

RCTC PROGRAM PLAN

ENGINEERING BROAD FIELD

Associate of Science

I. MINNESOTA TRANSFER CURRICULUM (MnTC)/

GENERAL EDUCATION REQUIREMENTS.....34 CREDITS

Complete at least 30 credits in courses from the Minnesota Transfer Curriculum (MnTC), including all courses listed. You must complete at least one course in six of the ten goal areas.

GOAL 1: WRITTEN AND ORAL COMMUNICATION4 CR

ENGL 1117, Reading and Writing Critically I, 4 cr

GOAL 3: NATURAL SCIENCES14 CR

CHEM 1127, Chemical Principles I, 4 cr
PHYS 1127, Classical Physics I, 5 cr
PHYS 1128, Classical Physics II, 5 cr

GOAL 4: MATHEMATICS/LOGICAL REASONING.....10 CR

MATH 1127, Calculus I, 5 cr
MATH 1128, Calculus II, 5 cr

GOAL 5: HISTORY AND THE SOCIAL AND BEHAVIORIAL SCIENCES3 CR

Credits from MnTC Goal 5

GOAL 6: HUMANITIES - THE ARTS, LITERATURE AND PHILOSOPHY3 CR

Credits from MnTC Goal 6

GENERAL EDUCATION ELECTIVE.....4 CR

Credits from MnTC Goal 1-6 (See an RCTC counselor for appropriate choices)

II. PROGRAM CORE REQUIREMENTS.....12 CREDITS

ENGR 1101, Introduction to Engineering, 2 cr
MATH 2237, Multivariable and Vector Calculus, 5 cr
MATH 2238, Differential Equations and Linear Algebra, 5 cr

III. RESTRICTED ENGINEERING ELECTIVES.....14 CREDITS

Consult with an advisor or counselor to determine course selections, which are appropriate for your transfer institution. A minimum of 4 courses and 14 credits from one of the specialty areas should be chosen. See also www.rctc.edu/program/engineering/ for additional advising resources.

CHEM 1128, Chemical Principles II, 4 cr
CHEM 2127, Organic Chemistry I, 4 cr
CHEM 2128, Organic Chemistry II, 4 cr
COMP 2243, Programming and Problem Solving, 4 cr
ENGR 1152, Logic Design, 4 cr
ENGR 2211, Statics, 3 cr
ENGR 2212, Dynamics, 3 cr

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ENGR 2213, Linear Circuit Analysis I, 4 cr
ENGR 2214, Linear Circuit Analysis II, 4 cr
ENGR 2221, Deformable Body Mechanics, 3 cr
ESCI 1114, Physical Geology, 4 cr
MATH 2350, Introduction to Mathematical Statistics, 4 cr

TOTAL60 CREDITS

PROGRAM OUTCOMES:

Upon completion of the Engineering Broad Field program at RCTC, students will achieve the following core competencies:

- Apply algebra, trigonometry, and calculus to solve the equations generated by engineering problems.
- Apply basic physics principles such as force and energy to the analysis of practical engineering situations.
- Solve a problem by creating an appropriate diagram, identifying the essential physical variables, using physics principles to formulate equations, solving for the desired quantities, and thinking critically about the answers and whether they are reasonable.
- Write scientific reports detailing experimental procedures, results, and conclusions.
- Exhibit the ability to work collaboratively to achieve a common goal.

ADDITIONAL NOTES:

This degree, as part of the Engineering Broad Field agreement, has an articulation agreement with Minnesota State University, Mankato; St. Cloud University; Winona State University; University of Minnesota; University of Minnesota, Duluth and any System college approved to offer the Associate of Science in Engineering Broad Field degree program.

MORE INFORMATION REQUIREMENTS:

Note that:

- Completion of the Associate of Science in Engineering Broad Field degree does not guarantee admission to a baccalaureate degree program.
 - Students must meet university requirements and degree program admission requirements.
 - Baccalaureate engineering degree programs may have limited enrollment capacity with seats available on a competitive basis.
- Students accepted into a university must fulfill the baccalaureate program graduation requirements.

Revised: 11/13/2018

Implementation: Spring 2019