

PROBLEM SOLVING RESOURCES FOR COMMUNITY COLLEGES: AN ANNOTATED BIBLIOGRAPHY

PRINT PUBLICATIONS:

Patterns of Problem Solving, by Moshe F. Rubinstein and Iris R. Firstenberg (Prentice Hall; 2nd edition, January 16, 1998)

Audience: Post-secondary science and technology students

Cost: \$101

For use as a supplement or core text in courses which recognize problem solving as an important basis for science education. Broad in scope and comprehensive in coverage, this classic exploration of the concepts and methods of problem solving offers a balanced examination of qualitative tools, quantitative tools, and human values — and their role in the problem solving process. The text includes a chapter on assessing students' problem-solving skills.

<http://search.barnesandnoble.com/booksearch/isbninquiry.asp?r=1&EAN=9780131227064>

Conceptual Blockbusting: A Guide to Better Ideas, by James L. Adams (Perseus Books Group; 4th edition, October 23, 2001)

Audience: General readership of professionals and students

Cost: \$16.95

A popular guide to creative thinking and problem solving, integrating insights from the worlds of psychology, engineering, management, art, and philosophy. James Adams identifies the key blocks (perceptual, emotional, cultural, environmental, intellectual, and expressive) that prevent students and others from realizing the full potential of their minds. Employing unconventional exercises and other interactive elements, Adams demonstrates how to overcome these blocks, embrace alternative ways of thinking about complex problems, and think in more creative ways.

http://www.amazon.com/Conceptual-Blockbusting-Guide-Better-Ideas/dp/0738205370/ref=sr_1_1?ie=UTF8&s=books&qid=1205203642&sr=1-1

Strategies for Creative Problem Solving, by H. Scott Fogler and Steven E. LeBlanc (Prentice Hall PTR; 2nd edition, September 8, 2007)

Audience: Post-secondary students, new professionals, and practitioners

Cost: \$45

This hands-on guide, which includes a CD-ROM, examines the components of problem solving, and presents a series of graduated exercises — drawn from a variety of industrial applications — to familiarize, reinforce, challenge, and stretch students creatively in the problem solving process. Leads readers step-by-step through a complete problem-solving process — from encountering an ill-defined problem to planning a robust approach, carrying it through to a viable solution, and then evaluating what has been accomplished

http://www.amazon.com/Strategies-Creative-Problem-Solving-2nd/dp/0130082791/ref=sr_1_1?ie=UTF8&s=books&qid=1205203939&sr=1-1

See related supplementary resources for free below.

SOFTWARE/ONLINE:

Strategies for Creative Problem Solving: Interactive Computer Modules, by H. Scott Fogler and Steven E. LeBlanc

Audience: Supplementary resource for students and instructors

Cost: FREE

These Interactive Computer Modules (ICMs) are contained on the *Strategies for Creative Problem Solving* CD-ROM, but are also freely available to download from the website. The ICMs offer participatory problem solving activities for students, intended to supplement the text. The website also includes summary notes from each text chapter and sample problems.

<http://www.engin.umich.edu/scps/index.htm>

See related textbook in print publications above.

Problem-Based Learning (PBL) Clearing House (University of Delaware)

Audience: Educators of post-secondary students

Cost: FREE

PBL Clearinghouse: a collection of problems and articles to assist educators in using problem-based learning. The problems and articles are peer reviewed by PBL experts in the disciplinary content areas. Teaching notes and supplemental materials accompany each problem, providing insights and strategies that are innovative and classroom-tested. Access to the Clearinghouse collection is limited to educators who register via an online application, but access is free and carries no obligation.

<https://chico.nss.udel.edu/Pbl/>

General Education Outcomes Rubric (Sinclair Community College)

Audience: Community college educators

Cost: FREE

This rubric of General Education Outcomes was developed for Sinclair Community College in Dayton, Ohio. It is available from MERC online, the Manufacturing Education Resource Center. These measurable outcomes relate to five general education areas in which students are expected to have competency by the completion of an associate degree. One section of the rubric (on Page 5) is called, "Problem Solving and Critical Thinking." This rubric could be used not just for general education outcomes but could be modified for use in a specific problem-solving course.

http://www.merconline.net/resources/Gen_Ed_Rubric.pdf

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