

## Course Syllabus

### Second Semester - 2013/2014

#### General Information

Course name	Course code	Credits	Contact hours
Electrical Skills	BMTS245	1 lecture+ 1 lab	1 lecture+ 2 lab

#### Instructors/ Coordinators

	Instructors	Coordinator
Name	Mr. Anandh Bose	Mr. Jamel Smida
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#### Text Book

Title	Electronic Techniques: Shop Practices and Construction
Author/Year	Robert S. Villanucci, Alexander W. Artgis, William F. Megow / 2001

#### Supplemental materials

Recommended Textbooks and Reference Material	
Title	Basic Electronic Troubleshooting for Biomedical Technicians
Author/Year	Nicholas Cram, Selby Holder / 2010
Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)	
Web sites	<a href="http://www.technologystudent.com/elec1/elecex.htm">www.technologystudent.com/elec1/elecex.htm</a>
	<a href="http://www.wikihow.com/Read-a-Multimeter">www.wikihow.com/Read-a-Multimeter</a>

#### Specific Course Information

<b>a. Brief description of the content of the course (Catalog Description)</b>
Throughout this course, student will know the basic hand tools, common electrical instruments used in design and production of electrical circuits. Student will learn circuit construction techniques starting by block and schematic diagrams till the production of the circuit. Student will also acquire basic skills in maintenance of electronic circuits, using advanced test equipment, and component testing and continuity checks, in order to find and fix faulty components in the biomedical instrument
<b>b. Prerequisites (P) or Co-requisites (C)</b>
None
<b>c. Course type (Mandatory or Elective)</b>
Mandatory

### Specific Goals

#### a. Specific outcomes of instruction

By the end of this course, the student should be able to:

- Recognize the basic hand tools and common electrical instruments used in design and production of electrical circuits. (a)
- Apply different measurement tools efficiently. (c)
- Differentiate and compare different electronic components. (c)
- Test and check the integrity of the components. (c)
- Choose the correct components for design of circuit and analyze it by selecting proper measurement tools. (d)
- Design and assembly any simple electrical and electronic circuits. (d)
- Participate in group project. (e)

#### b. Student outcomes addressed by the course

a	b	c	d	e	f	g	h	i	j	k
✓		✓	✓	✓						

### Brief list of topics to be covered

Topics	No of Weeks	Contact hours
Introduction	1	3
Basic hand tools in electronics	2	6
Analog and Digital multimeters	2	6
Operation of Cathode ray Oscilloscope – amplitude and time period	1	3
Basic electronic components: Resistor, capacitor, inductor, transformer, diodes, transistors and testing using millimeter	3	9
Introduction to IC	1	3
Electronic circuits design	1	3
Fabrication methods of electronic circuits	2	6
Printed circuit Board	2	6