THE FIFTEENTH SESSION OF COMSTECH GENERAL ASSEMBLY & OIC SUMMIT ON SCIENCE AND TECHNOLOGY

ISLAMABAD, ISLAMIC REPUBLIC OF PAKISTAN
9 – 10 NOVEMBER 2015

Report
On the Activities of
Islamic University of Technology (IUT) Dhaka

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
DHAKA, BANGLADESH
ORGANISATION OF ISLAMIC COOPERATION (OIC)
PREFACE

We consider it as a great honour and privilege to report the activities of the Islamic University of Technology (IUT) in the fifteenth session of COMSTECH General Assembly & OIC Summit on Science and Technology to be held in the picturesque city of Islamabad, Islamic Republic of Pakistan. It is my pleasure to inform that the university is marching forward with renewed pledge and enthusiasm and its plan of activities has been revised for meeting the challenges of the 21st century in the field of human resources development within its modest capacity.

This report has been prepared to give an overview on the activities and programmes of the university in the recent past. It also highlights the possible areas of improvement so that this university can continue its efforts for the development of human resources of the Ummah.

Our efforts in preparing this report would be considered fruitful if it can facilitate the deliberations of the session. It is our expectation that the current session would provide us with guidelines for further development and dynamism in the activities of the university.

On behalf of the students, faculty and staff members and on my own behalf, I would like to express our heartfelt gratitude to the delegates of the Assembly and expect that the university will continue to receive necessary support – in terms of material, moral and intellectual - from the Assembly in the days ahead to facilitate the achievements of its objectives as mandated by the Organisation of Islamic Cooperation (OIC) to the benefit of the Member States.

16 October 2014
Prof. Dr. M. Imtiaz Hossain
Vice-Chancellor
CHAPTER – I
INTRODUCTION

1.1 Evolution from Centre to University
Islamic University of Technology (IUT) started its maiden journey as Islamic Centre for Technical and Vocational Training and Research (ICTVTR) in pursuance of the Resolution No. 5/9-E of the 9th Islamic Conference of Foreign Ministers (ICFM) held in Dakar, Senegal in 1978. The Centre started its long regular programmes in 1986. Following the decision of the 22nd ICFM held in Casablanca, Morocco, on 10 – 11 December 1994, ICTVTR was renamed as Islamic Institute of Technology (IIT) and later as Islamic University of Technology (IUT) through the adoption of a remarkable decision on 27 June 2001 in the 28th Session of ICFM in Bamako, Mali vide Resolution No. 48/28-E.

1.2 Team ‘IUT Astronaut’ received award of Honorable Mention from Mars Society Student Competition
A group of students of IUT named ‘IUT Astronaut’ participated in the International Inspiration Mars Student Design Contest organized by the Mars Society, Inspiration Mars and NASA. This was a worldwide design competition of a two-person Mars fly mission for the year 2018 to involve and encourage the students, teachers, experts from all over the world in Mars expedition. Eminent and reputed universities all over the world joined the competition. Selected proposals were short-listed from 38 teams representing 56 universities from 15 countries including the United States of America, Canada, Russia, the Netherlands, Germany, Austria, Italy, the United Kingdom, Portugal, Poland, Mauritius, India, Bangladesh, Japan and Colombia. Despite limited resources and with a very little knowledge in astronomy, the proposal of the team ‘IUT Astronaut’ was accepted by the Mars Society along with obtaining the Award of “Honorable Mention”. The paper of team ‘IUT Astronaut’ named “Human Expedition on Mars-Timeline 2018” has also been posted on the Mars society website.

1.3 5,162 Candidates from 17 Member Countries Nominated for Admission for Academic Year 2013 – 2014
The regular courses for the current academic year 2013 - 2014 started on 30 December 2013. As recommended by the Islamic Commission, apart from normal channels of contact, Ministries of Higher Education of the Member Countries were communicated. For the current academic year, 2013-2014, as many as 5,162 candidates were nominated for admission into different programmes. Of the nominated candidates, due to shortage of available seats, 349 candidates were finally admitted on the basis of merit and principle of equitable geographical representation. The current academic year 2013-2014 is going to be completed in the second week of November 2014 and the next academic year 2014-2015 is scheduled to begin on 20th November 2014 with the admission of around 380 students from different member states of the OIC in various postgraduate and undergraduate programmes.

1.4 Short Courses in Topics Covering Emerging and Frontier Technologies
Apart from long regular academic programmes, the University has also been conducting skill and knowledge updating and upgrading short courses, seminars
and workshops since its inception, which is important to equip in-service personnel with the fast changing technology of the modern era. So far, about 2,650 trainees from around 50 countries participated in the short courses offered by the University from time to time. In 2013, the University organized short courses and workshops in the following areas: (i) Wireless and Mobile Communication for Sustainable Rural Developments (ii) Issues, Trends & Horizons of Technical and Vocational Education and Training (TVET) in OIC Member Countries and (iii) Smart Phone Applications: Technologies and Research Trends. At the end of 2014, during the inter-session break, the University has planned to offer short courses in topics covering different emerging and frontier technologies like (i) From Devices to Circuits and Systems: the Complete Design Methodology, (ii) Entrepreneurship Development through TVET for OIC Member Countries, (iii) Cloud Computing and Big Data – A paradigm shift in ICT, (iv) Vibration, Acoustics and Non-Destructive Testing and (v) Water Quality Management for Drinking Purpose

1.5 Research Activities
The University encourages faculty members and students to undertake research projects. Papers authored by the faculty members are regularly published in refereed journals and presented in national, international seminars and conferences. All final year students are to prepare and present their work on a project in an acceptable standard. The objective of project presentation is to provide student-groups with an opportunity to develop the ability to present and defend their work before an audience comprising faculty and students using multimedia facilities available at the University. Postgraduate students also put their efforts to publish their research results.

1.6 Key Performance Indicators (KPI)
The University has adopted five major criteria in the areas of research, teaching, international outlook, socio-economic impact as well as facilities, resources and supporting staff in order to measure its performance focusing on its strengths and weaknesses. It is believed that identification of weaknesses in an objective manner is a giant step forward in improving the performance of any institution.

1.7 Publications of the University and Journals Subscribed
1.7.1 A refereed technical journal named “Journal of Engineering and Technology” containing research papers authored by the academic staff of IUT, various organizations, Universities of the host country and abroad is being published twice a year after proper review and scrutiny to facilitate the development of creative scholarship. The Journal has been well appreciated by the academia. A publication named “IUT Newsletter” is also brought out every two months to publicize the activities of the University. On the occasion of the 27th Convocation, a News Bulletin highlighting the academic activities of the University along with other news was published in the three OIC languages.

1.7.2 The students, especially at Master’s level, and teachers have been benefiting immensely by using online journals subscribed by the University. The subscription of online journals has opened up access to about 5,000 journals. In addition, the University subscribes to a number of International Journals. Although, more Journals are required to be subscribed, but due to financial constraints, the University is not in a position to do so at the moment.
1.8 Co-curricular and Extra-curricular Activities

A good number co-curricular and extra-curricular activities took place in the recent past. Notable among those are: 24th Annual Athletic Competition, Orientation Programme and Fresher’s Reception for the new members, 15th IUT Computer Programming Contest-2014 (IUTCPC-2014), Annual competition of recitation of verses from the Holy Quran, Tree Plantation Programme, Intra IUT Debate Competition – 2014, Intra IUT Robotic Contest for line follower robot design and race, International Photography Exhibition titled ‘Break the Circle –Season IV’, IUT Cultural Programme, Prize Distribution Ceremony of various events,

1.8.1 IUT 6th National ICT Fest 2014 was organized on 12 – 13 September 2014 by Computer Science and Engineering (CSE) Department at the campus of the University amid enthusiasm and festivity with the participation of a large number of students from different schools, colleges and universities. The programme included project showcasing, general knowledge competition, gaming contest and IT business idea challenge, programming contest, ICT Olympiad.

1.8.2 “CENNOVATION 2014” was successfully organized for the second time by Civil and Environmental Engineering department (CEE) of IUT on 27 JUNE 2014 with great enthusiasm. More than 450 students participated from 12 leading universities of Bangladesh in different events like Poster Presentation, Mechanics Olympiad, Environmental Photography, Case Study Analysis and Project Showcasing.

1.8.3 “MECCELERATION 2014” was successfully organized for the first time by Mechanical and Chemical Engineering (MCE) Department of IUT on 19 September 2014 with spontaneity and festivity. Young students from different universities participated in the festival which was organized to help develop soft skills like leadership, event management, writing, etc. along with innovation through events like Project Presentation, Business Idea Competition.

1.8.4 “ESONANCE 2014”, a multi-faceted technological event, was organized by the Department of Electrical and Electronic Engineering of the University on 22 August 2014. Students from all over Bangladesh participated in the event, which was held at the campus of the University. The aim of Esonance 2014 was to bring together students across the country in an environment that was competitive as well as festive and to promote a platform for sharing ideas. The event was divided into a number of competitive segments including robotics, quiz competition, business case study, hardware showcasing, software showcasing, poster presentation.

1.8.5 ‘Battle of Minds’ is one of the most prestigious competitions in corporate sector of Bangladesh. British-American Tobacco Bangladesh (BATB) has been organizing the event since 2004 and it was the 11th edition of the event in 2014. Over the years, the competition has evolved and now it provides unique business challenges including real-life business situations so that the students get maximum exposure to a possible real life situation and learn from these experiences.

1.9 Responding to the Call of Humanity

Expressing solidarity and compassion with the suffering humanity, the students of IUT under the patronage of the administration held ‘IUT Blood Donation Programme – 2014’ in cooperation with ‘Bangladesh Thalassaemia Hospital, a Dhaka-based voluntary organisation.
1.10 Admission of Female Students

The University has so far been admitting only male students from the member states in the regular programmes. Due to lack of required physical facilities, female students could not, so far, be admitted into the University. The necessity of developing the required facilities for allowing female students to study in this prestigious University has been felt by many quarters. To facilitate the admission of female students in the University, necessary initiative was taken for procurement of some private land adjacent to the campus for the construction of dormitory and other facilities. As acquiring of the land was not possible yet, the University is contemplating to build a dormitory for the female students in the existing area without disturbing the Master Plan of the campus as far as possible. In a bid to procure fund, the University is appealing to the member states and a number of institutions / dignitaries. The University welcomes material support from the benevolent governments of the member states as well as individuals and institutions through magnanimous donations as required for the construction of necessary facilities and thereby strengthen their image and stature in the eyes of the international community as a progressive and forward looking one dedicated to the cause of education in general and female education in particular.
CHAPTER-II
PROFILE OF ACADEMIC PROGRAMMES AND STUDENTS

2.1 Students numbering 4,156 from as many as 34 countries have so far studied and graduated from IUT upto the Academic Year 2012-2013 who are now engaged in various important sectors throughout the world especially in the OIC Countries.

2.2 Following are the programmes that will be offered in the AY: 2014 – 2015:

A. Engineering Programmes:
   (a) Postgraduate Programmes:
      (i) Doctor of Philosophy in Mechanical Engineering / Electrical and Electronic Engineering / Computer Science and Engineering.
      (ii) Master of Science / Master of Engineering in Mechanical Engineering, Electrical & Electronic Engineering, Computer Science and Engineering, Civil Engineering and Computer Science and Application.
   (b) Undergraduate Programmes:
      (i) B.Sc. in Mechanical Engineering
      (ii) B.Sc. in Electrical and Electronic Engineering
      (iii) B.Sc. in Civil Engineering
      (iv) B.Sc. in Computer Science and Engineering
   (c) Diploma Programmes:
      (i) Higher Diploma in Mechanical Engineering
      (ii) Higher Diploma in Electrical and Electronic Engineering
      (iii) Higher Diploma in Computer Science and Engineering.

B. Technical and Vocational Education Programmes:
   (with different specializations)
   (a) Postgraduate Programmes:
      (i) Master of Science in Technical Education
      (ii) Post-Graduate Diploma in Technical Education
   (b) Undergraduate Programmes:
      (i) Bachelor of Science in Technical Education
      (ii) Diploma in Technical Education

2.3 Academic Activities

2.3.1 Postgraduate Programmes in Engineering: Recently, the university has strengthened its Postgraduate Programmes in Engineering by admitting more students at the level of M.Sc. Engg./ M.Engg. The MCE Department was the first to offer Ph.D. programme followed by EEE Department. The CSE Department has introduced the Ph.D. programme from the academic year 2013-2014, while the
CEE Department launched their Masters programme for the first time from the academic year 2012-2013. With the admission of increased number of postgraduate students, the research programmes of the Departments have gained momentum with the publication of more research papers in peer-reviewed scientific journals. In pursuance of the decision of the 30th Meeting of the Governing Board and the meeting of the Academic Council, part-time postgraduate studentship has been introduced. A number of junior teachers of the University are also currently pursuing higher education at the University.

2.3.2 **Industrial Visits and Training of Students:** Regular visits by the students to the industries have been organized during the semesters for effective University-Industry interaction. In addition to these industrial visits, as a part of the academic requirement, during the inter-session break, the students of 3rd year B.Sc. Engineering and 2nd year Higher Diploma in Engineering are attached to industries including large fertilizer factories, thermal power plants, telephone installations, software companies, industrial and commercial organizations inside and outside Dhaka under the supervision of an Industrial Training Committee.

2.3.3 **Employability of IUT Graduates and some achievements:** The reputation and performance of a University is linked to the quality and standing of its alumni. The acceptance of the alumni by renowned higher seats of learning and their demand in the job market sometimes is considered to be an important yardstick of evaluation of a University. The graduates of IUT are well placed in different countries and some of them are pursuing higher studies at the levels of Masters and Ph.D. in various Universities of Germany, Denmark, U.K., Canada, Australia, Sweden, Korea, Finland, USA, Japan, Ireland, Norway and some OIC Countries. Many of them obtained teaching and research assistantships and government scholarships. The former graduates are performing well in their professional fields in their home countries and abroad including in the Middle East. Some graduates who completed education at IUT have also obtained teaching posts in their countries including Bangladesh and are contributing to the effort of dissemination of scientific and technological knowledge. In some cases, students got offer of jobs even before their graduation. The current status of many of IUT alumni may be seen from the alumni website of the University.
CHAPTER-III

THE FACULTY

3.1 Faculty strength

To impart quality education, the University needs further recruitment of highly qualified full time faculty to cope up with the requirement, retirement & resignation of few. It also appreciates the importance of recruiting teachers from different Member Countries in view of its multi-cultural student population and the need for raising its international character. Due to financial constraints, the University’s efforts for internationalization could not be further strengthened in recent times.

To meet the teaching and research loads, a good number of full-time faculty members have been recruited recently. Under the current pay roll, there are 79 full time teaching staff. In addition, some experienced part-time faculty of few specializations deliver lectures on specialized subjects at the University as per schedule. In an effort to have more highly qualified professionals, the University has granted extraordinary leave without pay to young faculty members to pursue higher studies and regular contacts are being maintained to monitor their progress.

In the meantime, some faculty members have returned after finishing their higher education abroad and resumed their duties at the University contributing to the further improvement in the quality of teaching.
CHAPTER-IV
MEETINGS AND VISITS OF DIGNITARIES

4.1 Representation at Meetings

4.1.1 The Vice-Chancellor and other staff members attended a number of meetings in the recent past. Notable among those are: IGGE meeting of the OIC held on 10 – 11 September 2014 in Jeddah, KSA; 41st Session of the CFM held in Jeddah, KSA, on 18 – 19 June 2014; 37th Session of ICECS held on 10 – 12 May 2014 in Jeddah; 06th General Conference of the Federation of the Universities of the Islamic World held in Riyadh, Kingdom of Saudi Arabia on 26 – 28 November 2013; 29th Session of the Standing Committee for Economic and Commercial Cooperation (COMCEC) held in Istanbul, Republic of Turkey on 18 – 21 November 2013; 42nd Session of the Permanent Finance Committee (PFC) held in Jeddah, on 10 – 12 November 2013; Vice-Chancellor’s Forum 2013 held on 23 – 24 September 2013 in Islamabad, Islamic Republic of Pakistan; 11th International Scientific Symposium on ‘Environmental Protection Legislations: Towards Sustainable Development’ and the Exhibition on ‘Environmental Protection and Achievements of Islamic Capitals and Cities Municipalities’ held on 01 – 03 September 2013 in Makkah, Kingdom of Saudi Arabia; “Forum for Cooperation and Exchange Among the Universities of the Islamic World” held on 28 – 30 May 2013 at Imam Muhammad Bin Saud Islamic University, Kingdom of Saudi Arabia.

4.2 Meetings in the University

4.2.1 During the recent past, a number of meetings were held at the campus of the University which included those of Academic Council, Finance Committee, Admission Committee, Departmental Committee, Syllabus Committee, Examination Committee and took decisions on the relevant matters. As per provision of Internal Rules, the Administrative Advisory Committee met regularly under the Chairmanship of the Vice-Chancellor to advise him on the overall smooth functioning of the University.

4.2.2 Meeting of the Governing Board

The 38th meeting of the Governing Board was held at the campus of the University on 28 – 29 October 2013. The meeting was presided over by its the then Chairman, Dr. Kamal Abdul Naser Chowdhury, the then Secretary, Ministry of Education, Government of the People’s Republic of Bangladesh. The meeting resolved on a number of important issues including endorsing the budgets for the financial year 2014 and 2015.

4.3 Visits to the Campus

Many important dignitaries visited the campus in the recent past who expressed their satisfaction at the functioning of the University and the facilities available for imparting education and training of international standard. The dignitaries included H.E. Engr. Khandker Mosharraf Hossain, Minister, Ministry of Expatriates’ Welfare and Overseas Employment, Government of Bangladesh on 19 September 2014; H.E. Mr. Nurul Islam Nahid, Minister for Education, Government of Bangladesh; H.E. Mr. Iyad Ameen Madani, Secretary General, OIC on 10 March 2014; H.E. Madam Norlin Binti Othman, High Commissioner of Malaysia on 08 February 2014; H.E. Mr. Hasanul Huq Inu MP, Hon’ble Minister for Information, Government of the People’s Republic of Bangladesh on 04 October 2013.
4.4 Seminar / Conference / Talks

A good number of seminar / conference / talks were organized on the campus in the recent past. Notable among those are: “Cloud Technology for Enterprise Network Solution” on 16 January 2014 by Mr. Md. Arman Hossain, who graduated from CSE Department, IUT and is currently serving as a Cloud Solution Consultant in Telstra, Sydney, Australia; “Software Development and Associated Fields of Concern” on 07 February 2014 by Mr. Fahad Hasan, who graduated from CSE Department, IUT and is currently serving as a Senior Software Engineer in Impulse (BD) Ltd., Bangladesh; “Hole Inter-subband Transitions in the Valence Band of GaAs/A1(Ga) As Material System” on 19 February 2014 by Mr. Mohammed Imrul Hossain, Doctoral student, Department of ECE, Purdue University, USA; “Server Computer Development – An Overview” was held on 18 March 2014 by Mr. Nasim Hussain, Principal Hardware Engineer, Oracle Corporation, California, USA; “Data Revolution in Bangladesh: 3.5G & its Application to build Digital Bangladesh together” held on 04 June 2014 by Mr. Ravinder Parashar and Mr. Khandokar Faisal from Robi Axiata Limited; “Towards 5G: small cell networks and non-contagious spectrum access” on 12 May 2014 by Mr. Muhammad Nazmul Islam, PhD student of Wireless Information Network Laboratory (WINLAB), Rutgers University, USA; “Automated underwater object classification using Optical Imagery” on 12 May 2014 by Dr. ASM Shihavuddin, Assistant Professor, Department of EEE, IUT; “Reminder to the Muslims” held on 25 June 2014 by Mrs. Shaheen Islam, Senior Education/Trade - Public Affairs Advisor, High Commission of Canada; “Key performance Indicator in IUT” held on 17 July 2014 by Prof. Dr. Md. Anayet Ullah Patwari, MCE Department; “Positive Social Change by Using Mobile Technology” on 26 August 2014 by Grameenphone; “Teen-Trepreneur” held on 27 August 2014 by Mr. Sabirul Islam, a young entrepreneur and Author;

4.4.2 Faculty Publications

The University always encourages its faculty members and students to carryout research activities and as a result a number of research papers have been published in national and international journals. The details of the papers published in the recent past are furnished at Appendix-I.
CHAPTER-V

UPGRADATION AND EXPANSION OF FACILITIES

5.1 Development of Facilities and Laboratories

In order to maintain the competitive edge in the areas of emerging technology, the need for balancing, modernization, replacement and expansion of the existing facilities in the laboratories and workshops cannot be over emphasized. Realizing this need, the University has been able to procure some equipment in its workshops and laboratories despite financial constraints in the recent past.

5.2 During the period under review, MCE Department procured for its Auto Shop, Machine Shop, CAD Lab and Classrooms equipment like Engine Auto Scanner, Car Lift, Multi-media Projector, Work Station, Portable Surface Roughness Tester.

5.3 EEE Department procured different items in a bid to improve the existing facilities like Programmable Logic Control (PLC), Tachometer, Analogue Multimeter, Project Board, Digital Trainer Board, Digital Oscilloscope, Microprocessor Training Kits, Function Generator, TOA Amplifier, Multimedia Projector with hanging kit, Digital Plain Paper Copier, Scanner, PC, Power Guard, etc.

5.4 Similarly, TVE Department also procured equipment and accessories to enrich its existing facilities. The items included Desktop / PC, Programmable Logic Devices / Controllers, Sound System.

5.5 CEE Department added a number of equipment. Notable among them are: 1000 kN Servohydraulic Universal Testing Machine (UTM), High Speed Stirrer Machine, Consolidation Test Apparatus, Casagrande Liquid Limit Device, Marshall Test Equipment, C.B.R. Test Equipment, Semi-Automatic Bitumen penetrometer, Ductility Tester, Asphalt Oven, Mini Concrete Mixture, Incubator, Visible Spectrophotometer, BOD Track Apparatus, BOD Incubator, COD Reactor, Turbidity Meter and Electronic Balance.

5.6 In the same vein, the CSE Department and Computer Centre of the University purchased Printer, Intel Original Core, UPS, Multi-media Projector and Screen, Scanner, IP Camera, among others.

5.7 With a view to implementing the enhancement of facilities, additional financing would be required. In view of the fact that financing of the existing programmes has become difficult due to non-payment or delay in payment of some mandatory contributions, new sources may be explored to lessen dependence on traditional sources of mandatory contributions. In this context, voluntary contributions from Financial Institutions and donations and contributions from international institutions, philanthropic organizations, banks and individuals and from any other sources may be considered.
CHAPTER-VI

CONCLUSION

6.1 The University was established to provide technically qualified human resources to the member states of OIC. Over the years, the institution has grown both in quantity and quality in terms of its graduates. One would say that compared to the demand in the Islamic World, the current output of the University cannot be considered significant. While this is true, the University has been able to develop itself as a very popular institution. It has great demand among the young men of the OIC countries who want to build a career on engineering and technical education. Every year, it receives about ten times more applications from the potential students than it can actually accommodate.

6.2 There is no denying the fact that most of the countries in the Islamic World are developing countries. They need the services of technical people more than anything else in order to build their industrial set up. In this context, the IUT is in a very good position to help the member states. In this context, the member states are requested to look into the enormous possibilities of the University and exert their individual as well as collective efforts so that IUT can admit many more young people of the Islamic World.

6.3 Right now, the Islamic University of Technology is poised to excel in academic and research arena. Here students and trainees from different Member Countries are pursuing various programmes in an Islamic environment. It is a meeting place of ideas and culture from different Islamic Countries. The students graduating from the University, equipped with necessary technical knowledge and skill and imbued with the spirit and values of Islam would, Insha Allah, be able to contribute immensely to the rapid economic development of the Member States. With students, trainees and staff from the different Member States, IUT already appears to be the most visible demonstration of the Islamic Solidarity and Joint Islamic Action under the Makkah-Al-Mukarramah Declaration. May Almighty Allah, in His Infinite Mercy shower His choicest blessings on all the endeavours for serving the Islamic Ummah.

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