1. PREAMBLE

This Strategic Plan: 2015-21 of NIE has been drawn up through a process of consensus building. Even while this process was on, implementation of several elements of the plan has been taken up. The targets of the Strategic Plan and the vision underlying the plan are presented in the following sections.

1.1 Historical Background

NIE was founded in 1946 by visionary engineers – Sri S Ramaswamy, Sri D V Narasimha Rao, Sri T Rama Rao – with the support of 13 other eminent persons. The first batch of 86 students attended classes in a rustic room with thatched roof in Lakshmipuram. Later, the classes were held in a temporary shed in Sharada Vilas High School campus. With the untiring efforts of the founders and philanthropists, in 1950 NIE had its own classrooms and workshops on a sprawling 6-acre plot. Also, it became the second engineering college in the earstwhile Mysore state, and the first in Mysore city; thereby earning the sobriquet, “the pride of Mysore”. It was conferred the status of “private-aided Institution” under grant-in-aid code of the state government.
1.2 NIE Today

NIE today stands at the **28th** position among India’s top 100 Engineering Colleges that include IITs and NITs and **2nd** in Karnataka as per the survey conducted by *Outlook* magazine (May 2015).

NIE has well qualified and highly dedicated faculty members and has high-end infrastructure. The Board of Directors of NIE has been always promoting continuous improvement in delivery of technical education. The concerted efforts of stakeholders at NIE made it get autonomous status, and grants under prestigious TEQIP I & II (Technical Education Quality Improvement Programme of World Bank-MHRD) NIE has been granted permanent affiliation by Visvesvaraya Technological University (VTU), Belagavi.
1.3 Programmes Offered

NIE is offering Undergraduate, Post-graduate and Research programmes in several engineering disciplines. They are:

1.3.1 Undergraduate Programmes (B.E.)

- Civil Engineering (1950, 120)
- Mechanical Engineering (1958, 180)
- Electrical & Electronics Engineering (1958, 60)
- Electronics & Communication Engineering (1971, 120)
- Industrial & Production Engineering (1974, 60)
- Computer Science & Engineering (1983, 120)
- Information Science & Engineering (1999, 120)
- Civil Engineering – Evening Programme (1974, 60)

1.3.2 Postgraduate Programmes (M.Tech)

- Power Systems (1971, 18)
- Hydraulics Engineering (1971, 18)
- Production Engineering & System Technology (1987, 12)
- Computer Application in Industrial Drives (1996, 18)
- Information Technology (2002, 18)
- Industrial Automation & Robotics (2011, 18)
- Structural Engineering (2012, 18)
- Computer Network Engineering (2012, 24)
- Nano-Technology (2014, 24)
- Master of Computer Application (MCA) (1997, 60)

1.3.3 Research Programmes (M.Sc., Ph.D.)

- Civil Engineering
- Mechanical Engineering
- Electrical & Electronics Engineering
• Electronics & Communication engineering
• Industrial & Production Engineering
• Computer Science and Engineering
• Physics
• Chemistry

1.3.4 Centres of Excellence
• Water Resources Centre (WRC) 1989
• Centre for Research & Consultancy (WRC) 2000
• Centre for Composite Materials Research (CMR) 2000
• Centre for Energy Management & Test Systems for Electrical Apparatus (CEMATEA) 2002
• Building Fire Research Centre (BFRC) 2004
• CNC Training Centre (CNC-TC) 2006
• Centre for Renewable Energy & Sustainable Technologies (CREST) 2007
• NIE-Eicher Centre for Automobile Technology (NECAT) 2009
• Innovation & Entrepreneurship Development Centre (IEDC) 2010
• Software Development & Solution Centre (SDSC) 2010
• Centre for Nano-Technology (CNT) 2011
• Centre for Automation Technology (CAT) 2014
• Centre for Training in Advanced Technology (CTAT) 2014

NIE is a recognized QIP Research Centre of VTU and AICTE.

1.4 Vision, Mission and Values

We have recognized the need for excellence to continuously improve our academic programmes and laboratory infrastructure on par with industry requirements. We started introspecting about our core purpose in terms of why we exist, what are our strengths and weaknesses and what are the emerging opportunities during the visioning exercise.
carried out during the year 2003. This exercise involved multiple deliberations among the governing council members, the management and faculty members of the institution. The vision exercise identified three core areas, which required concerted efforts and focus in order to realize the vision of NIE as a global leader in technical education, namely,

- Academic excellence as measured by faculty of international repute
- Financial independence and stability
- Socially relevant in terms of addressing and providing solutions to contemporary challenges faced by India and the global community.

The outcome of the visioning exercise was the articulation and spread of our vision, mission and core values which are stated as:

1.4.1 Our Vision

NIE will be a globally acknowledged institution providing value-based technological & educational services through best-in-class people and infrastructure.

1.4.2 Our Mission

- To impart state-of-the-art engineering education through strong theoretical foundations and practical training to students in their choice of specialization
- To create new knowledge through innovation and cutting-edge research in science and engineering
- To provide a platform for inclusiveness and collaboration by following ethical and responsible engineering practices for long-term interaction with academia and industry
- To encourage entrepreneurship and to develop sustainable technologies for the benefit of global society.
1.4.3 Our Values

Integrity and Accountability

- **Integrity** refers to honesty or trustworthiness in the discharge of duties and responsibilities
- **Accountability** refers to the obligation on the part of staff and students to report on the usage of resources and to meet stated performance objectives

Cooperation and Collaboration

- **Cooperation** refers to sharing of information and resources to help each other to do a better job
- **Collaboration** refers to building a strong relationship with partners like industry, institution, R &D organisations

Professionalism and Dedication

- **Professionalism** refers to adherence to courtesy, honesty and responsibility when dealing with students, colleagues and stakeholders, in general
- **Dedication** refers to complete and wholehearted act to achieve set purposes and goals

Intellectual Excellence and Innovation

- **Intellectual excellence** refers to ability of an individual to perform, achieve, and/or excel in scholastic activities, and to participate in enrichment programmes
- **Innovation** refers to building strength in the area of research interest other than core functional areas with innovative ideas and methodology
Social and Moral Responsibility

- Social and moral responsibility refers to the required understanding of the consequences of one’s actions and the impact of these actions on others, and emphasizes character and moral development in the institution.

1.5 Strategic Plan 2010-2015

The visioning exercise enabled the articulation of the institutional vision and provided the base data to chalk out the strategic plan for NIE. The visioning exercise, in hind sight, was a precursor to the success of NIE as one of the beneficiaries of TEQIP-I. Thanks to TEQIP, the institution was able to take major steps in strengthening the undergraduate programmes by modernizing existing laboratories as well as by setting up several state-of-the-art Centers of Excellence.

The year 2010 has been a watershed year for NIE, which witnessed a series of meetings, brainstorming among faculty and interactions with the industry, with the purpose of assessing our Strengths, Weaknesses, Opportunities and Threats (SWOT). We took the support of a professional consulting group to conduct an assessment of SWOT, both at the institute level and at the department levels. The reasons for bringing in external experts were two-fold; firstly to ensure the application of sound methodology and second was to seek unbiased assessment.

The SWOT exercise output was documented and analyzed for patterns to arrive at an institutional level SWOT picture. The training needs of individual faculty and technical staff were identified keeping in mind the individual's
interests and also the NIE’s focus on key domain areas in terms of undergraduate, post-graduate and Ph.D. programmes and research and development. The identification of domain focus areas was based on both internal strength and external opportunity.

A blueprint of Strategic Plan for the next five years was developed, which guided all the developmental activities of the institute (Ref. TEQIP-IDP/NPIU, 14.8.2010). The Strategic Plan focused on the three thrust areas of intellectual infrastructure, courses and service offerings and institution building. A summary of the recommendations of the plan, as well as the key achievements, is provided in this section.

1.5.1 Intellectual Infrastructure

We took a conscious decision to promote life-long training for all the teaching and technical staff of the institute to ensure that there was no laxity in keeping pace with global standards of technical education. We identified gaps in training and evolved an action plan with definite time lines to ensure adequate training to the needy. Research and consultancy is viewed as a means of positively impacting faculty development, publications and IP creation. The Strategic Plan for research and consultancy is designed to drive the future efforts by making faculty aware of shared interests and opportunities, and available support from government, industry, private foundations and individuals.

The Institute decided to take several concrete steps in order to strengthen collaboration with industry. In the Strategic Plan for 2010-2015, the Institute
identified the following focus areas under Intellectual Infrastructure:

- Faculty development
- Research, publications and IP creation
- Pedagogy
- Students’ development
- Industry and society linkages

1.5.2 Courses and Service Offerings

We chalked out the strategy to tie-up with industries and institutes of repute both in India and abroad. Collaboration with international organizations not only enhances our core strengths, but also provides the benchmark to assess our own strengths and weaknesses.

SWOT analysis conducted earlier enabled us to identify a number of specific initiatives focusing on the following areas:

- Doctoral & Master’s level programmes
- New disciplines / areas
- Collaborative approaches with other institutions
- Multi-disciplinary areas
- Curriculum design and academics

1.5.3 Institution Building

Four separate and interrelated areas of focus were identified, which were critical for the Institute’s financial health and growth. These areas are shaped by and underlie all other elements of Strategic Plan:

- Leadership & governance practices
- Building financial strength
- Alumni network
- Physical infrastructure
With substantial scaling up of activities, NIE laid emphasis on improving processes, organizational accountability and functional transparency. We decided to bring in decentralization of functional areas in order to promote second level leadership and be response to changes.
Table-1: Summary of Major Achievements

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<thead>
<tr>
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<tbody>
<tr>
<td>Intake UG</td>
<td>537</td>
<td>840</td>
<td>36</td>
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<tr>
<td>No. of M.Tech programmes</td>
<td>6</td>
<td>11</td>
<td>45</td>
</tr>
<tr>
<td>No. of Centre of Excellence</td>
<td>7</td>
<td>13</td>
<td>46</td>
</tr>
<tr>
<td>No. of Ph.D. awarded</td>
<td>9</td>
<td>34</td>
<td>74</td>
</tr>
<tr>
<td>No. of Ph.D. registered</td>
<td>36</td>
<td>81</td>
<td>56</td>
</tr>
<tr>
<td>No. of faculty members with Ph.D.</td>
<td>28</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>No. M.Tech awarded</td>
<td>322</td>
<td>469</td>
<td>31</td>
</tr>
<tr>
<td>No. of books of published by the faculty members</td>
<td>24</td>
<td>26</td>
<td>08</td>
</tr>
<tr>
<td>No. Papers published by the faculty members (both in National/International journals)</td>
<td>157</td>
<td>385</td>
<td>59</td>
</tr>
<tr>
<td>No. of Industry Collaborations</td>
<td>5</td>
<td>10</td>
<td>50</td>
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<tr>
<td>No. of Collaborations with foreign universities</td>
<td>2</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>No. of patent applications filed</td>
<td>0</td>
<td>15</td>
<td>Highly significant</td>
</tr>
<tr>
<td>No. of funded research projects by National funding agencies</td>
<td>5</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>
2. STRATEGIC PLAN – 2015 - 2021

2.1 Executive Summary

The broad goals of Strategic Plan: 2015–2021 are an affirmation of NIE’s commitment to excellence in technical education and research. The Strategic Plan consequently focuses on these core themes. The Strategic Plan enunciates NIE’s aim of being recognised as a global leader in technical education and research.

India’s economic growth, the need to scale up technological education, the roles of innovation and IPR in the nation’s economic trajectory and sustainability issues such as global warming have set the national context for the development of Strategic Plan: 2015–2021. India is emerging as an innovator, and the present situation offers opportunities for the country to take the lead in demonstrating how growth can be achieved in a sustainable manner. Technical Education institutions are expected to play a key role in education and research towards achieving this goal. This Strategic Plan: 2015-2021 of NIE has been drawn up, through a process of consensus building.

The Strategic Plan seeks to leverage the strengths that NIE has developed over the past six decades and to build upon them and acquire or develop new strengths. In particular, the Strategic Plan proposes to nurture the large groups of faculty working on transformational technologies that have the
potential to address the societal challenges faced in India today—specifically in areas such as water, energy, housing and education. It outlines steps to increase the quality and quantity of research output through an increase in research intensity, faculty strength, Ph.D. student enrolment, infrastructure, engagement with industry and international collaborations. The Strategic Plan envisages a doubling in sponsored research levels and a focus on lifecycle management of intellectual property. It envisions the creation of a rich incubation ecosystem that will enable entrepreneurship and value creation.

Strategic Plan: 2015–2021 identifies the following broad targets:

- Become a leading technological institution, ranked in the global top 100 in all disciplines
- Become a renowned technological institution for postgraduate education and research as the flagship for undergraduate programme
- Earn the recognition among students and research scholars that NIE is a ‘happening’ campus
- Establish a track record as a creator of new and innovative technologies for industrial and national needs
- Become known globally for transformational technologies that impact lives of people
- Incubate successful start-ups creating innovative products and business models using the knowledge and technologies developed by the Institute
- Provide an invigorating work environment for faculty and staff, where merit and hard work are recognised and rewarded
- Be a model college campus in terms of sustainability, usage of energy and water and recycling of materials
- Be an institute that is sought for international collaborations leading to exchange of students and faculty and for joint degree programmes
• Intensify the involvement of alumni in all aspects of the Institute’s development—interacting with students, mentoring incubatees, contributing resources towards enhancing the facilities and quality of education, collaborating with faculty members in research and development.

2.2 Goals

The broad goals of Strategic Plan: 2015–2021 are aligned with NIE’s commitment to excellence in education and research, and the Plan is consequently focused on these core themes. The Strategic Plan enunciates NIE’s objective of being recognised as a global leader in education and research. There are a number of international rankings of educational institutions. These draw up lists on the basis of different indicators such as research excellence, student preference and academic and employer surveys. NIE seeks to rise in those rankings whose parameters are in alignment with the institution’s objectives. NIE aims to attract the brightest students from diverse backgrounds and offer them an excellent education. The Strategic Plan seeks to leverage the traditional strengths of NIE and to acquire or develop new strengths. In particular, it seeks to nurture large groups of faculty working on transformational technologies that have the potential to address the societal challenges faced in India today with regard to water, energy, housing, education and the like. Industry and government funded research and development is a major component of this effort.

The strategic plan envisions significant development of physical infrastructure to ensure implementation of the anticipated programmes and services. In addition to formal academic programmes, emphasis will also be given for
nurturing entrepreneurship and provide incubation for new start-ups. NIE alumni network will be strengthened and alumni help will be sought for improving academic and several value added activities. We have made good progress till date in collaboration with leading academic institutions in India and abroad, and it will be one of the leading priorities in the years to come.

Figure 1: Framework for NIE-Strategic Plan-2015-2021

Figure 1 above illustrates the broad framework, which has been developed for NIE Strategic Plan: 2015-2021. Intellectual Infrastructure, Courses & Service Offerings and Institution Building will continue to be the main pillars on which NIE will frame
the objectives, targets and action plan. Innovative academic programmes, high quality research, industry collaboration, promotion of entrepreneurship, collaboration with leading academic institutions in India & abroad, engagement of alumni and outreach activities will provide the bricks and mortar for the main pillars. The prime movers for achieving the plan targets are the faculty, staff and students. The NIE Management is committed to significantly strengthen the physical infrastructure, in order to ensure the achievement of the projected growth of the Institution. A host of core activities have been planned at all levels of the Institution, which will provide the impetus for the journey towards excellence.
3. TARGETS

3.1 Introduction

Based on the vision exercise conducted in the year 2003 and subsequent strategic plan articulated for the period 2010-2015 the Strategic Plan: 2015-2021 has been worked out with broad goals and typical focus areas related to intellectual infrastructure, programmes and services offering and institution building. This section elaborates on specific targets vis-à-vis the focus areas.

3.2 Academic Programmes

NIE has been practicing Outcome Based Education (OBE) in letter and spirit. In order to enable students to meet their career objectives, the Strategic Plan aims to introduce flexibility in the curriculum by adopting Choice Based Credit System (CBCS). CBCS aims to redefine the curriculum keeping pace with liberalisation and globalisation in education. CBCS allows students an easy mode of mobility to various educational institutions spread across the world along with facility to transfer of credits earned by students. Choice Based Credit System (CBCS) will be introduced from the academic year 2017-18 to enable students to register CBCS under core/elective/minor/soft skill courses. This will help them to learn these courses at their own pace and appear for examination. Entire assessment is graded based on a credit system.

OBE has been strengthened with the adoption of Bloom’s Taxonomy. The curriculum will be restructured in the light of the above developments and will introduce many electives at the Institute level as well as department level. Undergraduate laboratories have been modernized and expanded in the last few years with an emphasis on hands-on practice. NIE has been introducing several innovative practices in curriculum development and during 2014-15 it has revised its curriculum in tune with OBE vis-a-vis Bloom’s Taxonomy and the same has been introduces during 2015-16. A senior Professor in the
capacity of Dean (Academic Affairs) will oversee academic activities of the Institute assisted by dedicated staff.

Specific targets

- Introduction of Choice Based Credit System (CBCS)
- Introduction of courses in collaboration with industries in UG/PG programmes
- Up gradation of the existing laboratories and establishment of new ones to keep pace with technological advancement
- Introduction of courses offered by overseas universities / institutes
- Introduction of more number of interdisciplinary electives
- Introduction of inter-disciplinary projects

3.3 Research

The overall strategy for strengthening research activities at NIE during 2015–2021 is to vigorously identify research areas of relevance to the industry. In order to achieve goals related to raising the quantum of research output and improving its quality, NIE will adopt a multi-pronged strategy addressing the issues of enhancing the number of research scholars and the faculty strength and of augmenting resources. It is envisaged that each Centre of Excellence will involve five to ten faculty members drawn from multiple disciplines. Industry collaboration will be sought, wherever possible, to ensure that the research output is in tune with industry requirements. A senior Professor in the capacity of Dean (R & D) will oversee research related activities assisted by dedicated staff.
Research and consultancy is viewed as a means of positively impacting faculty development, publications and IP creation. The strategic plan for research and consultancy is designed to drive the future efforts by making faculty aware of shared interests and opportunities, and available support from government, industry, private foundations and individuals. Over the last two years the interest shown by faculty in undertaking funded research projects is highly encouraging.

**Specific targets**

- Improve research and consultancy quantitatively and qualitatively by faculty individually, jointly and collaboratively
- Develop research interest among post-graduate and undergraduate students
- Improve financial support and amenities for research scholars
- Create a better ambience for research by providing greater flexibility to encourage performance of faculty members and scholars while continually improving research infrastructure
- Increase number of publications in top journals/conferences
- Increase intake of research scholar
- Introduce post-doctoral fellowships
- Pursue a policy of active patenting and commercialization
- Facilitate more number of start-ups on the campus

### 3.4 Competency Building

The strategy for competency building is to increase the strength of human resources while giving its focus on improving quality of faculty and staff. This will improve their productivity in terms of performance at the Institute. Faculty and staff will be provided periodic training for updating their knowledge and
This comprises the activities of need-identification, recruitment, training and development, personnel administration and evaluation of performance. The anticipated growth in the number of UG/PG programmes will create the opportunity to recruit young blood and enable the fresh staff members to grow professionally along with the Institute.

**Specific targets**

- Depute faculty members to join M.Tech and Ph.D programmes under the Quality Improvement Programme (QIP)
- Grant of study leave to faculty members who get admission for higher studies in overseas universities
- Depute of faculty members to overseas universities/institutes under the faculty exchange programme
- Provide financial incentives for faculty members to pursue Ph.D/MSc Engg. (by research) other than QIP candidates
- Improve Faculty Appraisal and Development Programme (FADP) policy in reference to Academic Performance Index (API) as articulated by the Government of Karnataka
- Conduct orientation programmes for the newly joined faculty members
- Enable faculty members to attend FDPs, and to present technical papers in national and international events
- Continue to conduct a series of leadership workshops for faculty members
- Provide financial incentives for faculty members who secure funded research projects
- Provide the benefit of vigorous system of training and development programme for Technical staff.
- Provide staff members opportunities to obtain higher educational qualifications to pursue their aspirations.
- Develop a system in which motivated staff members are recognised
- Monitor and manage outsourced services effectively.
3.5 Pedagogy

Refinement in pedagogy will be one of the focus areas of Strategic Plan 2015-2021. More importance will be given to promote the usage of Information Communication Technology (ICT) based teaching. Self-learning and learning in groups will be encouraged. Classroom teaching will be supplemented by online teaching. On-line learning resources will be extended to students through National Programme on Technology Enhanced Learning (NPTEL) courses and Massive Open Online Courses (MOOCs) through SWAYAM portal. The Institute also plans to introduce interactive online evening courses for professionals in industry, with certification. Opportunities will be given to M.Tech and Ph.D students to engage classes, especially laboratory classes, for undergraduate students. The Institute will further strengthen e-Learning initiatives during the plan period 2015-2021.

Specific targets

- Upgrade Digital library server
- Encourage faculty and students to register for online certificate courses
- Improve Wi-Fi infrastructure
- Strengthen the existing internet browsing facility
- Establish ICT enabled classrooms
- Mentor new faculty members on pedagogical requirements
- Depute senior faculty members periodically for refresher courses on pedagogy
3.6 Collaboration

In the last one decade, NIE has made significant progress in forging links with the industry and leading technological institutions in India and abroad. MoUs have been signed with leading companies as well as Institutions abroad. These MoUs have resulted in tangible benefits to the student community and faculty. NIE will build collaboration with more industries to create more centres of excellence on the campus.

The Institute already has a growing exchange programme with reputed overseas universities/institutes. NIE seeks to increase the quantum of exchange of undergraduate students, post-graduate students and research scholars. The emphasis will be on joint innovative student projects and collaborative research. NIE also has the goal of increasing the level of faculty exchange.

Over the past five decades, NIE has been providing technical expertise to both local and State Government agencies. These outreach activities have taken the form of certification of vital infrastructure, environmental assessment, treatment of water and soil contamination, providing expertise in new renewable energy technologies, recommending measures to ensure the safety of heritage structures, and road and transportation engineering etc. Strategic Plan: 2015–2021 identifies proactive outreach as an important aspect of achieving the Institute’s goals of excellence in teaching and research. One important objective of our outreach effort is to diversify the student population and promote aspirations to study at NIE.
Specific targets

- Establish an exclusive centre for collaborative activities
- Promote faculty and student exchange programmes/sabbatical with leading institutions in India and abroad
- Establish more number of Centres of Excellence (CoE) in collaboration with industry
- Encourage faculty members and technical staff to undergo Industrial training
- Design skill based courses in collaboration with industry
- Facilitate industry professionals to acquire higher qualification
- Provide technical expertise and solutions to pressing issues of public importance

3.7 Governance and Reforms

NIE has developed a good governance system, which has an independent and fully empowered governing system with representation from key constituents such as independent members representing industry, community and faculty, whose sole purpose is to support the mission and objectives of the institution. The academic bodies comprising the academic council at institution level, board of studies and advisory boards at the department level ensure smooth and effective governance of academic activities. Each board will have experts drawn from industry, research organisations and leading academic institutions. These academic bodies ensure that the engineering curriculum is fine tuned to meet industry expectations.

In order to ensure smooth and effective functioning, as part of delegation of administrative/ academic functions, the positions of Dean (Academic Affairs),
Deputy Dean (Academic Affairs), Controller of Examinations (CoE) Deputy Controller of Examinations, Dean (R & D) and Head-IQAC have been created. Divisional Chairmen have been appointed to facilitate seamless integration of activities of similar departments. In order to strengthen governance at department level, a Department Council (DC) is constituted for a period of three years. The DC will have faculty members drawn from different levels of faculty. The DC provides academic and administrative support to the Head of the Department to efficiently manage the department.

The Institute has realised the importance academic reforms to continuously monitor and reform academic activities, so that they meet the expectations of stakeholders. NIE established the Internal Quality Assurance Cell (IQAC) in the year 2010. IQAC has been given the mandate to ensure that quality of teaching and evaluation process is being practiced in the Institute. It has set up two important committees, namely, the Academic Reforms Committee (ARC) and Examination Reforms Committee (ERC). These committees have been functioning since the year 2010. These committees take stock of the deficiencies in the existing system and suggest required reforms. One of the significant contributions of IQAC is the academic audit conducted in the year 2011.

Another novel method introduced from the academic year 2013-14 onwards is the Class Committee (CC). Each and every class in the departments has a Class Committee comprising 8-10 students. The Class Committee is constituted to have representation for top performers, average performers as well as poor performers (decided based on CGPA). It will also consist of
students belonging to all categories as well as girl students. The aim is to ensure that grievances of all sections of students are addressed in a systematic manner. The Head of the department will take suitable action to address the grievances of the students.

With the implementation of autonomous scheme, NIE has set up the office of the Controller of Examination (CoE). In addition to ensuring smooth conduct of examination, the office of CoE has introduced a unique feature called *paper seeing* after the completion of Semester End Examination (SEE) valuation. The students are offered an opportunity to see their SEE answer scripts and discuss the discrepancies, if any, with the course instructor. Many more examination reforms have been planned for the period 2015-2021.

**Specific targets**

- Continue good governance practices
- Fine tune the design of courses and course outcomes as per Blooms Taxonomy to ensure high academic standards
- Continue the practice of academic audit once in five years
- Continue the practice of Class Committees
- Introduce on-line examination for CIE
- Design CIE and SEE question papers as per Bloom’s Taxonomy
- Continue the practice of Paper Seeing
- Involve student representatives in committees such as IQAC, ARC, ERC, etc.
- Digitise answer scripts
3.8 Innovation and Incubation

NIE will set up a powerful innovation and incubation ecosystem jointly with industry as a trend-setter. The idea is to work with industry to support the development of new products and their commercialization. Towards this end, the NIE will establish Research Park (NIERP). It will be promoted by NIE and its alumni. The Research Park will emerge as a game changer. It is expected to provide high-quality incubatees from amongst the Institute’s faculty and students, as well as external incubatees with potential for collaboration with NIE faculty members. This collaboration will be in the form of research projects, consultancy, guest teaching, co-supervision of research scholars and student projects, internships and sponsorship of employees for postgraduate studies by the companies.

Specific targets

- Strengthen the existing innovation and entrepreneurship cell
- Provide training in entrepreneurship
- Establish Research Park (NIERP)
- Develop mechanisms to convert research outcomes into marketable products
- Facilitate UG/PG students to take up innovative projects leading to start-ups
- Enable students to prepare project proposals for starting new enterprises

3.9 Students’ Development

The rigor of academic life will be supplemented by other student-centric activities like conferences, technical competitions and seminars to broaden
the learning experience. The students are also sensitized to societal and environmental issues, so that they experience such endeavours as rewarding as classroom experience.

The other most important component is training and placement for students. NIE has fully functional ISO 9001:2008 certified Training and Placement (TAP) Division. The TAP Division has adequate infrastructure, including computers with Internet facility and interview/discussion rooms.

As part of the training activity the TAP division conducts training programmes for pre-final year students on aptitude, verbal, psychometric and technical tests, group discussions, mock interviews. In addition, German language course is being provided. It is hoped to increase the number of companies visiting NIE from the present 60 odd to 90 to 100 companies by 2021.

Though NIE is very proud of providing sports facilities, yet some more facilities need to be created to support sports like baseball and archery.

**Specific targets**

- Implement personality development and communication skills initiatives on priority basis for all students from undergraduates to Ph.D. scholars
- Provide counselling services to students on a regular basis.
- Augment co-curricular and extra-curricular activities, including sports, for all-round development considering the diversity of student population.
- Fine tune placement of undergraduate students, which has traditionally been good to meet the aspirations of the students and expectations of employers.
• Aim to achieve placement target of 90% across all disciplines by the year 2021.
• Reach out to more number of companies/industries and academia for good placement and internship/research respectively.
• Institute, Teaching Assistantship (TA) to Master’s students and scholarship to Ph.D. scholars other than the existing scholarships and endowment prizes
• Provide financial incentive to students who participate in technical quiz, workshop, paper presentation and design/technical competitions
• Set up corpus fund to award gold medals to rank holders

3.10 Alumni Engagement

NIE will continue to build relations with its thousands of alumni spread all over the world. One of the priority focus areas is to create more opportunities for alumni to spend time on campus and engage with students and faculty. Besides NIE Alumni Association, every member of the Management and faculty is showing keen interest in NIE alumni connect.

Specific targets

• Consolidate a single database of alumni compiled by engaging professional software. The target is to gather and compile 3000 alumni names by end of 2016
• Involve more number of alumni in the Board of Management, Governing Council and other academic bodies of NIE
• Cultivate through alumni, industry linkages that help in special lectures, internship, placement and setting up of labs
• Contact alumni for fund raising by providing to them clear objective of requirement and utilisation of funds
• Organize more number of alumni meets in India and abroad, in order to sensitize the alumni about the development plans of NIE and seek their active support

3.11 Infrastructure

The intake of students, both at undergraduate and post-graduate levels, has drastically increased over a period of time. The intake that was 681 in the year 2010 has increased to about 1104 in the year 2014. Further, starting of new M.Tech programmes and new Centres of Excellence and modernization of existing laboratories have made us build additional infrastructure. Also, NIE being started almost about 70 years ago has some old buildings and hence require either renovation or demolition. The number of faculty members is also increasing steadily.

Realizing the need for additional building space, the Management has taken a conscious decision to build state-of-the-art buildings to accommodate classrooms, faculty rooms and laboratories and Centres of Excellence. A master plan for construction of buildings, including girls’ hostel, has been worked out. The present Master Plan attempts to retain the unique character of the campus with multi-storied buildings.

Consequent to the increase in student strength, the requirement of the staff has also gone up. Despite recruitment restriction from Government of Karnataka (NIE being a grant-in-aided institution), NIE has recruited adequate number of staff over the years. However, the proactive Management has decided to recruit young, efficient, committed and qualified staff members wherever required.
Specific targets

- Create a satellite campus (considering Admin Block and Golden Jubilee Campus) that has space for inter-disciplinary centres with architecturally distinct units, supported by green concepts
- Optimise use of campus space and resources while developing suitable locations for expansion and constructions
- Create additional accommodation for scholars, faculty and staff members
- Improve the systems of waste disposal and handling processes and to ensure recycling of water by the end of year 2019
- Bring in professionals to manage hostels and outsource other services like security, house-keeping, etc.
- Hire professional Project Management agencies/consultants and architects to build modern infrastructure