

**“Biomedical Engineering – Narrowing the gap between
medicine and engineering”**

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Brief History

2007 – TTHSI: MOH, MTEST & UTT

Develop and advance medicine and health sciences in Trinidad and Tobago and the wider Caribbean

Educational training objective: UTT, Johns Hopkins University, School of Medicine, Department of Biomedical Engineering (JHU-BME); School of Medical Science at the University of the West Indies, St. Augustine

UTT

THE UNIVERSITY OF TRINIDAD AND TOBAGO

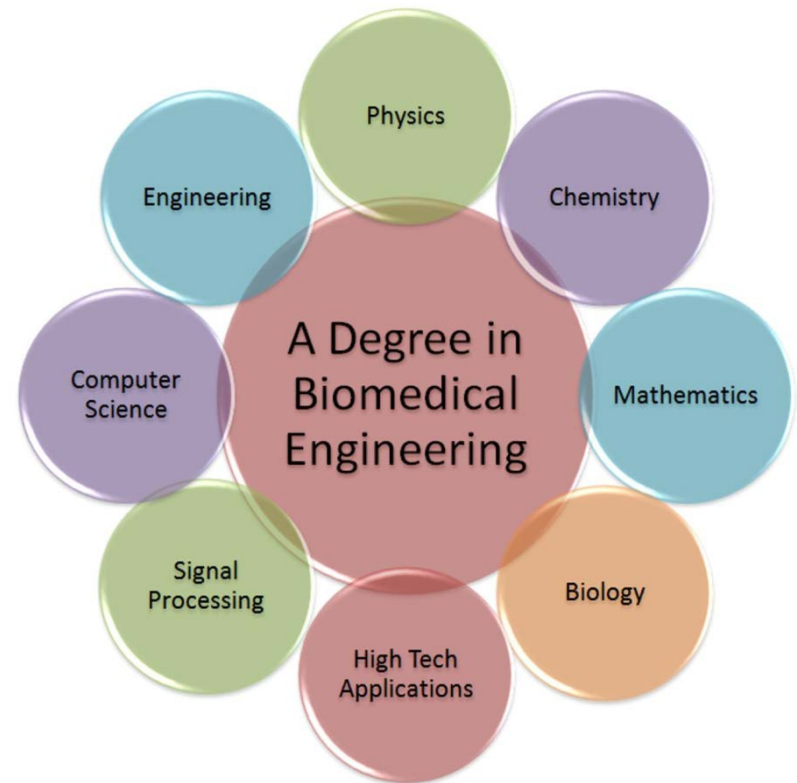


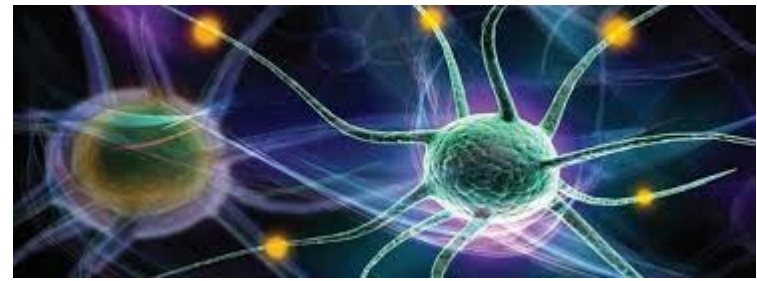
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BME - an emerging, interdisciplinary field

Biomedical engineers work at the intersection of engineering, the life sciences and healthcare.

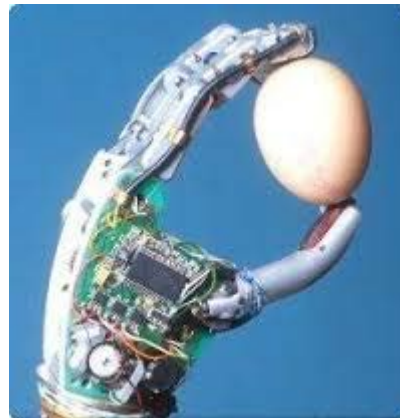
Use principles from applied science (including mechanical, electrical, chemical and computer engineering) and physical sciences (including physics, chemistry and mathematics) and apply them to biology and medicine.





Biomedical Engineering [BME] is the application of engineering principles, problem solving skills and design concepts to solve medical and biological problems for healthcare purposes (diagnosis, monitoring and therapy).

This field seeks to shorten the gap between engineering and medicine.



Core Areas of BME

This engineering field continues to advance the practice of medicine through diverse innovations in its following core discipline areas:



Bioinstrumentation
Biomaterials
Biomechanics
Cell, Tissue and Genetic Engineering
Clinical Engineering
Medical Imaging
Orthopaedic Bioengineering
Rehabilitation Engineering
Systems Physiology

Vision & Mission

UTT BME

“....TO FOSTER LOCAL & INTERNATIONAL Collaborations, Achieve and maintain accreditation and contribute meaningfully to the health sector of T&T....”

Strategic Goals of BME Academic Unit

- a) To commission a full teaching BME Laboratory to service both undergraduate training and post-graduate research.
- b) To foster collaborations with local health organizations [including the Ministry of Health of Trinidad and Tobago] to facilitate student training and create job opportunities
- c) To foster collaborations with foreign universities to enrich research capabilities for staff and students
- d) To initiate a Diploma Programme for Biomedical Equipment Technicians, to fill vacancies in local hospitals and medical institutions at the technician's level.
- e) To assist Biomedical Engineers in T&T in their ability to register with the BOE and APETT.
- f) To receive and maintain international certification and accreditation for the BSc. Degree programme.

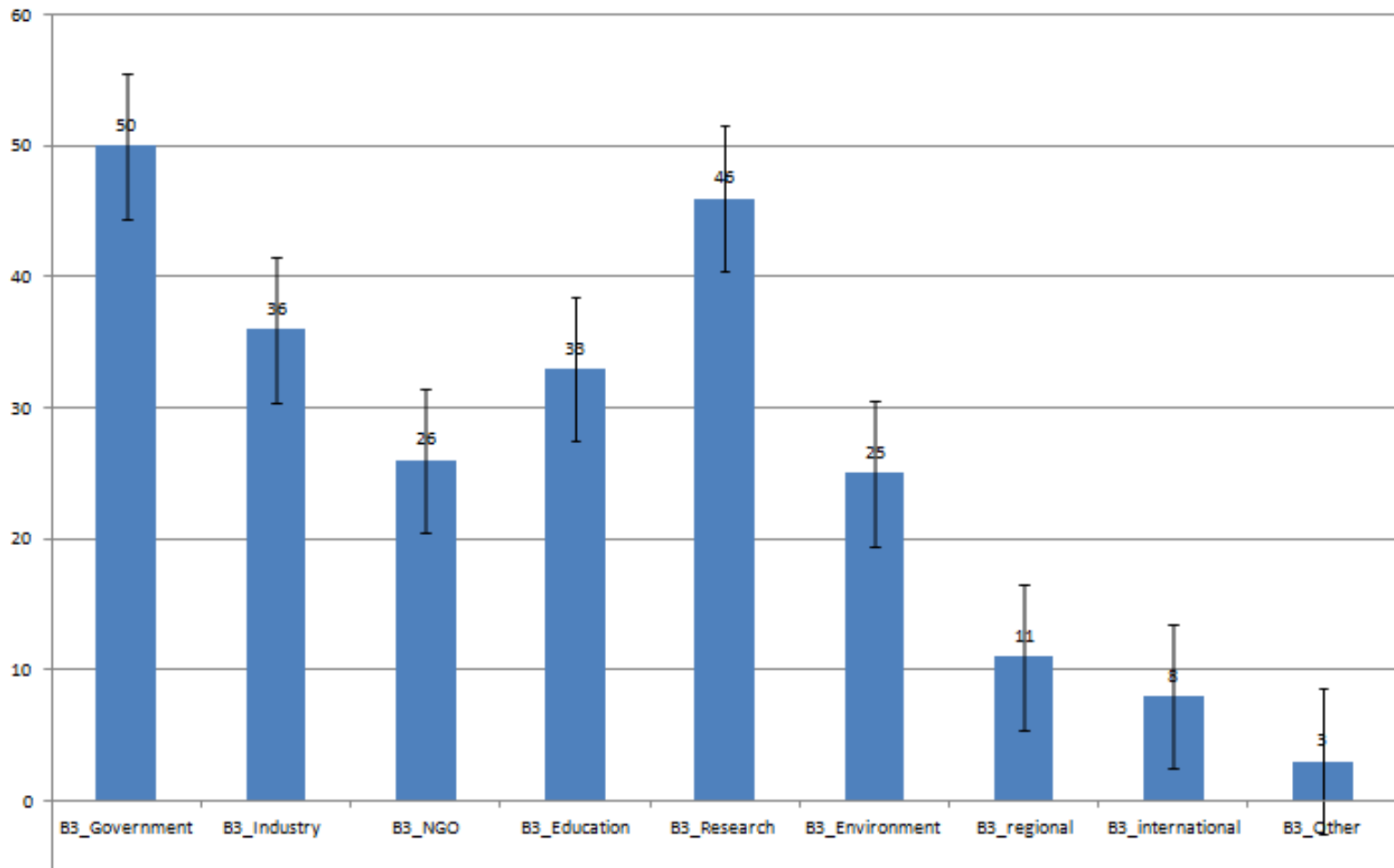
June-August 2014

Nationwide needs analysis market survey

YES	
NO	

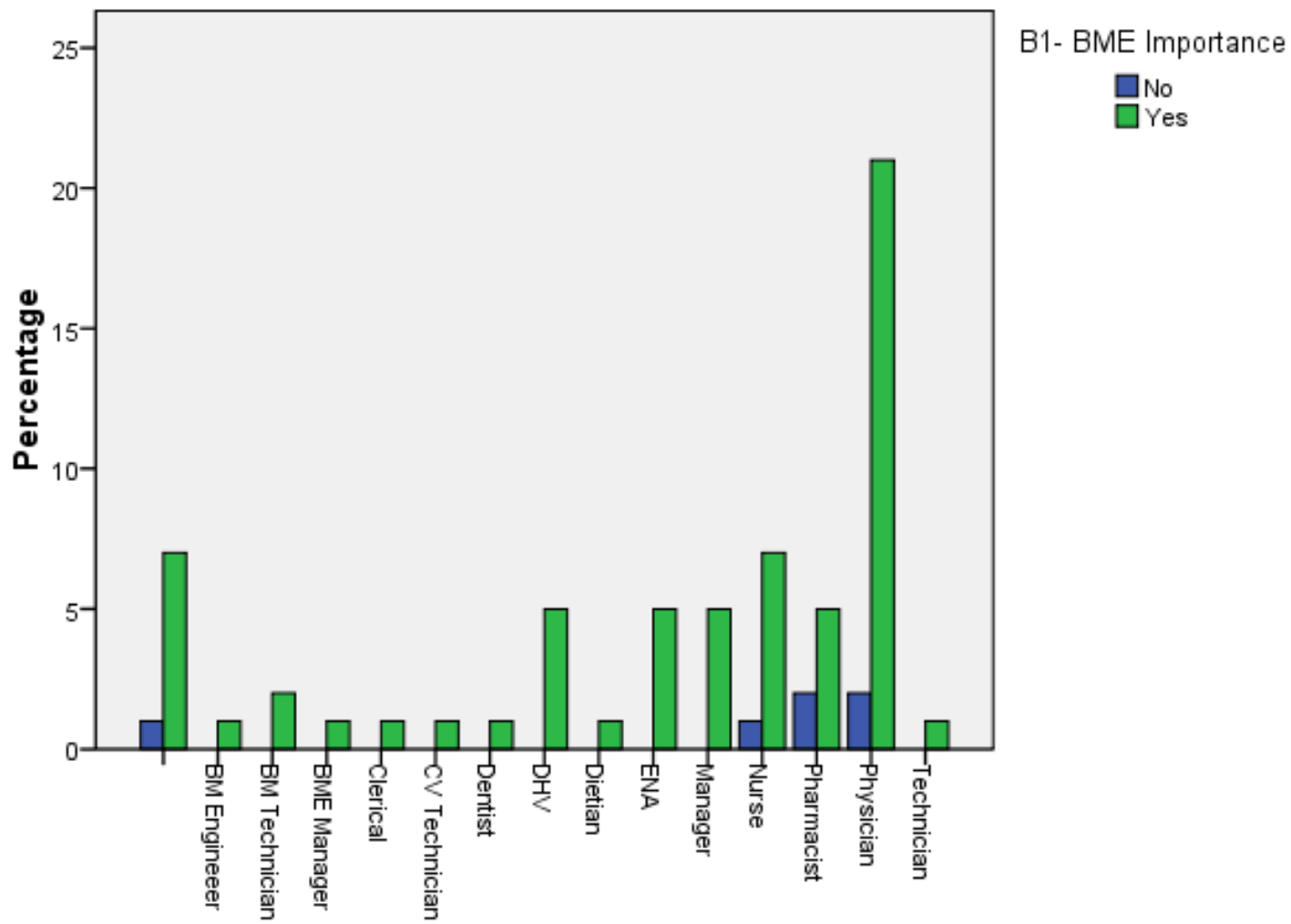
Needs Analysis Market Survey

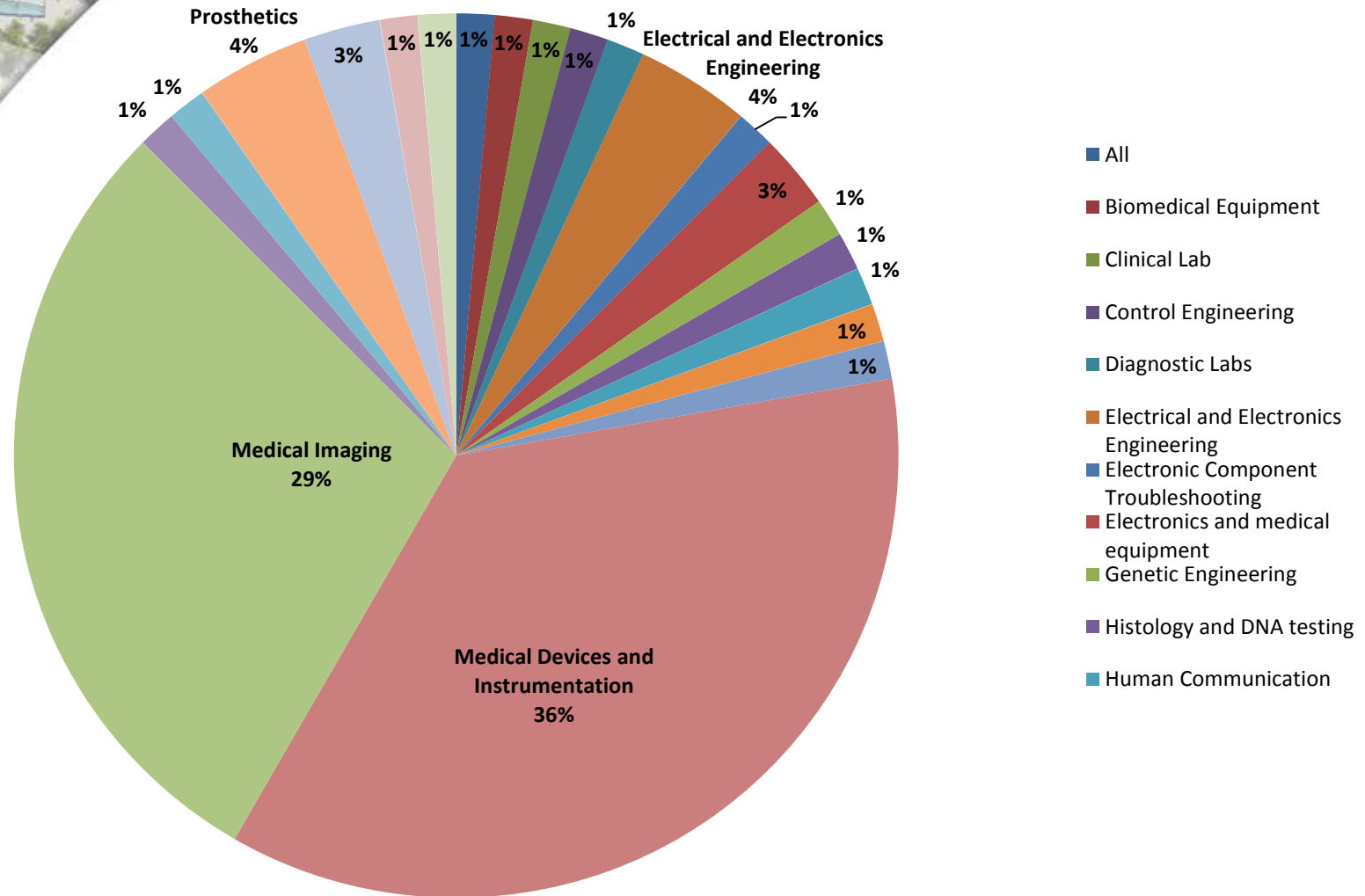
Importance of BME by Sector



% Importance of BME by Designation

Bar Chart





Possible career opportunities for Biomedical Engineering graduates:

- Biomedical Equipment Technician
 - Biomedical Equipment Planner
- Anesthesia Field Service Technician
 - Pharmaceutical Engineer
- Product Development Engineer
 - Imaging Service Engineer
 - Biological Scientists
 - Quality Control Manager
 - Material Scientists
 - Medical Devices Design
 - Medical Scientists
- Manufacturing research and Development
 - Chemists
- Pharmaceutical Process Engineer
 - Quality Engineer
- Healthcare Sales Representative
 - Lecturer
 - Healthcare Purchasing
 - Medical Informants
- Patent Officer Health and Safety
 - Technical/Medical Writing
 - Sales Representative
 - Biomedical Scientists
- Bioenvironmental Engineer

Issues to consider

- Aligning curriculum with job descriptions
- Certification and Accreditation
- Market Saturation
- Flexible graduate?

Ministry of Health

Memorandum of Agreement – Draft

Quality and Accreditation

*The UTT BME BAsC. degree is currently accredited with
ACTT.*

Certification of Diploma: AAMI (Association for Advancement of Medical Instruments) and the ICC (International Certification Commission).

International Accreditation of BAsC: The Institute for Physics and Engineering in Medicine [IPEM] is a licensed member institution of the UK Engineering Council

Market Saturation?

- Expansion of the field locally
- UTT - Entrepreneurial University
 - Outside of T&T [Regionally]

Industry Advisory Committee

The BME Unit has established an Industry Advisory Committee. The members of this committee are as follows:

Ms. Jennifer Andall: Manager, Health Sector HR Planning and Development, Ministry of Health

Mr. Ronald Koylass: Project Manager, Project Management Unit, Ministry of Health

Dr. Ronald Henry: Director, Advanced Cardiovascular Institute; President, Caribbean Cardiac Society

Mr. Christopher Camacho: *Managing Director, Advanced Cardiovascular Institute; Managing Director, MRI Trinidad & Tobago Limited*

Dr. Taarik Dookie: Supervisor of Echocardiography Services, Doctor's Inn Outpatient Cardiology Centre, Trinidad

EXERPT FROM APETT CORRESPONDANCE:

“.....Based on the content of the Programme and the information provided on its accreditation, APETT’s Executive Council has agreed that Biomedical Engineering is in fact a branch of Engineering acceptable to the Association, and that persons with accredited qualifications in this field are eligible for membership of the Association in the respective grades. Further, for the purposes of networking and other activities, members with this qualification would be assigned to the Electrical Division of the Association. When numbers so justify, a separate Biomedical Engineering Division may be proposed. A Biomedical Engineer who is a member of APETT would act as a representative on the Electrical Division Council.....”

Conclusion

The UTT Biomedical Engineering [BME] Unit is interested in promoting this fairly new engineering profession in Trinidad and Tobago as well as the wider Caribbean.

Aligning curricula with national strategies and objectives speaks to longevity of the academic programme.

Thank
You!

