of each case study is more focused on modeling, and addresses how one translates biology into mathematics and vice versa.

Conceptual Exercises foster conceptual understanding through the problems that you assign. Some exercise sets begin with requests to explain the meanings of the basic concepts of the section. Similarly, all the review sections begin with a Concept Check and a True-False Quiz. Other exercises test conceptual understanding through graphs or tables. Another type of exercise uses verbal description to test conceptual understanding.
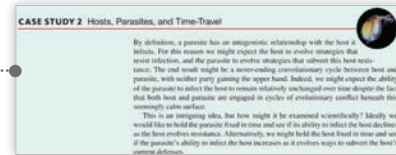
Continued on next page

Projects involve the students and make them active learners by giving them a feeling of substantial accomplishment when completed. This text provides 24 projects.

Two Case Studies are included: Kill Curves and Antibiotic Effectiveness; and Host, Parasites, and Time Travel. These are extended real-world applications from the primary literature that are more involved than the projects and tie together multiple mathematical ideas throughout the book.

ENHANCED WebAssign®

Increase Engagement. Improve Outcomes. Superior Service.

Built on a foundation of the proven content of Cengage Learning authors, Enhanced WebAssign for Biocalculus solves the toughest challenges facing instructors and students by offering resources at every stage of the instructor workflow and student learning process, preparing students for success in the more challenging courses to follow.
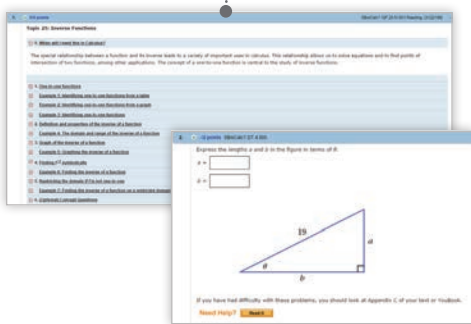
VALUABLE BENEFITS:

- Allows you to assign, collect, grade, and record homework assignments via the Web, and includes links to text-specific content, video examples, and problem-specific tutorials.
- Provides instant feedback to students and instructors.
- Unique problem types reduce student readiness gaps for calculus by offering algebra and trigonometry review outside of the classroom.
- Tools for Enriching Calculus (TEC) are interactive figures that support students in making the leap from algebraic expressions to deeper understanding of dynamic, 2-D and 3-D concepts.
- Includes YouBook, a customizable eBook with highlighting, note-taking, and search features, as well as links to multimedia resources.

LEARN MORE:

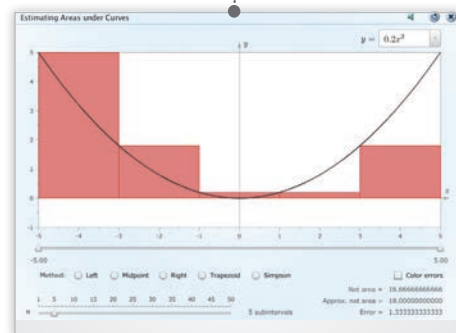www.cengage.com/ewa | www.webassign.net/cengage

QuickPrep modules and Stewart's Diagnostic Tests remediate precalculus skills.

Up to 50% of the exercises in each section are assignable as online homework problems.

Assignable TEC's elevate thinking and test conceptual understanding.

PERSONALIZED SERVICES: Engaged with you so you can engage with them.

You have more demands than ever on your time and we are here to help, providing ongoing training and support, customizing course materials to meet your specific goals, and sharing innovative classroom strategies through our in-house team of professional educators.

LEARN MORE: www.cengage.com/services

To request complimentary online review copies and for valuable information on digital supplements, pricing, previous editions, available bundles, changes to current editions and alternate formats, please visit **www.cengage.com/product/9781133109631**

Source Code: 15P-MA0082