Introduction to Software Technology

INVITATION TO

COMPUTER
SCIENCE

8TH EDITION

G. MICHAEL SCHNEIDER

JUDITH L. GERSTING
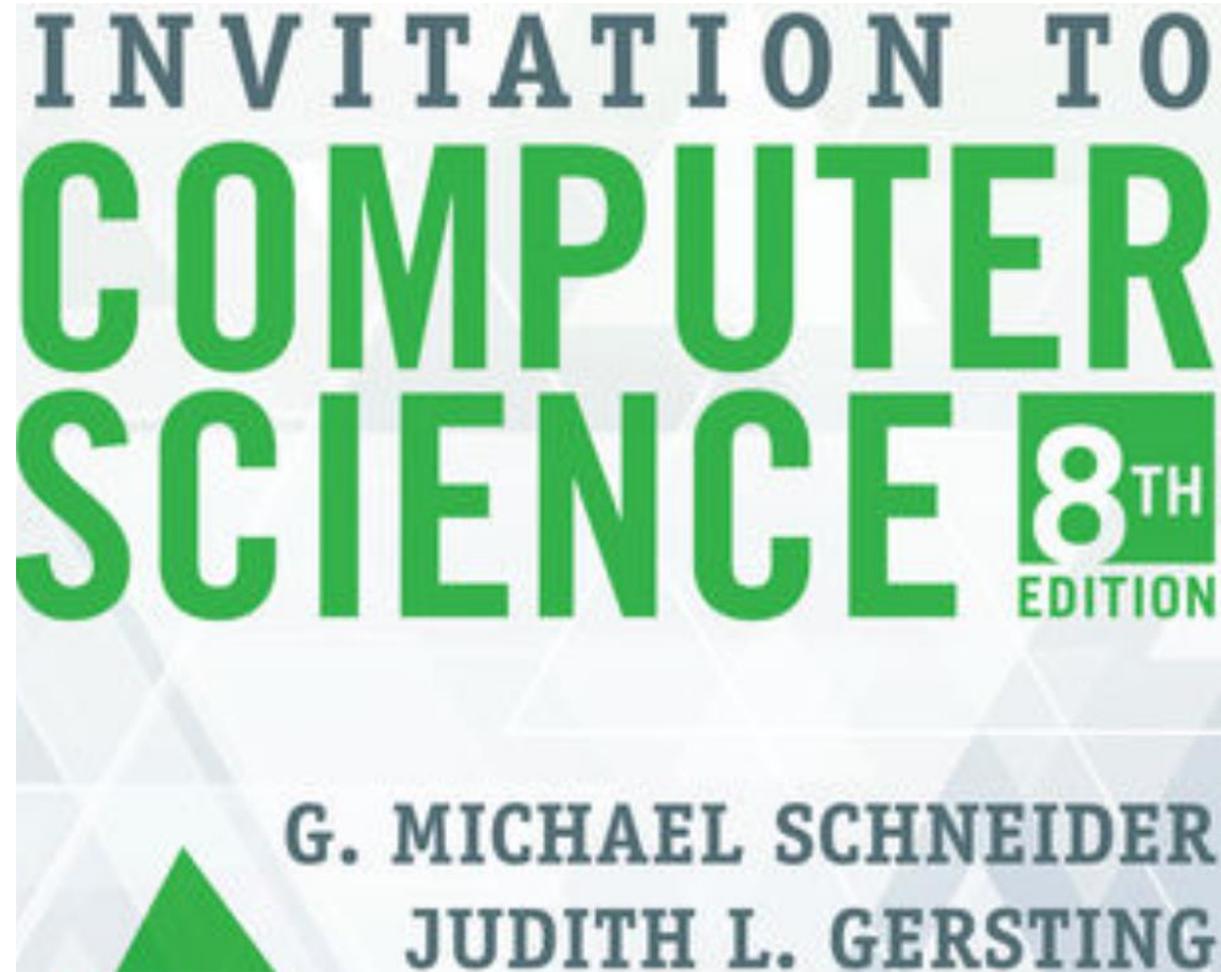
- Welcome To Your Course

  Read a brief introduction to the Computer Science course.

Welcome to the MindTap course for Invitation to **Computer Science, 8th Edition**. This course provides a contemporary overview of computer science. Using an algorithm-centered approach ideal for a first course, this non-language-specific approach introduces algorithms, hardware, virtual machines, software development, applications of computer, and social issues. Timely content and learning features addresses developing topics, such as privacy, drones, cloud computing, and net neutrality.

The course is organized into 6 Levels which looks at the algorithmic foundations of computer science and then moves upward to higher-level issues such as hardware, systems, software, applications, and ethics. Within these Levels, the course is organized into 17 Units. Readings, labs, and presentation slides support the lecture, while RSS Feed assignments keep you current on what's trending. Laboratory Experiences accompany most units and allow opportunity for hands-on practice. Coding IDE labs are included to allow you to write code in an interactive environment that can grade and provide real-time feedback on your work. Optional online language modules for C++, Java, Python C+, and Ada offer the flexibility of studying a specific programming language. The Review Questions, Exercises, and Challenge Work offer a deeper dive into the topics and offer a look into real-life scenarios that you could face in the field.

After working through the units, you'll have a comprehensive view of the discipline and can then make informed decisions about further study.

- **Getting Started with MindTap Video Series**
  ,
  3 activities

- Getting Started with the InQuizitive Test Generator for Instructors Video

  Watch this instructional video to learn more about using the IQ test generator.

- Getting Started with the Lab Manual

  Read instructions and the requirements necessary on completing the Laboratory Experiences.

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  Download the files needed to complete the Laboratory Experiences for each unit.

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  COUNTS TOWARDS GRADE

  0%submitted

  - -avg score

  100points

  Check your understanding before you begin the course.

- **Unit 1: An Introduction to Computer Science**

  ,
  12 activities

- **Level 1: The Algorithmic Foundations of Computer Science**

  ,
  31 activities

  - o **Level 1: Introduction**
  - o **Unit 2: Algorithm Discovery and Design**
  - o **Unit 3: The Efficiency of Algorithms**

- **Level 2: The Hardware World**

  ,
  27 activities

  - o **Level 2: Introduction**
  - o **Unit 4: The Building Blocks: Binary Numbers, Boolean Logic and Gates**
  - o **Unit 5: Computer Systems Organization**

- **Level 3: The Virtual Machine**

  ,
  37 activities

- o **Level 3: Introduction**
- o **Unit 6: An Introduction to System Software and Virtual Machines**
- o **Unit 7: Computer Networks and Cloud Computing**
- o **Unit 8: Information Security**

- **Level 4: The Software World**

  ,
  55 activities

  - o **Level 4: Introduction**
  - o **Unit 9: Introduction to High-Level Language Programming**
  - o **Unit 10: The Tower of Babel: Programming Languages**
  - o **Unit 11: Compilers and Language Translation**
  - o **Unit 12: Models of Computation**

- **Level 5: Applications**

  ,
  46 activities

  - o **Level 5: Introduction**
  - o **Unit 13: Simulation and Modeling**
  - o **Unit 14: Ecommerce, Databases, and Data Science**
  - o **Unit 15: Artificial Intelligence**
  - o **Unit 16: Computer Graphics and Entertainment: Movies, Games, and Virtual Communities**

- **Level 6: Social Issues in Computing**

  ,
  10 activities

  - o **Level 6: Introduction**
  - o **Unit 17: Making Decisions about Computers, Information, and Society**