KALPATARU VIDYA SAMSTHE®
KALPATARU INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.
NBA Information Flyer

Vision and Mission of the Institute

Vision

To bring forth technical graduates of high calibre with a strong character and to uphold the spiritual and cultural values of our country.

Mission

To impart quality technical and managerial education at graduate and post graduate levels through our dedicated and well qualified faculty.

Vision and Mission of the Department

Vision

To become a leading department in Electronics and Communication Engineering, fostering innovation, research, and social responsibility.

Mission

M1	To promote research, innovation, and entrepreneurship in Electronics and Communication Engineering, addressing real-world challenges.
M2	To foster collaboration and knowledge sharing between academia, industry, and government, advancing the field of Electronics and Communication Engineering.
M3	To provide a supportive and inclusive learning environment, encouraging diversity, creativity, and critical thinking.

Program Educational Objectives (PEOs):

PEO1	Graduates will be able to design and develop innovative solutions in electronics and communication engineering, applying fundamental concepts, mathematical and scientific principles, and modern tools to address real-world challenges.
PEO2	Graduates will be able to analyze complex engineering problems, using critical thinking, creativity, and problem-solving skills to develop effective solutions that consider social, environmental, and ethical implications.
PEO3	Graduates will be able to communicate effectively and work collaboratively in diverse teams, demonstrating strong interpersonal skills, leadership abilities, and a commitment to lifelong learning.

PEO4	Graduates will be able to develop sustainable and environmentally responsible solutions, applying knowledge of environmental and social impacts to design and develop solutions that minimize harm and promote sustainability.
PEO5	Graduates will be able to pursue lifelong learning and professional development, staying up to date with advances in electronics and communication engineering, and continuously improving their skills and knowledge to adapt to changing technological and societal needs.
Program Outcomes (POs)	
PO1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem Analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO3	**Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems.
PO5	**Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. .
PO6	**The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical princ iples and commit to professional ethics and responsibilities and

	norms of the engineering practice.
PO9	**Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long Learning**: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.
Program Specific Outcomes (PSOs)	
PSO1	Graduate will be able to apply the fundamental concepts of electronics and communication engineering to design a variety of components and systems for applications including image processing, communication, networking, VLSI and control system.
PSO2	Graduates will be able to analyze and apply concepts in communication/networking, signal processing, embedded systems, and semiconductor technology to design and develop innovative solutions.

Education plays a vital role in the development of any nation. Therefore, there is a premium on both quantity and quality (relevance and excellence of academic programs offered) of higher education. Like in any other domain, the method to improve quality remains the same, that is, finding and recognizing new needs and satisfying them with products and services of international standards.

The National Board of Accreditation(NBA) works very closely with stakeholders (faculty, educational institutions, government, industries, regulators, management, recruiters, alumni, students and their parents) to ensure that the programs serve to prepare their graduates with sound knowledge of fundamentals and to develop in them an adequate level of professional competence, such as would meet the needs of the engineering profession locally as well as globally.

Students should know that the National Board of Accreditation (NBA) is an autonomous body that assesses

and accredits the quality of technical and engineering programs in India, ensuring they meet specific standards and promoting excellence in technical education.

The Objectives of the NBA

- To assess and accredit the technical education programs.
- To evolve standards and parameters for assessment and accreditation in line with the parameters laid down by the appropriate statutory regulatory authority for co-ordination, determination and regulation of standards in the concerned field of technical education.
- To promote excellence through a benchmarking process, which is helpful in determining whether or not an institution is able to achieve its mission and broad-based goals, and in interpreting the results of the outcomes assessment process.
- To promote quality conscious system of technical education where excellence, relevance to market needs and participation by all stakeholders are prime and major determinants.
- To build a technical education system as facilitator of human resources, that will match the national goals of growth by competence, contribution to economy through competitiveness and compatibility with societal development.
- To set the quality benchmarks targeted at global and national stockpile of human capital in all fields of technical education.
- To conduct evaluation of self-assessment of technical institutions and/or programs offered by them on the basis of guidelines, norms and standards specified by it; and
- To contribute to the domain of knowledge in quality parameters, assessment and evaluation.

The vision of the NBA

To be an accrediting agency of international repute by ensuring the highest degree of credibility in assurance of quality and relevance of professional education and come to the expectations of its stakeholders, viz., academicians, corporate, educational institutions, government, industry, regulators, students, and their parents.

The Mission of the NBA

To stimulate the quality of teaching, self-evaluation and accountability in the higher education system, which help institutions realize their academic objectives and adopt teaching practices that enable them to produce high-quality professionals and to assess and accredit the programs offered by the institutions imparting technical and professional education.

Outcome-based Education and Accreditation

Outcome-based education is targeted at achieving desirable outcomes (in terms of knowledge, skills, attitudes

and behavior) at the end of a program.

What is accreditation?

Accreditation is a process of quality assurance and improvement, whereby a program in an approved Institution is critically appraised to verify that the Institution or the program continues to meet and/or exceed the Norms and Standards prescribed by regulator from time to time. It is a kind of recognition which indicates that a program or Institution fulfills certain standards.

Purpose of Accreditation

The National Board of Accreditation (NBA) promotes excellence in technical education through accreditation, benefiting institutions, students, employers, and the public. The accreditation process:

- Supports institutions in maintaining and enhancing quality.
- Provides confidence and assurance of quality to stakeholders.
- Assures government departments and other bodies of an institution's good standing.
- Enables institutions to publicly demonstrate their commitment to quality education.

The NBA's developmental approach encourages continuous quality improvement, promoting excellence in technical education.

Benefits of Accreditation

- Helps the institution to know its strengths, weaknesses and opportunities.
- Initiates institutions into innovative and modern methods of pedagogy.
- Gives institutions a new sense of direction and identity.
- Provides society with reliable information on quality of education offered.

The Impact of Accreditation

- Encourages quality improvement initiatives by institutions.
- Improves student enrolment both in terms of quality and quantity.
- Helps the institution in securing necessary funds & Enhances employability of graduates.
- Facilitates transnational recognition of degrees and mobility of graduates &professionals.
- Motivates faculty to participate actively in academic and related institutional /departmental activities.
- Helps create sound and challenging academic environment in the institution; and
- Contributes to social and economic development of the country by producing high quality technical manpower.

Assessment

Assessment is one or more processes, carried out by the institution, that identify, collect, and prepare data to evaluate the achievement of program educational objectives and program outcomes.

Evaluation

Evaluation is one or more processes, done by the evaluation team, for interpreting the data and evidence accumulated through assessment practices. Evaluation determines the extent to which program educational objectives or program outcomes are being achieved, and results in decisions and actions to improve the programme.

Mapping

Mapping is the process of representing, preferably in matrix form, the correlation among the parameters. It may be done for one to many, many to one, and many to many parameters.

Attainment

In the context of the National Board of Accreditation (NBA) and Outcome-Based Education (OBE), "attainment" refers to the degree to which students achieve the defined Course Outcomes (COs) and Program Outcomes (POs), which are the skills, knowledge, and behaviours they are expected to acquire during their program.

1. What is the NBA?

The NBA is an autonomous body responsible for assessing and accrediting technical education programs in India.

It focuses on programs in engineering, computer application, pharmacy, management, hotel management, and catering technology.

NBA is a full member of the Washington Accord, which recognizes the equivalence of engineering programs accredited by NBA.

NBA's main objective is to ensure the quality of technical education provided through different professional and technical programs in Indian institutes.

2. Why is NBA Accreditation Important for Students?

Employer Recognition: Employers value degrees from accredited programs, demonstrating a commitment to quality and industry relevance.

Global Standards: NBA accreditation ensures technical institutes meet global standards.

Continuous Improvement: Accreditation promotes ongoing improvement in programs and facilities.

Career Advancement: NBA accreditation enhances career prospects by demonstrating competence and knowledge.

The NBA's accreditation framework focuses on Graduate Attributes, which define the expected capabilities, competence, and skills for graduates, varying by discipline and level.

3.Why is NBA Awareness Important for Students?

- **Quality Assurance:** NBA accreditation ensures programs meet industry-relevant quality standards.
- **Enhanced Employability:** Graduating from an NBA-accredited program boosts employability.
- **Global Recognition:** NBA accreditation facilitates international recognition, attracting global students and faculty.
- **Better Learning Experience:** Accreditation promotes continuous improvement in teaching and learning practices.
- **Career Advancement:** NBA-accredited programs can lead to better career opportunities and higher salaries.

Course Outcomes (COs)

"Course Outcomes (COs) are specific statements that describe what students are expected to know and be able to do upon completing a course. COs focus on the skills, knowledge, and behaviours acquired through a particular course, contributing to the broader Program Outcomes (POs). COs are mapped to POs based on their relevance, with each CO potentially influencing one or more POs, and each PO being supported by multiple COs".

Program Educational Objectives (PEOs)

" Program Educational Objectives (PEOs) describe the expected career achievements and professional accomplishments of graduates in the first few years after graduation, outlining what they are expected to perform and achieve ".

Program outcomes (POs)

" Program outcomes are statements that describe the knowledge, skills, and abilities students are expected to demonstrate upon completing a program of study ".

Program Specific Outcomes (PSOs)

" Program Specific Outcomes (PSOs) define the skills and knowledge students should possess upon graduation. PSOs are tailored to each program and crafted by the respective department. Typically, a department outlines 2-4 PSOs that reflect the program's unique objectives and requirements ".

Sample questions to students

1. How has your educational experience measured up to your expectations?
2. Comment on facilities such as laboratory, IT access, information resources and project work.
3. Are you providing feedback as part of a quality/program improvement mechanism?
4. To what extent does the program provide for your personal and professional capabilities development? Are there measures of your personal development and performance such as teamwork, leadership, management, communication and presentation skills, self- learning capacity etc.? Are these systematically addressed in subjects studied?
5. Have issues such as globalization, ethics and sustainable practices been addressed yet?
6. What improvement would you make if you had a magic wand?
7. Did you make use of online learning facilities? What are they? Do they make a difference?
8. Do you feel that you understand the targeted outcomes for your program and the real nature of professional practice in your chosen domain? How was this understanding established?
9. How successful are faculty members as role models of the professional engineer?
10. How accessible are faculty?
11. Did you get exposure to sessions or guest lectures by practicing professionals? Are these well-organized and well-presented?
12. What do you think are the key attributes an employer would be looking for in a graduate engineer?
13. How effective are subject outlines in communicating objectives and learning outcomes?
14. Is assessment well-coordinated with objectives and targeted learning outcomes within academic units?
15. Are there other avenues of embedded professional practice exposure other than placement activities such as industry visits, field trips, industry assignments, case studies, industry-based projects etc.? Is there sufficient exposure to professional practice?
16. How effective is laboratory learning? Are experiments prescriptive or open-ended?
17. What was the nature of project-based learning in your program?
18. Have you been involved in any team-based learning activities yet? Have you become a good team player and/or team leader? Are you assessed for your team performance?
19. Do you have input in the quality system, and is your feedback effective?
20. What skills are you expected to acquire at the time of graduation? Comment on attainment of the program educational objectives.