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

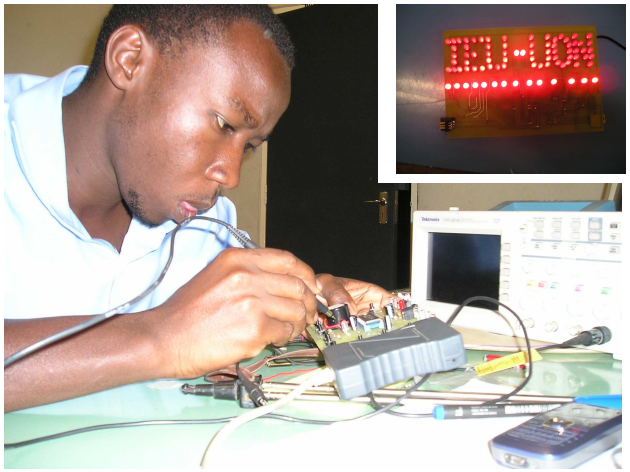
Standard University of Nairobi Admission requirements apply.

- 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 Ttotal 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

SPH 428 - Artificial Intelligence
SPH 429 - Neural Networks
SPH 430 - Industrial Electronics & Automation
SPH 431 - Analogue & Digital Communication Systems
SPH 432 - Satellite & Mobile Communication Systems
SPH 433 - Biomedical Instrumentation
SPH 434 - Radiotherapeutic & Imaging Techniques
SPH 435 - Applied Biophysics
SPH 436 - Biomedical & Radiometrics Laboratory
SPH 437 - Telecommunications Laboratory II
SPH 438 - Computing Laboratory III
SPH 439 - Compilers

FEE STRUCTURE

- 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.


Departmental Vacuum Coating Unit

HOW TO APPLY

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.


Exchange Student in the Department


Departmental Computer facilities

For enquiries, Contact:

The Chairman, Department of Physics
OR The Coordinator, IEU, Department of Physics
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Fax No. 254-20-4449616
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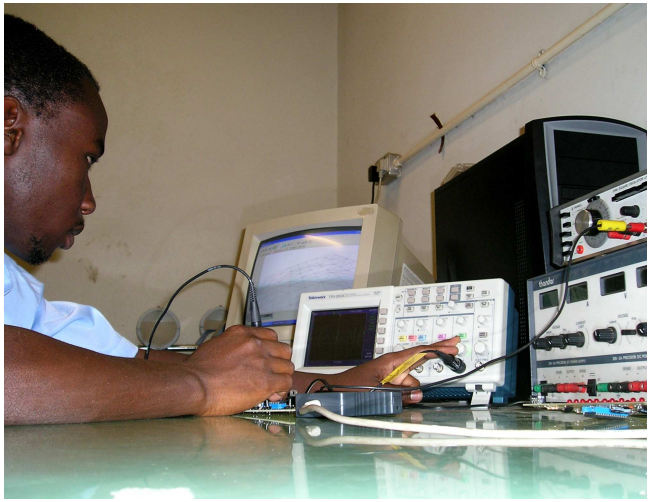
UNIVERSITY OF NAIROBI

DEPARTMENT OF PHYSICS
Industrial Electronics Unit

B.Sc.
Microprocessor Technology & Instrumentation



Empowered to INNOVATE