RCTC PROGRAM PLAN

BIOINFORMATICS FOUNDATIONS

Associate of Science

I. MINNESOTA TRANSFER CURRICULUM (MNTC)/ GENERAL EDUCATION REQUIREMENTS.....40 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 COMMUNICATION .....11 CR

COMM 1114, Fundamentals of Public Speaking, 3 cr
ENGL 1117, Reading and Writing Critically I, 4 cr
ENGL 1118. Reading and Writing Critically II, 4 cr

GOAL 3: NATURAL SCIENCES .....12 CR

BIOL 1220, General Biology I, 4 cr
BIOL 2300, Genetics, 4 cr
CHEM 1127, Chemical Principles I, 4 cr

GOAL 4: MATHEMATICS/LOGICAL REASONING.....3 CR

MATH 1119, Applied Calculus for Business Majors, 3 cr **OR**
MATH 1127, Calculus I, 5 cr

GOAL 5: HISTORY AND THE SOCIAL AND BEHAVIORIAL SCIENCES .....6 CR

Choose a minimum of two credits from two different areas from MnTC Goal 5

GOAL 6: HUMANITIES - THE ARTS, LITERATURE AND PHILOSOPHY .....6 CR

Choose a minimum of two credits from two different areas from MnTC Goal 6

MnTC ELECTIVES: .....2 CR

II. PROGRAM CORE REQUIREMENTS.....19 CREDITS

COMP 1150, Computer Science Concepts, 3 cr
COMP 2243, Programming & Problem Solving, 4 cr
COMP 2247, Algorithms and Data Structure, 4 cr
MATH 2218, Discrete Mathematics, 4 cr
MATH 2350, Introduction to Mathematical Statistics, 4 cr

III. OPEN ELECTIVES.....1 CREDIT

Physical Education course recommended

TOTAL .....60 CREDITS

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PROGRAM OUTCOMES:

Upon completion of the Computer Science program at RCTC, students will achieve the following outcomes:

- Apply mathematical foundations, algorithmic principles, and computer science concepts to analyze and design software solutions.
- Design, implement and validate software using Java in conjunction with graphical user interface.
- Apply current design techniques including the effective application of data structures, recursion, and object-oriented technologies for software solutions.
- Evaluate the efficiency of software algorithm using Big O notation.
- Develop logical resonating and problem-solving skills.
- Work as part of a team to analyze, design and implement software solutions.

Revised: 11/13/2018
Implementation: Spring 2019