

IIT(BHU)

Vision & Tasks Ahead

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1st Meeting of

Board of Governors

IIT(BHU), Varanasi

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Outline

- I. About the Institute**
- II. Vision of Institute**
- III. Tasks ahead**

I. About IIT(BHU)

About the Institute - History

- **Three colleges established starting 1919 onwards**
 - **BENCO (Banaras Engg. College) started in 1919**
 - Mech Engg, Electrical, Civil, etc.
 - **MINMET - Mining and Metallurgy, Ceramics in 1923/1944**
 - **TECHNO - Chemical, Pharmacy in 1932/1939**

BHU first in India to have Mech., Elect, Mining, Metallurgy, Pharmacy (1st in Asia as well)

- **Institute of Technology formed in 1968 by merging above 3 colleges**
 - **JEE admissions started in 1972**
- **IIT (BHU) formed on 29th June 2012**

About the Institute - Departments/Faculty

■ Departments

- **13 departments (9 in engineering, 3 in science, pharmacy)**
 - **Engg:** *Civil, Ceramics, Chemical, Computer, Electrical, Electronics, Mechanical, Metallurgy, Mining*
 - **Science:** *Chemistry, Physics, Mathematical Sciences*
 - *Pharmacy*
- **3 interdisciplinary schools**
 - *Material Sc., Bio-chemical, Bio-medical*

■ Faculty

- **234 regular faculty members (out of 500 odd faculty posts)**

About the Institute - Student Strength

Students admitted this year (2013-14):

<i>Program</i>	<i>Number</i>
4-year BTech/BPharm	716
5-year IDD and IMD	203
MTech/MPharm	362
PhD	120
<i>Total</i>	1401

Total student strength:

<i>Program</i>	<i>Number</i>
4-year BTech/BPharm	2880
5-year IDD and IMD	947
MTech/MPharm	700
PhD	451
<i>Total</i>	4978

II. IIT(BHU): Vision

Outline

Dimensions:

- **Research dimension**
- **Technology Transfer dimension**
- **Faculty dimension**
- **Student dimension**
- **Vital link with BHU**

Preamble

Before going to the dimensions, let us look at our understanding and principles:

- **IIT(BHU) is full of traditions of BHU**
 - **A unique institution with pride**
- **Must be led through its own fabric**
 - **And start must be made from its points of strength**

Some Guiding Principles

- **Strive for excellence - in research, in academics, in life**
- **For research problems - connect with societal needs**
 - **Interdisciplinarity, trans-disciplinarity needed**
- **Weave research into academic programs**
- **Produce holistic human beings - not uni-dimensional ones**
- **Combine art with science, and humanities with technology**

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Holistic education and impactful research

Dimensions

1. Research Dimension - Strategy

- 1.1 *Approach*: **Choose substantial societal problems for research**
 - **Promote group research at faculty level**
- 1.2 *DNA*: **Weave research into academic programs**
 - **Even the UG program should be research oriented**
- 1.3 *Collaboration* **with best research groups in the world**
 - **Setup fruitful partnerships at faculty level**

1.1 Approach: Choose Substantial Societal Problems

Choose substantial societal problems

- **Connect applications to basic research** - *persuade and inspire the faculty*
- **Link research funds with applications** - *gentle prodding*
- **Reward societal impact** - *awards as incentives*

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Elsewhere this was done with some success.

Ex. Language technology, aerial photograph stitching/mosaicing, open source geo-mapping, earthquake engineering, etc.

1.2 DNA: Weave Research into Academics

**Weave research into academics - in courses and projects.
Goes into the DNA.**

- **Research even at the UG level**
- **5-year integrated dual degree program**
- **MTech and PhD programs**

1.3 Collaboration with Best Groups in the World

Collaborations:

- **Connect with best research groups**
- **Identify their strengths and our own - *complementary research***

2. Technology Transfer Dimension

Research to products/technologies

- **Set up *engineering and productization* groups**
 - **Engineering and productization are different from research**
 - **But synergy needed with research**
- ***Public-private partnership* for productization**
 - **Ex. Fraunhofer Institutes in Germany.**

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 - **Ex. Fraunhofer Institutes in Germany.**

Research link up with society ensures that resulting technology is needed and useful.

3. Faculty Dimension

- **Winning the trust of faculty**
 - Making systems work
 - Creating a harmonious environment
- **Hiring new faculty - About 250 positions vacant**

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A feeling should develop of being on a journey together created !

4. Student Dimension

- **Motivating students towards research and nation building**
 - **Currently narrow motivation in many students - only jobs and money**
- **Developing holistic individuals**
 - **Developing sensitivity towards others, and larger society**
 - **Offering Humanities courses**
 - **All round development, not just technology specialist**

5. Vital Link with BHU

- IIT(BHU) has the *great BHU legacy*
 - How to carry that legacy forward?
- IIT(BHU) should work with BHU closely -
Great partnership possible in offering courses and research. Examples:

<i>BHU</i>	<i>IIT(BHU)</i>
■ Bio-Sciences	- Chemical Engg.
■ Physics	- Material Sc.
■ Philosophy, Economics	- Engineering
■ Humanities, Arts	- Engg. Design
■ Languages	- Computer Sc.
■ Humanities, Arts, Languages	- Engg. education

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IIT(BHU) should link with the richness of BHU

Moving Forward

Move forward by

- **By taking *people into confidence***
 - **Working with *fairness and firmness***
- **Building systems that work and reasonably quickly**
 - **Simplify processes**
 - **Rapid computerization**
- **Inspiring people to give their best**

In Conclusion

IIT(BHU) has great potential

- **IITs are trying to become multi-dimensional universities**
- **IIT(BHU) is already inside one!**

Lead by example, taking people along!

III. Tasks

(Achieving the Vision on the Ground)

Outline

Tasks as seen in the following dimensions:

- 1 Academics**
- 2 Faculty**
- 3 Research**
- 4 Industrial outreach**
- 5 Alumni Affairs**
- 6 Students**
- 7 Administrative**
- 8 Construction**

1. Academics

- **Academic regulations – UG and PG Ordinances**
 - **New grading system**
 - **Relative grading**
 - **Periodical exams**
 - **Graded attendance rules - stricter implementation**
 - *Process: 3 Senate meetings, 3 Senate Executive Committee meetings, 2 workshops with entire faculty. Attempt to take everyone on board.*
- **Teaching-learning processes**
 - **Introduction of tutorials**
 - **Using students as tutors and TAs (from PhD, MTech, senior UG students)**
 - **Course portals (using Moodle) (ongoing)**
 - **Course feedback of students (to be done this semester)**

...1. Academics

- **Major review of UG curriculum** (*process started - Senate decision 30th July 2013*). **Some possibilities:**
 - **Layered learning - practice-theory-practice**
 - **Research orientation even at UG level**
 - **Innovative UG projects of societal relevance**
 - **More humanities courses including Human Values**
- **Major revamping of teaching labs** (*process started Jun 2013*)

2. Faculty

234 regular faculty members

- **IIT pay scales require scrutiny of current faculty** (*started processing. Agenda item later.*)
- **Hiring new faculty - Rolling ad - Started with Asst. Prof.** (*processing of applications going on*)

3. Research

Thoughts:

- **Seed funds for new faculty**
- **Sprouting funds - to existing faculty for labs. (possibly Rs.20. lakhs for groups of 4 faculty members)**
- **Identify major research initiatives – R&D perspective plan** (*process started mid June*)
- **Addressing repair and maintenance of equipment**
- **Funds for consumables - Give to dept., control by individual faculty**

At advanced stage of processing (started Jan. 2013):

- **Establishment of a central analytical instrument facility (Rs.30.crores)**

4. Industrial & Social Outreach

- **Industrial outreach - In touch with several companies, e.g., PowerGrid, Coal India, SAIL, etc. Activities to be started with MoU.**
- **Technical outreach through societal projects (*future*)**
- **Incubation and entrepreneurship (*ongoing*)**

5. Alumni Affairs

- **Alumni very active. Wish to contribute:**
 - through donations
 - through other help
- **Many alumni events - Bangalore (30 Jun 2013), New Jersey, USA (21 Sept 2013)**

Alumni Affairs Committee set up with office

6. Students

Holistic education including building of character through

- **Extra-curricular activities**
 - **Physical activities**
 - **Cultural activities**
 - **Festival celebrations**
 - **Service activities**
 - **and through Hostel life**
- **Humanities courses including human values**
- **Institute practising what it preaches**

7. Administrative

- **Simplification of procedures and processes**
- **Decentralization of administration**
- **Computerization**

**Formed *Administrative Review Committee* 12 Aug. 2013.
Started functioning.**

8. Constructions

- **Infrastructure needs major maintenance, repairs and overhaul**
- **New constructions – Faculty quarters, academic block, other additions**
- **Lack engineering office ! (*Plan to start one*)**

- **Building Works Committee (statutory)**
- **Institute Works Committee**

In Conclusion

- **Started with academics**
 - Academic regulations
 - Teaching learning processes
 - Computerization of academic system
- **Moved to**
 - faculty affairs - faculty recruitment, IIT pay scales
 - Research & Development
 - Administrative review and reform - simpler processes, computerization
- **To take up in future**
 - Industrial and societal outreach
 - Construction
 - Next stages of Academics, Humanities, R&D, Admin, Finance

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Thank you