Bangalore Institute of Technology (BIT) address

1. Dr.A.G.Nataraj, , Principal, Bangalore Institute of Technology and distinguished professors and lecturers, Ladies and Gentlemen!

   A Very good Morning to you all.

2. The Bangalore Institute of Technology (BIT), Bangalore established in 1979 under Visvesvaraya Technological University in Karnataka has come along way in becoming premier engineering colleges of India providing excellent education in various engineering streams offering Bachelor degree Masters degrees and Ph.D. research work. I am also happy to know that the institute has large number of collaborative research programmes with organisations such as IISc, NAL, ISRO, etc.

3. A large number of Universities and higher educational institutions have come up in India in recent times. This increased number of educational institutions indicates the challenge of providing good quality education which is a main concern of India today.

4. I am very much impressed to know that the institution is organizing a dedicated workshop on faculty development program on “Mathematical and Statistical Techniques in Engineering Applications” .

5. The very moment when I stood before you to address, makes me feel that I am looking at the people who are going to produce future generation of technologists, leaders and entrepreneurs and take India to greater pride and heights.

6. **Importance of Mathematics**: Mathematics and Statistics plays a vital role in every fields of human activity.Today it holds a central position in almost every field like Industry, Commerce, Trade, Economics, Defence, Aeronautics , Space science , Civil engineering, Manufacturing sector, Medical, Computer

Technology, Astronomy , etc…, so I would say that the application of maths and statistics is very wide and there is no field which is untouched. It has created wonders for the human mankind.

7. Mathematics and Statistics is about pattern and structure; it is about logical analysis, deduction, calculation within these patterns and structures. When patterns are found, often in widely different areas of science and technology, the mathematics of these patterns can be used to explain and control natural happenings and situations. Mathematics has a pervasive influence on our everyday lives, and contributes to the wealth of the country.

Today, Maths + Engineering is everything .

8. Engineering is one of the most important professions for the mathematics discipline. New developments in engineering have stimulated new areas of mathematical research. Control theory, signal processing and coding theory are all examples for this. When taking into account the close relationship between engineering and mathematics, we can easily say that mathematics have a vital role in the engineering education.

9. In the last twenty years, both new demands of the engineering profession and inadequate mathematics ability of the engineering students have led in a big change in the scope of the mathematics education.

10. The recent developments in technology and computers have caused variation in teaching mathematics of engineering students and have brought with them the use of modern techniques and methods.

11. The ever more rapid pace of technological development has created a situation in which many engineers will require frequent updating in areas of their specialization. This may involve the

mastery of new techniques and understanding of new theoretical concepts. A fluency with mathematics is an essential weapon in modern graduate engineer's armoury.

12. The one of the most important skills required of engineering students are problem solving and creative thinking. With the rapid progress of computer technology in last couple of decades, software applications and the web have become important elements of the engineering mathematics education. Variations and combinations of some learning methods such as project-based learning, the integrated approach, can be used .

13. Mathematics and Statistics encourages the students to use logical thought, to formulate a problem in a way which allows for computation and decision making, to make deductions from assumption and to use advanced concepts.

14. If you look at a classic example of the importance of Mathematics and Statistics in our space based organization, you would be astonished that all our space mission calculations starts with mathematics and ends with mathematics. Every spacecraft has a primary phase of mission planning calculations which includes, orbital studies, mission calculations, mission analysis and mission simulations. Similarly again during spacecraft realization every satellite subsystem goes through a phase mathematics like structure design analysis, component theory and analysis, analog and digital ckt designs, power budget distribution , control electronics theory, Wave theories etc.

15. On the other hand, Astronomy is yet another important and interesting area in space domain which deals with the measurement of distance, sizes, masses and densities of spacecraft by means of observations. During these measurements errors are unavoidable so most probable measurements are founded by using statistical methods.The

basis of astronomy is statistical study; Statistics provides the theory and methodology for the analysis of wide varieties of data.

16. As a Ex-Director of ISRO Satellite Centre it's my duty to speak about Indian Space Programme.

17. India is now the role model to the world in space applications; one of the six in the world with the capability to build satellites and launch them from her own soil.

18. You might all be aware that India's Mars Orbiter Mission was launched during November 2013 and the satellite will reach the MARS by September 2014. This is ISRO's first mission to planet to study Mars terrain and atmosphere. Mars Mission was successful in our first attempt itself. The world applauded at our achievements. This mission is inspirational to the young generation and It is completely based on Mathematics and Statistics which was the basis for mission calculation.

19. Based on the application derived out of the space programme, Indian Space Programme today has the satellite & launch vehicle programme. In the area of satellites, there are three major programmes namely remote sensing programme, communication programme and navigation programme. We also have interesting projects in space science and interplanetary missions.

20. Indian Remote Sensing (IRS) satellite system is the largest civilian remote sensing satellite constellation in the world providing imageries in a variety of applications like natural resource management, urban development, mineral prospecting, disaster management etc.

21. The Indian National Satellite (INSAT) system established in 1983 initiated a major revolution in India's communications sector and sustained the same later. It provides services in telecommunications, television broadcasting, weather forecasting, disaster warning and Search & Rescue operations.

22. Satellite based navigation is emerging as an important space application wherein constellation of satellites work together to provide accurate position, time and velocity information to objects travelling on land, sea or in air making the travel more efficient and safe. India is developing its own satellite based navigation system called Indian Regional Navigation Satellite System (IRNSS) comprising seven satellites. Our first and second navigation satellites IRNSS-1A,1B, 1C and 1D are already in orbit and the launch of fifth mission in this programme is planned by the end of the year this year.

23. As part of space science and interplanetary exploration; Astrosat, the first astronomy satellite is all set ready for launch during September 2015. Following which Chandrayaan-2, India's second mission to the Moon, will have an Orbiter and Lander-Rover module and will be launched during 2016-17 time frame.

24. The advanced software make the life of scientists to easier in arriving at various solutions to complex problem through logical means and statistical data.

25. The next generation of software requires the latest methods from what is called category theory, a theory of mathematical structures which has given new perspectives on the foundations of mathematics and on logic.

26. In recent days, the existence of high speed computers has now helped mathematicians to calculate and to make situations visual as never before. Also this calculation has developed from numerical calculation, to symbolic calculation, and currently to calculation with the mathematical structures themselves. This lead to a major transformation.

27. To sum up I would sign off telling you all that statistics and mathematics can satisfy a wide range of interests and abilities and it develops the imagination. It trains a person to be clear and

logical in thought. It is a challenge, with varieties of difficult ideas and unsolved problems, because it deals with the questions arising from complicated structures. Yet it also has a continuing drive to simplification, to finding the right concepts and methods to make difficult things easy, to explaining why a situation must be as it is. In so doing, it develops a range of language and insights, which may then be applied to make a crucial contribution to our understanding and appreciation of the world, and our ability to find and make our way in it.

28. I would like to conclude my speech telling that the use of continuous assessment is often an advantage, since in real life every student are tested on the quality of the work they can produce, as well as the ability to do that work quickly and under pressure. It is becoming more important for you to show to a prospective candidate for an employer that you can produce well thought-out work to a high standard, and that you can communicate what you know, both in writing and orally.

29. Always remember that while Mathematics is one of the oldest fundamental subjects, it is constantly being rejuvenated and it is very much alive as it heads into the 21st century.

    All the very best all of you. Thank you one and all for your patient hearing. Jai Hind

This is only for reference:

Bangalore Institute of Technology (BIT)

The Bangalore Institute of Technology (BIT), Bangalore is one of the premier engineering institutions under Visvesvaraya Technological University in Karnataka. The institution established in 1979 offers the Bachelor of Engineering (B.E.) as well as Post Graduate degrees in various disciplines, besides research centres in all disciplines for carrying out Ph.D. research work. Also, our institute has large number of collaborative research programmes with organisations such as IISc, NAL, ISRO, etc.

I wish to inform you that our institute through Departments of Telecommunication and Mathematics is organising a faculty development program on **"Mathematical and Statistical Techniques in Engineering Applications"** during 29th to 30th of this month with the sponsorship of **Karnataka Science and Technology Academy (KSTA),** We are expecting more than 200 delegates for the program, mostly the post graduate students and faculty members from Engineering Colleges across the State of Karnataka.

We take this opportunity and pleasure to ***invite you as Chief Guest for the inaugural function*** scheduled on **29th of this month** at 10.00 am. A brochure highlighting on the workshop is attached for your kind information.
We look forward for your gracious acceptance of our invitation and confirmation to be the Chief Guest.

Regards,
Dr. A.G.Nataraj
Principal
Bangalore Institute of Technology,
Bangalore- 04

Phone : 080 -26615865, 26613237
Fax : 080-22426796

Email : principalbit4@gmail.com
Website : www:bit-bangalore.edu.in