[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

This course will bring the understanding basic principles and phenomena in the area of medical diagnostic instrumentation and theoretical and practical preparation enabling students to maintain medical instrumentation. Students will be able to define basic medical terms and physical values that can be handled by medical instrumentation and the methods and implementation of electrical and non-electrical medical parameters diagnostic. Topics such as demonstrating the measuring of basic medical parameters, calculation of basic parameters of the equipment for using in electro diagnostic and electro therapy and the recommendation problem solving and service procedures for electrical equipment will also be discussed. Students will find useful knowledge on how to apply safety standards and select disposal method and procedures for electrical diagnostic equipment.

2. Course Goals and Objectives (Approximately 100 words)

This course contributes to the following Program Learning Outcomes:
1. In-depth understanding of specialist bodies of knowledge within the engineering discipline.
2. Discernment of knowledge development and research directions within the engineering discipline.
3. Application of established engineering methods to complex engineering problem solving.
4. Fluent application of engineering techniques, tools and resources.

On completion of this course you should be able to:
- Compare and evaluate different medical instruments
- Design and customise the electronics part for assistive technologies
- Analyse, design and test the electronics part for diagnostic instruments
- Communicate findings through written reports

3. Textbook (Title, Author, Publisher, Year of Publication, etc.)

Non-Invasive Instrumentation and Measurement in Medical Diagnosis, Second Edition (Biomedical Engineering) 2nd Edition by Robert B. Northrop (Author)

Physics and Instrumentation of Diagnostic Medical Ultrasound 1st Edition by Peter Fish (Author)

4. Reference

Noninvasive Instrumentation and Measurement in Medical Diagnosis (Biomedical Engineering) 1st Edition by Robert B. Northrop (Author)

5. Course Requirements and Grades

examination = 70
assignment = 10
C.A.T. = 20

Total = 100

6. Course Calendar

Week	Main Content
1	Basic Measurement system 1/3
2	Basic Measurement system 2/3
3	Basic Measurement system 3/3
4	IMAGING EQUIPMENTS (xray machine)
5	IMAGING EQUIPMENTS (Computed Tomography/ CT)
6	IMAGING EQUIPMENTS (Magnetic Resonance Imaging/MRI)
7	C.A.T.
8	IMAGING EQUIPMENTS (Ultrasonic imaging systems and thermographic e
9	Flow meters
10	PATIENT MONITORING SYSTEMS 1/2
11	PATIENT MONITORING SYSTEMS 2/2
12	AUDIO AND VISUAL EQUIPMENTS 1/2
13	AUDIO AND VISUAL EQUIPMENTS 2/2
14	EXAMINATION