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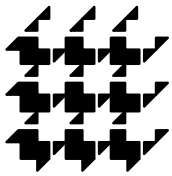
Center for Discrete Mathematics &
Theoretical Computer Science



DIMACS EDUCATIONAL MODULES SERIES

MODULE 03-2
Facility Location Problems
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R. S. (Chuck) Tiberio [1]
Wellesley High School
Wellesley, MA 02481
email: tiberio@tiac.net

DIMACS Center, CoRE Bldg., Rutgers University, 96 Frelinghuysen Road, Piscataway, NJ 08854-8018
TEL: 732-445-5928 • FAX: 732-445-5932 • EMAIL: center@dimacs.rutgers.edu
Web: http://dimacs.rutgers.edu/

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Module Description Information

- **Title:**

  Facility Location Problems

- **Author(s):**

  R. S. (Chuck) Tiberio

- **Abstract:**

  This module investigates the placement of emergency and service facilities in a network of towns connected by roads. Criteria for placement and algorithms for implementation are also discussed.

- **Informal Description:**

  Sometimes commonly used public facilities (like a fire station or a shopping mall) are built where there is available land. Perhaps it would be better to build them in places which would maximize their use by the general public or facilitate their use by emergency personel. This module will address such questions and discuss possible methods of solution.

- **Target Audience:**

  The intended target audience is high school seniors of average mathematical ability who are taking a course in discrete mathematics. However the module would certainly be appropriate for college students in a similar course.

- **Prerequisites:**

  Students should be comfortable with the concept of graph and using a graph to model a physical situation. They should be familiar with basic matrix operations. Ability to use a TI-83 calculator would also be helpful.

- **Mathematical Field:**

  Graph Theory (including weighted graphs)
  Elementary Matrix Operations

- **Applications Areas:**

  The author's intended application for this module is pedagogical. A student with a basic understanding of graphs and matrices can now see how these can be applied in a "real world" setting.

- **Mathematics Subject Classification:**

  Primary Classification: 90B80, 05C85

- **Contact Information:**

  R. S. Tiberio
  Wellesley High School
  50 Rice Street
  Wellesley, MA 02481
  email: tiberio@tiac.net

- **Other DIMACS modules related to this module:**

  None at this time