

ARMY INSTITUTE OF TECHNOLOGY PERSPECTIVE PLAN : 2011-2020

1. **External Environment.** Currently there are over 3,300 engineering colleges in India with approximately 16 lakh enrolled students, which has more than doubled in the last five years.

(a) **Placement Scenario.** Based on 2011 pass-out data for about 7.5 lakh engineering graduates, overall only 25% of BE students find campus placement. Another 13% join post graduation courses like ME, MBA etc. 40% BE students find placement within one year after passing out based on their individual effort. However, the balance 22% either transfer to other professions and manage subsequent employment, or remain unemployed. Of those 25% who manage campus placement, 75% and above find placement in IT firms. However, good engineering colleges in the first 20 national ranking, achieve almost 75% and above placement in core engineering and consultancy firms. Post recession, the average salary from the five premier IT firms (mass recruiters) like Infosys, TCS, Cognizant, Wipro and Tech Mahindra is stagnating between Rs 3.0 and Rs 3.5 lakh since 2008 due to a glut of technical graduates in the market. IT industry is working on an employee ratio of 60:40 of Freshers : Laterals, and have decided that post recession the affordable cost of campus recruits has to be below Rs 3.5 lakh for some more time till the market stabilizes. Companies like Google, Yahoo and Microsoft pay in the range of Rs 6 lakh to Rs 10 lakh, but their numbers are very few. Core companies of Mechanical and Electronics and Telecommunication industry pick up fewer individuals and their salary structure varies from Rs 2.5 lakh for Kirloskar Cummins to Rs 6 lakh by Tata Motors to Rs. 20 lakh by some elite companies. Consultancy firms pay in the range of Rs 5 lakh (Deloitte) to Rs 30 lakh (some foreign firms) and above.

COLLEGE GROWTH PLAN AY 2011-20

2. **UG Education.**

(a) **Goal:** Create a collegiate experience that encourages intellectual rigour and productive teamwork, and results in the graduation of total quality engineers who are well prepared to succeed in the global workspace.

(b) **Strategies and Tasks :**

- **Strategy 1:** Attract high AIT merit students and provide a campus environment for producing highly motivated and successful engineers:
 - Interactive classes and TDs
 - Well equipped labs: supervised projects from SE onwards
 - Technical seminars and workshops
 - Participation in national competitions and conferences
 - Credit based system of continuous performance evaluation
 - Meaningful industry interaction and internships

- Soft skills development through peer pressure
- Motivational talks by eminent personalities
- Stimulating hostel environment – flank in-charges , student mentors; Responsive administration
- Feedback mechanism for better governance.
- **Strategy 2:** : Maintain excellent teaching, learning environment to achieve Zero failures, 60% and 80 % First class in 3rd and 4th years respectively and one University rank holder in each Dept:
 - 100% Faculty should be with PG degree by 2014.
 - 30% Faculty should be PhD holders by 2020.
 - 30% scholarships for high merit holders by 2020.
 - Reward and Recognition Awards for excellence in teaching.
 - Continuous evaluation of the effectiveness of Faculty and each course content.
 - Integration of written and oral communication skills throughout curricula.
- **Strategy 3:** Ensure that all AIT students graduate with strong core engineering knowledge enriched by a broad education to ensure that 20% students obtain post graduation, 100% registered students get placement, and 50% placements are in core engineering and consultancy firms with salary package of Rs 5 lakh and above.
 - Prepare students with the ability to use the techniques, skills, and modern engineering tools necessary for modern engineering practice – Value Addition Courses as evening classes.
 - Prepare students for ethical and professional leadership.
 - Prepare students to communicate effectively among diverse audiences.
 - Prepare students for lifelong learning and professional improvement.
- **Strategy 4:** Introduce core engineering domain of Civil Engineering by 2013:
 - Exploit the infrastructure boom
 - Offer UES candidates for recruitment to Corps of Engineers.
- **Strategy 5.** Achieve good branding for AIT:
 - NBA accreditation for all Depts in ‘A’ grade by 2015.

- Ranking by recognised rating agencies within first 10 private engineering colleges by 2020.
- Implement exchange programs with Foreign Universities by 2016.

3. **PG Education and Research.**

(a) **Goal:** Build and sustain nationally recognised engineering research and PG programs of relevance to industry.

(b) **Strategies and Tasks :**

- **Strategy 1.** Advance research and scholarly enterprise:
 - Recruit and retain Faculty with good research and scholarship potential.
 - Introduce PG courses in a phased manner for 4 Departments by 2020.
 - Identify and support programs and areas of emerging distinction (2020 target: 1 of 4 PG programs ranked in top 10 of private research colleges).
 - Support mid-career Faculty in pursuing new research programs.
- **Strategy 2:** Initiate research culture in AIT UG students:
 - Introduce 5 years Integrated ME Course in one Dept by 2017 and integrated PhD course in 1 Dept by 2020.
 - Provide opportunities for UG research experience.
- **Strategy 3.** Improve research synergies with Industry:
 - Stimulate long-term, mutually beneficial industrial collaborations (2020 target : 50% Faculty with at least one industry research / consulting contact per year).
 - Increase appreciation of entrepreneurship among students and Faculty (Establish Entrepreneurship Cell).
 - Encourage registration of patents (2020 target: two patents per Dept).
- **Strategy 4:** Advance the reputation of research and PG programs in Defence industry and outside:
 - Accept Army Technology Board (ATB) projects.
 - Accept MOUs with DRDO establishments of Pune.
 - Aggressively market, at the state and national levels, the college's research enterprise and PG programs.

- Stimulate public involvement in conferences, lectures and seminars.
- Utilise emerging technologies and activities, such as electronic mail and electronic distance learning.
- **Strategy 5.** Obtain AICTE/DST/TEQIP grants from Government sources.
 - Modernise and remove obsolescence in lab equipment – Rs 15 lakh under MODROBS scheme of AICTE
 - Apply for MODROBS grants for promoting Continuing Education Programmes for own students and for establishing Learning Resource Centres (LRC) for local industry and consultancies.
 - Research Promotion Scheme (RPS) for innovation in established and newer technologies :-
 - Rs 5 to 10 lakh for one or more Faculty members for development of end products which encourage further research activity.
 - Rs 10 -12 lakh for young Faculty under 30 yrs doing PhD.
 - Rs 20 lakh to one or more Faculty members who aim to develop new research facilities at the parent institute.
 - Entrepreneurship Development Cell (EDC)
 - TAPTEC projects – Rs 20 lakh for research in Thrust Areas for national development
 - Seminar Grants (SG), Staff Development Programme (SDP), Visiting Professorship (VP) etc.

4. **Internal Revenue Generation (IRG) Scheme.**

(a) **Goal:** Generate income for sustaining AIT's growth plan on a No-Profit basis to the tune of Rs 3 crores by 2020.

(b) **Strategies and Tasks :**

- **Strategy 1.** Introduce 20 hour/month value addition technical courses (CEPs) using AITs infrastructure in evening sessions after regular college hours:
 - IT Courses on C, C++, Data structures, Open Source C Programming, JAVA and .Net using current lab set-up and industry experts initially and own trained Faculty thereafter – Revenue generation @ Rs 2000/month/student.
 - Electronics & Telecommunication Engineering Courses on VLSI embedded systems techniques, Visual instrumentation using Lab-view software – Revenue generation Rs 2,000/month/student.

- Mechanical Engineering Courses on Auto-CAD, CAM, CAE, 6 SIGMA, CNC training, CATIA – Revenue generation Rs 2,000 to Rs 4,000 / month/student.
- Android technology course with some additional set-up cost of Rs 1 lakh – Revenue generation @ Rs 2000/month/ student.
- Other customised modular courses after additional set-up cost of Rs 2 lakh – Revenue generation @ Rs 2000 /student/month and saleable project @ Rs 0.2 to 0.5 lakh / project.
- **Strategy 2.** Introduce SSB Coaching with ex-SSB Faculty by adding a mini-obstacle course to achieve 10% placement of AITians in Armed Forces.
 - Revenue generation @ Rs 2000/student.
- **Strategy 3.** Organise CAT and GATE classes by recognised agencies for AIT students and open to all:
 - Revenue generation @ Rs 2000/student.
- **Strategy 4.** Introduce Finishing School in conjunction with CII / MCCIA:
 - 20 hour per month courses on Soft Skills development for all streams of graduation under TPO for revenue generation @ Rs 2000/student as well as cater for AIT's own student population.
- **Strategy 5.** Offer IT lab facilities, projects and product development for other institutes and industry:
 - Cloud computing online courses and services investing Rs 15 lakh on set-up cost – Revenue generation from all AWES institutes @ Rs 1 lakh per institute and Rs 2000 /student/month.
 - Generate revenue of Rs 1 lakh and above on each product module developed for industry.
- **Strategy 6.** Offer consultancies in Civil, Mechanical and E&TC Engineering to Pune's infrastructure firms, auto industry and other SMEs in PCMC and surrounding areas:
 - For Faculty development and revenue generation for AIT and Faculty.

5. **Strategic Plan Metrics for AY 2011-20 (refer Appendix).** Salient aspects of the metrics are highlighted below:

(a) **Accreditation.**

- **2011-12.** NBA certification – 'IT Dept' for 1st time.
- **2012-13.** Permanent affiliation to Pune University.
- **2017-18.** Obtain Autonomous status under Pune University.

(b) **Horizontal Expansion.**

- **2013-14.** Introduce Civil Engineering branch of 60 strength.

(a) **Vertical Expansion** : Introduce PG branches in a phased manner 2013 onwards.

(b) **Research and Consultancy / MOUs with Industry.**

- **2012-13.** Introduce AICTE / DST / TEQIP research promotion schemes and best practices.
- **2013-14 onwards.** Introduce R&D and MOUs with Industry in a phased manner along with introduction of PG courses.

(c) **Exchange Programs with Foreign Universities.**

- **2013-14.** Explore possibilities of exchange programs in Mechanical and E&TC Branches.
- **2014 -15.** Implement pilot projects.
- **2015 -16.** Implement exchange programs.

(d) **IRG Schemes (with effect from 2012 onwards).**

- **IT Courses.** C,C++,Data Structures, Open Source C Programming, JAVA, .NET, Android technology, Software testing, Cloud Computing Courses and Services, Modular Courses, Saleable projects, Product Development
- **E&TC Engg Courses.** VLSI Embedded Systems Techniques, Visual instrumentation using Lab-View S/W
- **Mech Engg Courses.** 6 SIGMA, CAD, Cam, CAE, CNC Trg.
- **Soft Skills Course.** By Professional coaching agencies in GD, PI, English and Foreign languages, Logical reasoning, Personality Development etc.
- **CAT/GATE/GRE/SSB Preparation Courses.** In conjunction with training orgs like IMS, Career Launcher, TIME, private SSB coaches etc.
- **Project Mgmt Courses.** For working professionals.

(e) **Alumni Contribution.**

- **2011-12.** AIT Alumni Coordination Cell of 40 student members formed to coordinate with Alumni Association.
- **2012-13 onwards.** Organise class-wise events.
- **2012-13 onwards.** Develop alumni special interest and “friends” groups for appropriate Depts.

CONCLUSION

6. AIT's current student strength is 1080 and is scheduled to grow to 1200 by 2013-14 after E&TC expansion is completed for all four years. UG student strength will grow to 1440 by 2017-18 due to introduction of Civil engineering branch i.e. a batch strength of 360 in each year. However, AIT hostel will be able to accommodate 1100 students (including the new flank to be constructed in NBH-I in 2012-13). The final year batch of 360 except the top 15 of each Dept would have to stay under own arrangements. This will act as an incentive for students to perform well in academics.

7. In the next 5 years a number of Post Graduate (PG) courses and a Research Centre should be introduced to inculcate a research & consultancy culture in AIT. Initially these courses would have to depend on wards of Army personnel passed out from other technical institutions and possibly Army officers on study leave to fill up the PG vacancy of 18 in each Dept. But after the initial years students passing out of AIT would definitely fill bulk of the vacancies as future trend suggests that industry would be recruiting greater number of post graduates in attractive jobs. Around 2017, one of the best performing PG courses should be converted to 5 year integrated ME cum PhD course. Students undergoing Post-graduation would also be available for taking lectures for UG classes.

8. Introduction of a number of certification courses and market friendly soft skills and SSB / CAT courses and AICTE schemes, ATB and DRDO projects would definitely improve the employability of AIT graduates besides generating revenue for sustaining AIT's infrastructural growth and maintenance plans. Simultaneously, implementation of MOUs with foreign universities would be necessary to improve AIT's branding at the national level.

9. Technical higher education system in India is likely to undergo rapid transformation in the coming decade to keep pace with the imperatives of a booming national economy which necessarily has to ride on a sound technological foundation. There is likely to be much greater competition amongst the premier educational institutions to be counted amongst the first twenty. Corporate and foreign universities are likely to enter this field introducing their corporate governance norms and practices with fast decision-making systems. Existing University and labour tribunal service rules which are applicable to AIT also, are excessively sympathetic towards employee grievances. Adoption of corporate norms and practices are likely to enable a more incentive oriented governance system which would allow incentives to the performers and harsher deterrents for non-performers.

10. AIT would have to adapt to these systems and practices to implement all the recommended measures in a highly competitive environment. It would necessitate granting greater functional autonomy to the local college management and especially the college Director in terms of faster decision-making as done in other professional educational institutions.

Appendix (refer Para 5 of AIT PP Plan 2011-20)

Strategic Plan Metrics for Academic Years 2011 – 2020 (in percentage progress)

Ser No	Goal , Strategy	Metric	Baseline 2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1	UG Edu Strategy 1	Attract high AIT merit students and provide a campus environment for producing highly motivated and successful engineers.	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
2	UG Edu Strategy 2	Maintain excellent teaching, learning environment to achieve Zero failures, 60% and 80% First class in 3 rd and 4 th years respectively and one rank holder in each Dept.	30%	40%	50%	60%	70%	80%	85%	90%	95%	100%
3	UG Edu Strategy 3	Ensure that all AIT students graduate with strong core engineering knowledge enriched by a broad education to ensure that 20% students obtain post-graduation, 100% registered students get placement and 50% placements are in core engineering and consultancy firms with salary package of Rs 5 lakh and above.	50%	56%	62%	68%	74%	80%	86%	92%	98%	100%
4	UG Edu Strategy 4	Introduce core engineering domain of Civil Engineering.	0%	0%	0%	25%	50%	75%	100%	100%	100%	100%
5	UG Edu Strategy 5	Achieve good branding for AIT : 'A' grade by NBA, 10 th national ranking amongst all private engineering colleges, and foreign university exchange programs.	40%	50%	60%	70%	80%	90%	100%	100%	100%	100%
6	PG Edu & Research Strategy 1	Advance research and scholarly enterprise.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
7	PG Edu & Research Strategy 2	Initiate research culture in AIT UG students.	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%
8	PG Edu & Research Strategy 3	Improve research synergies with Industry.	0%	10%	20%	30%	45%	60%	75%	90%	100%	100%
9	PG Edu & Research Strategy 4	Advance the reputation of research and PG programs in Defence industry and outside.	0%	10%	20%	30%	45%	60%	75%	90%	100%	100%

10	PG Edu & Research Strategy 5	Obtain AICTE/DST/TEQIP grants from govt sources	0%	0%	20%	30%	50%	70%	90%	100%	100%	100%
11	IRG Scheme Strategy 1	Introduce 20 hr / month value addition technical courses (CEPs) using AITs infrastructure in evening sessions after regular college hours.	0%	10%	25%	40%	55%	70%	85%	90%	100%	100%
12	IRG Scheme Strategy 2	Introduce SSB Coaching with ex-SSB Faculty by adding a mini-obstacle course to achieve 10% placement of AITians in Armed Forces.	0%	0%	25%	50%	75%	100%	100%	100%	100%	100%
13	IRG Scheme Strategy 3	Organise CAT & GATE classes by recognized agencies.	0%	0%	25%	50%	75%	100%	100%	100%	100%	100%
14	IRG Scheme Strategy 4	Introduce Finishing School in conjunction with CII / MCCIA.	0%	10%	25%	40%	55%	70%	85%	100%	100%	100%
15	IRG Scheme Strategy 5	Offer IT lab facilities, projects and product development for other institutes and industry.	0%	10%	25%	40%	55%	70%	85%	100%	100%	100%
16	IRG Scheme Strategy 6	Offer consultancies in Civil, Mechanical and E&TC Engineering to Pune's infrastructure firms, auto industry and other SMEs in PCMC and surrounding areas.	0%	0%	10%	20%	40%	60%	80%	100%	100%	100%