**JAYAWANT SHIKSHAN PRASARAK MANDAL'S**

**BHIVARABAI SAWANT INSTITUTE OF TECHNOLOGY & RESEARCH, WAGHOLI, PUNE**

(Approved by AICTE, New Delhi & DTE Maharashtra Govt. Affiliated to SPPU, Pune)

## DTE College Code: 6311

Gat No. 720(1/2), Nagar Road, Wagholi, Pune, Maharashtra 412207
Phone: 020 6733 5100

## Report on the Student Attributes Facilitation by the HEI (BSIOTR)

**Quality education is the fundamental right of every Indian citizen. Quality Education lays the good foundation for Individual growth. Jayawant Shikshan Prasarak Mandal (JSPM) committed to impart quality education, to create skilled man power to the nation.**

# About Institute:

BSIOTR was established by JSPM in 2009 in Wagholi, Pune with the aim of imparting quality technical education. Institute is well recognized by the stakeholders by its core value which emphasize on human values and professional ethics.

# Institute Vision statement:

"To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring students, which will prepare them to face global challenges maintaining high ethical and moral standards."

# Institute Mission statements:

"Satisfy the aspirations of youth force, who want to lead nation towards prosperity through techno-economic development."

# Graduate Attributes Followed

# In Bhivarabai Sawant Institute of Technology & Research, Wagholi, Pune-412 207

| K | A | D | I |
|---|---|---|---|
| Applying Knowledge | Problem Analysis | Design & Development | Investigation of Problems |
| M | E | E | T |
| Modern Tool Usage | Engineer &Society | Environment Sustainability | Ethics |
| T | O | M | I |
| Individual &Team work | Communication | Project Management &Finance | Life Long Learning |

# Facilitation of Graduate Attributes by the Institution

Graduate attributes are important factors in planning the curriculum of undergraduate and post graduate programme. Graduate attributes have now become one of the core sets of higher education outcomes that every graduate should posses. BSIOTR have designed curriculum to incorporate graduate attributes in teaching and learning process. As per demand of society, industry and global competitiveness, we always strive to develop our students by adopting appropriate approach of teaching and learning, according to graduate attributes by providing various facilities as follows:

## I. K-Engineering Knowledge

Context to Engineering Knowledge:

> *Apply the knowledge of Mathematics, Science, Engineering Fundamentals for the solution of complex societal, Industrial and academic problems.*

Facilitated by Institute to Graduates:

1. Providing the proficiency in applied mathematics and applied sciences to develop the skills among the students towards mathematical modeling.
2. Inculcate to apply knowledge of applied Mathematics and sciences; we are assigning the mini and major projects for design, development and implementation with innovative ideas as per SPPU guidelines.
3. Guiding our graduates by expertise available in the institution, national international mentors for Identification and Verification of problems in diversified fields of engineering and technology.
4. Inculcate orientation to observe the problem in the society and industry by learning concept in the classroom and correlating the same to get knowledge about the problems to implement or write case study.
5. We have adopted various teaching & learning methodology to imparting knowledge regarding the concept for better understanding (Animated video, Simulation, emulation, roll plays etc.).
6. Various teaching aids are utilized to deliver the contents of syllabus.

7. Organizing expert lecture, guest lecture, technical paper presentation competition, Project exhibition, Group discussion as recent trends in global competitive market.
8. ICT based class rooms
9. Wi-FI campus
10. Imparting Critical understanding level of the students.
11. Dissemination of the current technological developments in the subject time to time.
12. Well stacked library
13. Conducting expert lectures to give knowledge about to make career in Public sector, Private sector, Govt. sector etc.
14. Transport facility available to visit organizations/industry to get knowledge about recent technology.
15. Awareness about current research and various scholarships for further education.

## II. A-Problem Analysis

## Context to Problem Analysis:

> *Engineering graduate students will be able to solve Engineering problem in diversified fields.*

## Facilitated by Institute to Graduates:

1. Developing ability to use appropriate knowledge and skills to identify problems by visiting various industries, and NGOs, GOs etc.
2. To formulate and analyze the problems by imparting theoretical knowledge, various methodologies as follows:
   a. Mathematical tools
   b. A collection of statistical methods
   c. Computational tools
   d. Practical knowledge (experience)
   e. Technological resources (Well equipped Laboratories)
   f. Well stacked  library
3. For solving complex engineering problems; we have established Industry Institute Interaction Cell (IIIC), to reach optimum solution for any industrial problems.

4. Institute is allowing to do the project in association with corporate sectors (any relevant industry) under the guidance of internal guide of institution and industry expert. i.e. sponsored project from various organization.

## III. D- **Design & Development**

## Context to D- Design & Development:

*A graduate student will demonstrate the ability to design, implement and evaluate a system, process, component and program to meet desired needs within Realistic constraints.*

## Facilitated by Institute to Graduates:

1. Established Industry Institute Interaction cell (IIIC)
2. Developing an ability to design solutions for complex, open-ended engineering problems by providing industrial visits and interaction with IIIC members periodically.
3. Providing infrastructure and funding to develop prototype of their projects to participate in national and international competitions to represent their innovative ideas viz. robotics competitions, SAE (Society of automotive engineers) INDIA: BAJA.,
4. Provides expert lectures on design the systems that meet specified needs with appropriate attention to health and safety risks while developing the system.
5. Give awareness about the standards, economic, environmental, cultural and societal considerations by conducting co-curricular activity in every academic year.
6. Providing platform to present and work in heterogeneous group by forming student forum of national societies like, IETE, ISTE, IEEE, etc.

## IV. I-Investigation of Problems

## Context to I-Investigation of Problems:

*Engineering graduates should investigate, formulate, analyze and provide optimum solution to any technical problem in society and industry.*

## Facilitated by Institute to Graduates:

1. Develop an ability to conduct survey to collect the problems in the society, industry and academic institutions etc.
2. Impart to students; how to investigate industrial problems by discussion with members of IIIC.
3. Investigations of complex problems by various methods that include appropriate experiments performing in the laboratories with help of industry experts, teachers, and mentors.
4. Many books are there in central library for analysis and interpretation of data and synthesis of information in order to reach concrete solution.
5. e-Journals as well as hard copies of standard journals are available.
6. Digital Library facility.
7. ICT based board room available for the group discussion.
8. Interactive white board and LCD projector are available in the board room.

## V.  M-Modern Tool Usage

## Context to Modern Tool Usage:

*A graduate student will provide solutions by using the Modern Engineering Tools and practices for engineering problems in the societal and industrial. And to create, select, and apply appropriate techniques, resources and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations*

## Facilitated by Institute to Graduates:

1. Modern computational tools Like ;
   a. MATLAB,
   b. MULTISIM,

    c. CAD-CAM,

    d. CATIA,

    e. PTC creo,

    f. Mechdesigner,

    g. Rhino,

    h. Turbo CAD designer

    i. Engineering ToolBOX

    j. Eagle PCB Design software

    k. CAD-Feko

    **l. All open source software recommended on AICTE website.**

2. Expertise provided as per requirement of students about mathematical and computational tools.

3. Many Books are available in the library about the mathematical and computational tools.

4. Inculcate awareness about the recent relevant tools available in market by conducting workshop, seminar by calling industry expert or internal faculty members.

## VI. E- Engineer and Society

Context to Engineer and Society:

> *A graduate student will demonstrate the ability to learn the impact of industries on society by visiting different industries and understand the importance of industrial products.*

Facilitated by Institute to Graduates:

1. Industrial visits to learn the impact of Industries on Society.

2. Providing guidance to write report on industrial visits. (to find what factors are affecting society and what factors are beneficial to society)

3. Awareness about the **"Make In India", "Digital India"** to develop small projects that can be beneficial to rural part of India.

4. Established NSS forum in the institution in association with SPPU.

5. Every year students are visiting rural area and finding their problems and providing possible solution to them.

6. Arranging NSS camp to create awareness about safety, pollution, advance technology etc.

7. Established scheme of "EARN & LEARN" in association with SPPU.

8. Wall Magazine; to display current affairs about recent technology related to society.

9. Visit to orphanage under NSS.

10. Plantation under NSS activity.

11. **"Swachha Bharat  Abhiyan"** Under NSS activity.

12. Monetary help to farmers those suffered from drought.

13. Transport facilities provided for students and staff

# VII.  E-Environment Sustainability

## Context to Environment Sustainability:

*A graduate student will understand the importance of environmental issues and will design sustainable systems.*

## Facilitated by Institute to Graduates:

1. Earth Day Celebration by NSS students' forum.

2. Conducted seminar on "SAVE RIVER" by  *ISHA FOUNDATION, Pune*

3. Inner Engineering: A Yogi's Guide to Joy : YOGA DAY celebration.

4. Tree Plantation in nearby villages  under the banner of NSS

5. E-waste management system is there in the institution.

6. Awareness to green energy concept by conducting seminar, workshops etc.

7. Books are available about the environment sustainability for students.

8. Visit to wind power plant and awareness camp about green energy.

9. Seminar on controlling energy consumption

10. Non-Vehicle day celebration and sharing vehicle to reduce air pollution.

11. Bonding and healthy relationship with stakeholders and community by conducting parent meet, industry institute interaction to give awareness on environmental condition and engineering.

12. Awareness to apply engineering solutions to environmental issues and to evaluate its impact on public health.

# VIII.  T-Ethics

## Context to T- Ethics:

*A graduate student will understand the professional and ethical responsibilities to meet the socioeconomic challenges.*

## Facilitated by Institute to Graduates:

1. Familiar with ethical principles by reading the booklets about the professional ethics and human values.

2. Conducting workshops and seminar on relevant topics by calling national mentors to impart the quality ethics.

3. Professional responsibilities given in all co-curricular and extracurricular activity.

4. NSS forum

5. Project allocation within group.

6. Co-curricular programs and activities that will develop the ethics competency among the students.

7. We are designing Curriculum that will develop the ethics competency.

8. Celebrating **"GANPATI UTSAV"** to show honesty and integrity among the students.

9. Code of conduct ; www.bsiotr.org/downloads/Code of Conduct for studnets.pdf

10. Professional Ethics; http://www.bsiotr.org/downloads/HVPE_BSIOTR.pdf

## IX.   T-Individual and Teamwork

## Context to T- Individual and Teamwork:

*A graduate student will demonstrate the ability of self learning during the Project work in individuals and team work for successful implementation of project management.*

## Facilitated by Institute to Graduates:

1. We are developing following skills among the graduates by conducting seminar, workshop and designing curriculum with relevant activities:

- ✓ Interpersonal skills:
- ✓ Listening skills
- ✓ Personal characteristics
- ✓ Understanding own role/others roles
- ✓ Team relationships
- ✓ Interprofessional learning
- ✓ Equality of relationships
- ✓ Hierarchical/traditional role of engineer
- ✓ Positive attitude
- ✓ Assertiveness/confidence
- ✓ Reciprocity within team
- ✓ Trust

2. Assigning mini-projects to individual
3. Assigning Major projects within group
4. Conducting sports and cultural activity in every academic year **(Annual Social Gathering: NAKSHTRA)**
5. Conducting Technical Activity; CYNOSURE, TECHNOVATION, TECHNOMANIA etc. in every academic year.
6. Library facilities with relevant books and magazines
7. Hobby Clubs established for the students

## X. O- Communication

## Context to O-Communication:

*A graduate student will be able to communicate effectively at different technical and administrative levels*

## Facilitated by Institute to Graduates:

1. Asking question in last five minutes of every lecture so that they can communicate what they learn in the entire lecture.
2. Concentrate on following key aspects of communication so that students should be able to communicate well by conducting guest lecture, expert lecture workshops etc.

   a. Be detailed and unambiguous about the concept

   b. Respect your language and use it well

   c. Inculcate to Improve vocabulary all through student life and also pay attention to the right pronunciation of each word.

   d. Pay attention to your body language as well

   e. Also pay attention to your tone and diction

   f. Use silence wisely

   g. Check your facts: details about the things before speaking

   h. Be grater listener

   i. Take due care that people are emotional beings when you are communicating

   j. Conflict & conflict resolution
3. Events conducted: Group Discussion, Debate competitions on current topics.

4. Ask to prepare and draft project reports, industrial visits report in standard formats and verifying by experts.

# XI.  M-Project  Management and Finance

## Context to M-Management and Finance:

*A graduate student will have knowledge on engineering management and finance to handle projects effectively*

## Facilitated by Institute to Graduates:

1. Subjects taught related to management, six sigma, TQM etc.
2. Applying managerial skills by establishing students' forum with management body of students' representatives.
3. Guiding to develop plan of activities in the institution; institute level, inter college, state level, Regional level, National level etc.
4. Inculcate the importance of financial management by considering following keys:
    a.  Planning of expenditure
    b.  Monitor financial position by students committee according to events.
    c.  Cash flow is important in activity management so treasurer appointed to each and every activity.
    d.  They should grasp day to day operational cost about the requirement.
    e.  Preparing Up-to-date financial record for each event.
    f.  Imparting or guiding to tackle financial problems if arise
5. Finance management by handling accounts of student forum on Department level.
6. Assigning project in groups so that they can handle various situations individually.
7. Selecting volunteers from each department to conduct various co-curricular and extracurricular activities.
8. General Secretary to lead the Annual Social Gathering; "NAKSHTRA"

## XII.  I-Lifelong Learning

## Context to I-Lifelong Learning:

*A graduate student will demonstrate the ability to keep abreast with advance technologies through lifelong learning*

## Facilitated by Institute to Graduates:

1. To inculcate the habit of learning and self-learning.
2. Innovation and Knowledge Management awareness by internal and external mentors.
3. Alumni association meet and discussion about requirement and advancement in society, industry etc.
4. Inculcate flexibility to adopt recent trends in the global competitive market.
5. Guiding; how to understand more profoundly the nature of innovation.
6. Imparting positive attitude by gathering examples of innovative practice.
   a. http://www.vidvalakshrni.co.in/
   b. http://www.sakshat.ac.in/
   c. http://mhrd.gov.in/e-contents
   d. http://mhrd.gov.in/technical-education
   e. http://mhrdnats.gov.in/

# UG & PG courses manifest upon GAs according to revised bloom's taxonomy level:

Bloom's Revised Taxonomy provides a systematic classification of the processes of thinking and learning. The cumulative hierarchical framework involves six categories. Each of these categories requires the understanding /completion of the prior skill or level before moving onto the next level up. In the face of dramatic changes to teaching over the past five decades, Bloom's Taxonomy is still widely used in contemporary teaching. The Revised Taxonomy provides a clear, concise visual representation of the alignment between standards and education goals, objectives, and activities for development of students.

- **Remembering:** Retrieving, recognizing, and recalling relevant knowledge from long-term memory.

- **Understanding**: Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.

- **Applying:** Carrying out or using a procedure through executing, or implementing.

- **Analyzing:** Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.

- **Evaluating:** Making judgments based on criteria and standards through checking.

- **Creating:** Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.
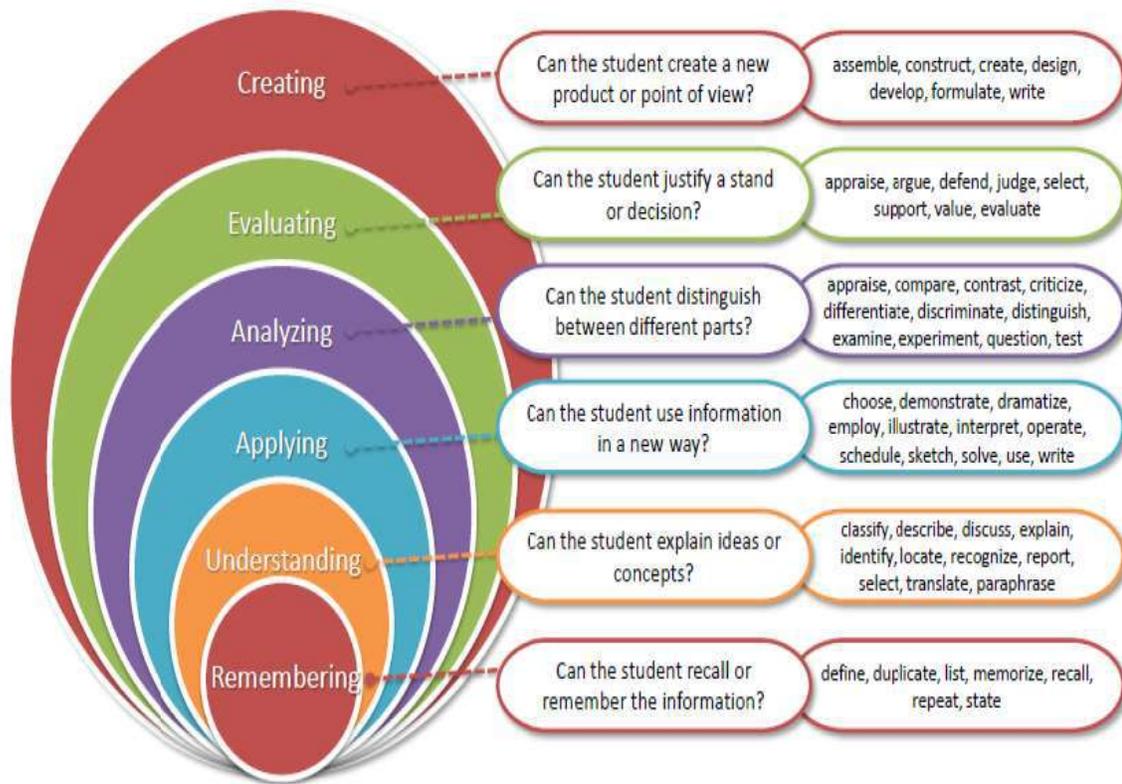
## Revised bloom's taxonomy levels



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