2014-2015

Applied Engineering Technology-Biomedical Design & Manufacturing

Associate in Science Degree

Program Requirements	30
General Education/MnTC	30
TOTAL CREDITS	60

Program Information:

This program will prepare students for a career in Biomedical Device Manufacturing at either a technician level, or to advance to an applied engineering level. Drawing heavily on industry representative feedback, this unique program of study includes an introduction to biomedical manufacturing technology and industry-specific software and hardware training. Along with a strong general education core including a solid science and math foundation, students will participate in coursework that strengthens their communication and critical thinking/problem-solving abilities. "Hands-on" learning and field experiences with a local biomedical company will help maximize the employment opportunities for program graduates. 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 about our programs, visit our Web site at http://www.anokaramsey.edu/BMED.

Program Goals:

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

1. Apply mathematical, physical and biological foundations to the solution of biomedical engineering problems.
2. Incorporate techniques, skills, and tools necessary for achieving robust engineering solutions.
3. Develop a comprehensive awareness of constraints that challenge the design and manufacture of biomedical devices.
4. Demonstrated capacity to participate on multi-disciplinary teams to achieve desired results.

Developmental Courses:

Some students may need preparatory courses in the areas of English or Mathematics. Courses numbered below 1000 will not apply toward this degree.

Completion Requirements:

- A minimum of 60 semester credits in courses numbered 1000 or above.
- A minimum cumulative grade point average (GPA) of 2.0 in courses numbered 1000 or above at ARCC.
- A minimum grade of C must be earned in all program requirements.
- Satisfy residency requirements. See page 27.
- Completion of specific degree requirements. Students may earn only one AA degree regardless of emphasis. To receive your diploma, you must apply to graduate.
- The requirements of this program are subject to change without notice.

Program Requirements — **30 credits**

☐ AENG	2225	Digital Electronics	3
☐ AENG	2230	Electromechanical Devices	3
☐ AENG	2235	Instrumentation & Control	3
☐ BMED	1100	Introduction to Biomedical Devices/Industry	2
☐ BMED	2100	Design & Manufacturing in the Medical Device Industry	3
☐ BMED	2200	Introduction to Medical Device Regulations Ethics	3
☐ BMED	2297*	Field Experience & Seminar	4
☐ BMED	2300	Introduction to Quality Assurance	3
☐ BMED	2520♦	Technical Writing for Regulated Industries	3
☐ ENGR	1111♦	Engineering Graphics	3

****It is recommended that all biomedical courses be completed prior to taking BMED 2297 Field Experience & Seminar. Permission of Program Director required for this course.***

General Education/MnTC Requirements: — **30 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. One course may satisfy more than one emphasis area, but the course credits may be counted only once.

☐ 1. **Communication**
- ☐ ENGL 1121♦ 4
- ☐ CMST 2251 3

☐ 2. **Critical Thinking** (*met by ENGL 1121*)

☐ 3. **Natural Science**
- ☐ BIOL 1104 4
- ☐ PHYS 1317♦ 4

☐ 4. **Mathematical/Logical Reasoning**
- ☐ MATH 1110♦ 3
- ☐ MATH 1200♦ 3
- ☐ MATH 1201♦ 4

☐ 5. **History/Social/Behavioral Sciences**
- ☐ PSYC 1110 4

☐ 6. **Humanities/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
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