



# Fundamentals of Computer-Aided Engineering

By Benny Raphael, Ian F. C. Smith

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It is vital that today's engineers work with computer-based tools and techniques. However, programming courses do not provide engineering students with the skills that are necessary to succeed in their professional career. Here, the authors propose a novel, practical approach that encompasses knowledge assimilation, decision-making capabilities and technical agility, together with concepts in computer-aided engineering that are independent of hardware and software technologies.

This book:

- Outlines general concepts such as fundamental logic, definition of engineering tasks and computational complexity
- Covers numerous representation frameworks and reasoning strategies such as databases, objects, constraints, knowledge systems, search and optimisation, scientific computation and machine learning
- Features visualization and distribution of engineering information
- Presents a range of IT topics that are relevant to all branches of engineering
- Offers many practical engineering examples and exercises

*Fundamentals of Computer Aided Engineering* provides support for all students involved in computer-aided engineering courses in civil, mechanical, chemical and environmental engineering. This book is also a useful reference for researchers, practising engineers using CAE and educators who wish to increase their knowledge of fundamental concepts.

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## **Fundamentals of Computer-Aided Engineering** By Benny Raphael, Ian F. C. Smith Bibliography

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## **Editorial Review**

### **Review**

"...covers numerous representation frameworks and reasoning strategies...presents a range of IT topics that are relevant to all branches of engineering..." (Engineering, March 2004)

### **From the Back Cover**

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