CENTER FOR INNOVATIVE TECHNOLOGIES
MASTER COURSE DOCUMENT

BMT 161 Biomedical Instrumentation 1

Course Description: A course on the role of the biomedical engineering technician, and fundamentals of systems and device maintenance. Topics include: hospital organization and regulations, professional certifications, safety, medical device maintenance, and technology management.

Prerequisites(s): AFM 090 or appropriate placement test score **Corequisite(s):** No corequisite

Lecture Hours: 3	Lab Hours: 3	Credit Hours: 4
Lab Fee: 105	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	□ Classroom
Semesters Offered: □ Fall	□ Spring	□ Summer

Course Primary Text:

Title: Introduction to Biomedical Instrumentation	Edition: 2nd
Publisher: Prentice Hall ISBN -9781107185012	

Supplemental Materials:

Course Outcomes:

1	This course prepares the student to enter their first co-operative education experience. The student will learn the basics of biomedical instrumentation
2	The student will learn basic troubleshooting techniques
3	The student will perform entry-level preventative maintenance procedures

Course Topics:

	Course Topics (order of topics is subject to change)	Laboratory Assignments
Week 1	Hospital and CE department organization. Healthcare Technology Management (HTM). Chapter 3 BMET careers Related Program Outcomes Professional Organization membership Salary Survey	Introduction to BMET
Week 2		Introduction to Preventative Maintenance
Week 3	BMET position description Handouts Bb files Accreditation and Accreditation Organizations Professional Organizations and Professional Publications and their role in the	Certification
Week 4		Professional Publications

	profession Professional Registrations and Certifications Emerging Roles of the BMET In House BMET responsibilities	
Week 5	Regulations and Regulatory Bodies	Emerging Issues
Week 6	Chapter 4 Measurement MEMP AAMI/ACCE/HIMSS Joint Venture Healthcare Technology Management in a Global Economy What is Medical Technology and what should it bring to healthcare?	PM Procedure of Monitor
Week 7	Computer Utilization Electrical Safety	Electrical Safety Analyzers
Week 8	Three Wire Electrical Systems Patient Safety	ECG Simulator Lab
Week 9	Electrodes / Sensors / Transducers Chapters 4 and 6 Man / Machine interface	Electrode Connection Calculations
Week 10	Electrode Problem for Skin Types	Electrodes
Week 11	BMET Project introduction BMET You Tube Channel	You Tube Project
Week 12		Medfusion Syringe Pump
Week 13	Advanced topics in Electrical Safety	Electrical Safety
Week 14		Electrical Safety
Week 15	Chemistry in Biomed and applications Lab Projects Description Class Hours Designing a program for the future Professional Organizations Outsourcing	Chemistry in Biomed Exam

Methods of Evaluation/Assessment

Various Labs and Homework as assigned: 10%
Tests/Quizzes: Description
Weight 3 Tests at 30% each/All are comprehensive 90% (4 tests / lowest dropped / no make-ups allowed)
Computer Usage: Students are required to use Microsoft Office in the course
Written Communication: Students will be graded on written communication in homework and laboratory assignments Oral Communication: Students will be required to present oral reports pertaining to laboratory projects. Student groups will report out on project status Library Usage: Students will be required to do library and on-line research in the course

Course Keeper: Ralph Whaley Date Completed: April 5, 2019