**BACHELOR OF SCIENCE MICROPROCESSOR TECHNOLOGY and INSTRUMENTATION**

**INTRODUCTION**

With over 40 years of existence and experience, the Department has continued to address the question of technologies which are derivatives of the subject and its related disciplines that are essential for Kenya to achieve its goal of industrialization by the year 2030.

The B.Sc. in Microprocessor Technology and Instrumentation Program was established in conjunction with the Industrial Electronics Unit to provide avenue for further professional training for secondary, high school or college graduates as well as professionals who meet the normal University of Nairobi entrance requirements. The new revamped and improved program has taken into account the diverging needs in technology today resulting in the following areas of specialization:

- *Applied Physics*
- *Computing*
- *Industrial Electronics*
- *Biomedical & Radiometric Instrumentation*
- *Telecommunications*

The program covers Eight Regular University of Nairobi semesters with a period for Industrial Attachment.

**ENTRY REQUIREMENTS**

Standard University of Nairobi Admission requirements apply.

- In addition, a MINIMUM of C+ (KCSE) or Principal Pass (A-Level) in Physics/Physical Science and Mathematics will be required
- Diploma holders with a Pass in Computer Studies, Science or Engineering related fields from a recognized institution will be considered.

**COURSES OFFERED**

**1st YEAR**

- CCS 010 - HIV/AIDS
- SPH 101 - Mechanics I
- SPH 102 - Electricity and Magnetism I
- SPH 103 - Waves and Optics
- SPH 105 - Mathematics
- SPH 106 - Introduction to Computers
- SPH 108 - Information Systems Analysis & Design
- SDP 109 - Introduction to Operating Systems
- SPH 110 - Communication Skills
- SPH 111 - Entrepreneurship
- SPH 113 - Data Structures & Algorithms
- SPH 114 - Computing Laboratory I

**2nd YEAR**

- SPH 201 - Mechanics II
- SPH 202 - Electricity and Magnetism II
- SPH 203 - Structure and Properties of Matter
- SPH 204 - Mathematical Physics I
- SPH 206 - Quantitative Techniques
- SPH 207 - Data Communications
- SPH 208 - Digital Electronics
- SPH 210 - Introduction to Object Oriented Programming
- SPH 211 - Industrial Organization and Management
- SPH 212 - Electronic Devices, Circuits & Models
- SPH 213 - Electronic Laboratory I
- SPH 214 - Electronic Construction & Workshop Practice Techniques

**3rd YEAR**

- Register for a Total of 12 UNITS according to Area of Specialization
- **Core Courses:**
  - SPH 303 - Solid State Physics I
  - SPH 306 - Mathematical Physics II
  - SPH 316 - Advanced Electronics
  - SPH 337 - Signals & Systems
- **Electives:**
  - SPH 301 – SPH 311: Physics Electives
  - SPH 315 - Microprocessor architecture & systems
  - SPH 317 - Software Development
  - SPH 318 - Power and Industrial Electronics
  - SPH 319 - Microcomputer Interfacing
  - SPH 320 - Microcomputer Networking
  - SPH 321 - Control Systems
  - SPH 322 - Quantum Techniques
  - SPH 323 - Information Theory
  - SPH 324 - Operating Systems
  - SPH 325 - Optoelectronics & Photonics
  - SPH 326 - Applied Electronics & Nuclear Physics
  - SPH 327 - Radiation Physics
  - SPH 328 - Radiometric Instrumentation
  - SPH 329 - Microwave Theory & Devices I
  - SPH 330 - Microwave Theory & Devices II
  - SPH 331 - Antenna Theory & Radiowave Propagation
  - SPH 332 - Instrumental Analysis
  - SPH 333 - Thermal Physics
  - SPH 334 - Electronics Laboratory II
  - SPH 335 - Telecommunications Laboratory I
  - SPH 336 - Computing Laboratory II

**4th YEAR**

- Register for a Total of 12 UNITS according to Area of Specialization
- **Core Courses:**
  - SPH 419 - Quantum Electronics
  - SPH 422 - Signal recovery & Processing
  - SPH 424 - Industrial Project
- **Electives:**
  - SPH 401 – SPH 417: Physics Electives
  - SPH 418 - Power Electronics
  - SPH 421 - Computer Simulations
  - SPH 423 - Database Systems
  - SPH 425 - Image Processing
  - SPH 426 - Computer Security
  - SPH 427 - Distributed Systems
Tuition Fee is KSh.144,000/- per academic year (KSh.12,000.00 per unit).

Statutory Fees total KSh.30,500 annually. A refundable Caution Fee of KSh.10,000/- & a Library Deposit of KSh. 3,000/- are payable on registration.

Applicants from other East African countries should add 20% while those from outside the region should add 50% to the above figures.

Application forms can be downloaded at: http://www.uonbi.ac.ke/. Duly completed forms should be returned/sent to the Academic Registrar (Admissions). A standard application fee of KSh. 3,000/= is required for application processing.

For enquiries, Contact:
The Chairman, Department of Physics
OR The Coordinator, IEU, Department of Physics
UNIVERSITY OF NAIROBI
P.O. Box 30197- 00100 GPO, Nairobi, Kenya

Tel. No. 254-20-4447552
Fax No. 254-20-4449616
E-mail: physics@uonbi.ac.ke