2014-2015

Engineering

Associate in Science Degree

Program Requirements.....21
Additional Requirements.....9
General Education/MnTC 30
TOTAL CREDITS.....60

Program Information:
Students may take the first half of a bachelor's degree in engineering at Anoka-Ramsey Community College. Coursework transfers to four-year baccalaureate engineering programs. Students should use the transfer table (on page 155) in selecting courses based on the requirements of the transfer institution. Students should also plan a program beyond the minimum degree requirements listed in order to transfer into the junior year of their engineering program. For assistance in program planning, or to explore additional transfer options, students should schedule a time to meet with an academic advisor. This degree may transfer in part or in its entirety to baccalaureate institutions. Students should meet with a representative of the transfer institution when planning their program. For additional information, visit our Web site at http://www.AnokaRamsey.edu.

Program Goals:
By completing this program, students will achieve the following learning goals:

1. Comprehend and apply fundamental engineering concepts;
2. Understand and apply the engineering design process;
3. Present clear and accurate solutions with respect to mathematics and units of measure.

Developmental Courses:
Preparatory courses may be needed by some students in the areas of English, reading, mathematics, computer science, keyboarding, and chemistry. These courses may (or may not) transfer. Courses numbered less than 1000 will not apply toward this degree. Other courses may apply as elective credit at ARCC.

Completion Requirements:

- A minimum of 60 semester credtis numbered 1000 or above.
- A minimum cumulative grade point average (GPA) of 2.0 in courses numbered 1000 or above at ARCC.
- Satisfy residency requirements. See page 27.
- Completion of specific degree requirements. To receive your diploma, you must apply to graduate.
- The requirements of this program are subject to change without notice

NOTE: Go to page 155 to see course transferability between Anoka-Ramsey CC and UMD, UM-TC, SCSU and MSU.

Program Requirements: 21 credits

- ☐ ENGR 1100 Introduction to Engineering.....2
- ☐ MATH 2210♦ Differential Equations.....4
- ☐ MATH 2220♦ Multivariable Calculus & Vector Analysis.....5
- ☐ CHEM 1061♦ Principles of Chemistry I.....4
- ☐ CSCI 1106♦ Fundamentals of Computer Science I.....4

Select one of the following courses:

- ☐ MATH 2200♦ Linear Algebra.....4
- ☐ MATH 2201♦ Introductory Linear Algebra.....2

Students transferring to the University of Minnesota should take MATH 2201

Additional Requirements 9 credits

Select a miniumum of 9 credits from the following list of courses. Use the transfer table found on the Web to select courses that meet the transfer institution's requirement. In order to transfer into the junior year, plan a program beyond the minimum degree requirements. For more information visit http://webs.anokaramsey.edu/engineering/transfer_program.htm.

ENGR 1111♦ Engineering Graphics.....3
ENGR 2218♦ Digital Logic *OR* ENGR 2221♦ Digital Fundamentals.....2-4
ENGR 2219♦ Linear Circuits I.....4
ENGR 2240♦ Thermodynamics.....3
ENGR 2241♦ Statics.....3
ENGR 2242♦ Dynamics.....3
ENGR 2243♦ Mechanics of Materials.....3
CHEM 1062♦ Principles of Chemistry I.....4
CHEM 2061♦ Organic Chemistry I.....5
CHEM 2062♦ Organic Chemistry II.....5
CSCI 1107♦ Fundamentals of Computer Science II.....4
CSCI 2253♦ Assembly Language Programming.....4
MATH 2100♦ Discrete Mathematics.....4

General Education/MnTC Requirements 30 credits

Students must complete at least 30 credits from the Minnesota Transfer Curriculum (MnTC) including all courses listed. You must complete at least one course in 6 of the 10 goal areas. One course may satisfy more than one area, but the course credits may be counted only once.

- ☐ 1. **Communications**
  - ☐ ENGL 1121♦.....4
- ☐ 2. **Critical Thinking**
- ☐ 3. **Natural Science**
  - ☐ PHYS 1327♦.....6
  - ☐ PHYS 1328♦.....6
- ☐ 4. **Mathematical/Logical Reasoning**.....
  - ☐ MATH 1400♦.....5
  - ☐ MATH 1401♦.....5
- ☐ 5. **History/Social/Behavioral Sciences**
- ☐ 6. **The Humanities and Fine Arts**
- ☐ 7. **Human Diversity**
- ☐ 8. **Global Perspective**
- ☐ 9. **Ethical/Civic Responsibility**
- ☐ 10. **People and the Environment**

♦ ***Course has a prerequisite. Prerequisites are listed on the course schedule and in the ARCC Catalog Course Descriptions pages.***

NOTE: You are encouraged to contact an academic advisor,at 763-433-1230 for course planning assistance and information about transfer credit evaluation and transfer options.

Anoka-Ramsey Community College
Cambridge • Coon Rapids