DRAFT REPORT
ON
INSTITUTIONAL ACCREDITATION

OF

Army Institute of Technology

Dighi Hills

Pune – 411 015, Maharashtra

Visit dates: 19th – 20th January 2004

National Assessment and Accreditation Council
Bangalore

Army Institute of Technology (AIT)
Dighi Hills, Pune: 411 015

Part I- Introduction

The Army Institute of Technology (AIT), Pune started in 1994 by the efforts of the visionary Late Gen BC Joshi, with the main objective of producing engineering graduates for defense and industry with the help of good infrastructure under a healthy environment, sought accreditation from the National Assessment and Accreditation Council (NAAC) in September 2003. The NAAC in its turn appointed the following visiting committee to assess and accredit the AIT:-

Dr PV Vaidyanathan, Former Vice Chancellor,
     Annamalai University, Tamilnadu - Chairman
Dr Subrata Mandal, Principal,
     Panskura Banamali College, Panskura, W.B. - Member
Dr Shakuntala Katre, Professor and Chairperson, Department of
     Zoology and Dean of Science, Bangalore University
     Bangalore, Karnataka - Member Coordinator

The peer team visited the college between 19 and 20 Jan 2004 and observed the following:

The college affiliated to Pune University, runs Bachelors Degree courses with an intake of 60 students each in Mechanical Engineering, Electronics and Telecommunication engineering, Computer engineering and Information Technology, exclusively catering to the needs of children of Army personnel through the special permission granted by the Supreme Court of India to that effect. All the four engineering courses started by the college are recognized by AICTE. Between 1994 and 2002 admissions were based on an entrance test conducted by AIT but from 2003 it is based on the All India Engineering Entrance Examination (AIEEE).

While the current strength of students on roll is 852, the total number of faculty is 50 which, includes 3 adhoc faculties and 2 Army officers and non-teaching staff is 102. The staff : student ratio works out to 1:17 (50:852). Faculty is encouraged to pursue post graduate studies while research activity is yet to pick up.

The college is located in a 30 acres campus with sufficient building area. Facilities exist for co-curricular and extra curricular activities. Being an army school, stress is laid on discipline and training in sports and yoga. 92% of students are residing in hostels. Annually the college provides student scholarships to the tune of Rs. 3,60,000/- to students.

Part – II Criterion-wise analysis:

Criterion I: Curricular aspects:

AIT exclusively caters to the needs of the children of Army personnel. At present, the institution offers four Bachelor Degree level Technical course options in the subjects – Mechanical Engineering, Electronics and Telecommunication Engineering, Computer Engineering and Information Technology under the semester scheme. All the courses are run on self financing scheme. Except for the Pune University eligibility under ATKT, the students do not have the provision for any other time frame or horizontal mobility options. In the final year of the Degree course, the students have the choice of electives and non-core subject options as per the University norms. All the courses are career-oriented.

There are three basic science departments (Physics, Chemistry and Mathematics) in addition to the four engineering departments. The Army Welfare Education Society (AWES) provides the major funding for the institute under the aegis of this society. Ten other institutions of higher education and several schools are also being managed by the same society.

AIT has adopted a well-defined Tenet for its wards – **"I shall be truthful, honest, forthright and trustworthy under all circumstances. I shall always uphold the honour, dignity and values of my parents, teachers, Institution and my country", and towards achieving this, the institution has set up the following goals and objectives:**

- **"Strive for excellence in providing the right environment for development of physical, intellectual, emotional and spiritual quotients with a view to produce total quality engineers preparing them to face challenges of modern information society"**

The above goals and objectives of the institution are periodically reviewed and communicated systematically to all its constituencies and to a

great extent, there is an effort by the institution to expose its students to extra-curricular, co-curricular activities, intra and inter-collegiate programmes in value-added courses and activities, to realize their progress on the lines of the mission of the institution.

As the institution has the mandate to follow the University syllabus, at present, it does not have a mechanism for obtaining feedback on the teaching programmes from academic peers and employers. It also does not have the freedom to either start a new programme without proper authorization from the appropriate academic bodies or redesign the syllabus. In its past experience, it has taken the institution about two years to start a new programme in the institution.

At present, the institution has informal industry-institution interactions through industry-sponsored final year BE students' projects, faculty quality improvement programmes, lectures by industry experts, and sometimes by other eminent personalities. There is also an informal mutual exchange of faculty ambassadors to Telco (Pune). Industry feedback views about AITians are presented in a booklet called "Reflections". There are MoUs with industries and institutions such as TATA Honeywell, C-DAC, IBM, Bosch Rexroth.

Innovations such as modular curricula and/or interdisciplinary or multidisciplinary approaches are not possible to achieve as the institution works under the affiliation of the Pune University. However, some of the faculty members take an active part in serving on the Boards of studies during the revision of the University syllabi.

Criterion II: Teaching-learning and Evaluation:

AIT has a transparent admission process. Since inception admission to the institution is through a national-level entrance examination and only merit and ranking at this examination is considered for admission. From 2003-2004 AIT has started giving admissions based on the merit in the All India Engineering Entrance examinations conducted by the CBSE and/or 10+2 or PUC.

At present, there is no provision for assessing the students' knowledge and skills immediately after admission and the institution follows progressive assessment method and term-work assessment based on Viva

also. The college offers enrichment courses by way of value addition through the courses such as C and C++ programming, CAD-CAM, CAE which are periodically arranged to enhance the student employment potential. Special language courses (English, French and German) are also arranged for the benefit of the students.

Although there are no formal remedial or bridge courses offered by the institution, teachers are counseling weak students and offering extra coaching periodically. Advanced learners are motivated and encouraged to write technical papers, participate in technical festivals, to do library search etc., Personal recognition by way of congratulatory letters from the Principal and medals to toppers are believed to give the required incentives to achievers. Over the years institution has been facilitating the effective running of its teaching-learning programmes and has been monitoring the student progress quite regularly.

Individual teachers are encouraged to make their own teaching plans and implement them meticulously to cover the curriculum. Pune University syllabus is already unitized and the record of syllabus coverage is checked by the Principal. Audio-visual aides form a part of central library and teachers make use of OHP, projectors for supplementing their usual teaching methods. Educational CD/VCD/Video cassettes are also used to augment the knowledge of the students. 95% of the classes are taught by permanent teachers and through their annual prospectus, the calendar of academic events is made known to the students before the commencement of the academic year.

The overall academic performance of the students is monitored by conducting mid-term tests, progressive assessment and evaluation, project and seminar evaluation and monitoring of the student attendance. There is a formal mechanism of student feedback on teachers' performance which is used for advising the faculty on required corrective measures.

Teachers are recruited after following the stipulated norms of recruitment of the University and AICTE. The peer team noted that the faculty is largely represented by young/middle level faculty, while senior level faculty with doctorate degrees are wanting. Based on need, the institution has the freedom to appoint a few ad hoc teachers. The institution at present does not follow the self-appraisal from teachers for evaluating the performance of the teachers. However, Head of the Department and the Principal periodically assess and evaluate the performance of the teachers.

There is an annual confidential report sought from the teachers which is used if corrective measures are to be adopted, by the Principal. While the teaching faculty is provided with leave opportunity for academic progress, motivation for focused professional/career advancement needs strengthening.

Criterion III: Research, Consultancy and Extension:

There are four Ph.D.s' amongst the teachers. The institution facilitates effective running of the teaching-learning process and monitor student progress effectively. Research projects of students are coordinated by faculty. About 3 to 4% of teachers are engaged in research activities and have also been publishing articles in research journals. However, a general motivation and upliftment in 'research culture' amongst staff would enable institution to reach greater heights in professionalism.

The expertise of the faculty is publicized in the institutional brochure. However, so far, the college has not attempted to offer any consultancy based on the professional strength of its faculty.

There is considerable extension activity in the institution, largely through the NSS programmes. A number of community development programmes have been undertaken by the students which have been recorded in a publication termed as "Glimpses 2002". Outreach programmes are also encouraged through the NSS. At present, the institution does not have any collaboration with NGOs' or GOs' to supplicate its extension activities, although extension activities are largely student centered.

Over the last three years the institution has organized several value–addition courses, conferences and seminars, including some for improving the effective teaching skills amongst teachers. The institution has linkages with CME, R & D establishment, Dighi and IAT, Pashan for project work and teacher participation. There are a few national linkages as also linkages with other institutions run by the same management.

Criterion IV: Infrastructure and Learning resources:

AIT has developed an ambitious Master Plan of the college, which is partially completed. With projected expansion in the future when fully completed, it would provide an excellent infrastructure to the students. Augmentation of infrastructure and other facilities are being maintained to keep pace with the academic growth. College has a maintenance cell consisting of skilled workers. Also, it has a well equipped mechanical

workshop. Maintenance of computers, Cyber café and other related facilities are carried out by the college. Security, catering and conservancy of the premises are allocated to professional agencies which is a right approach.

Reprography facility is made available to the students for twelve hrs a day. Audio-Video cassettes are available for use in the library. College library is interconnected with a few other libraries such as the British Council Library. College has constructed one air conditioned reading room with cubicles. The total number of books in the library is 10,142 with about 4,000 titles. There are 64 magazines/journals. Investment in the library for books and journals upto Jan 2004 is 21 lakhs. Library timing is from 0800 h -2400 h and this is very helpful to students. Establishing a book-bank facility, inflibnet and full automation of the library would be necessary value addition to the college.

289 computers alongwith adequate number of servers are available in the college. These are made available mainly in the departmental laboratories. Some computers are kept apart in the cyber café and other sections of the college, office and library. Computers in cyber café and library are available to staff and students until midnight even though it is not designated as a central computing facility. The new wing of the library has provision to accommodate additional 70 computers. However, an exclusive central computing facility for the general use of staff and students would be a valuable asset to the institution.

More sports facilities may be provided so that AIT can compete beyond the university level. Football play ground requires further improvement. Swimming pool is lacking although it is indicated in the Master Plan. This is a very important acquisition especially for an Institution dedicated for the children of army personnel. In the recent years, students have particularly fared well in squash. Sports facility such as basketball, tennis, squash, football and volley ball courts and separate gymnasium for boys and girls enhances the extra curricular activities of students. Students are provided coaching by national level coaches and sportsmen from neighboring Army establishments. Also, they have access to army sports institute at Pune, which is equipped with state of the art sports infrastructure. AIT however has not appointed a full time physical trainee instructor.

Resources are used to conduct values added courses and coaching for AIT students for future career in the defense forces and other establishments. By providing the space to institutions such as NIIT, the AIT students get discount in their course fees of these institutions. Internet and digital facilities provided to the students would is praiseworthy. Computer-aided learning packages also need to be developed and made available to the students.

Criterion V: Student support and progression:

The student drop out rate is negligible and this is a notable feature. It is heartening that the overall results of the institution including those students falling under ATKT, is significantly higher than the respective university averages. Feedback is sought from students on academic matters. The institution has developed an effective mechanism to use students' feedback for its quality enhancement. The annual institutional prospectus is exhaustive and provides adequate information to those who seek admission. The institute has well run student support services in the form of facilities for STD, 24 hrs banking through ATM, in-house regular medical checkup, and transport facility for emergency medical cases, separate transport for industrial visit and assured power supply through generator backup. The students are also provided with sufficient cafeteria facility and subsidiary army canteen supplies. Also the small shopping complex and laundry facility helps the hostellers.

The scholarship corpus is 4 lakhs per year. Merit scholarships worth about Rs. 3-4 lakhs per year are disbursed annually to the students. Besides these scholarships, gold and silver medals, and books are given to meritorious students.

Placement cell appears to be quite active and student-friendly. Recruitment through placement service is encouraging. The total placement in 2002-2003 is more than 60%. The employers' comments are also very positive to the institution.

An alumni association has been formed in 1999 and its activities are yet to be geared-up and diversified. The alumni student strength is 638. Recently, an alumni chapter for AIT has been established abroad.

Various nature clubs exist in the college. Participation of students at various national-level technological competitions is notable. Format and presentation of student magazine (*Srijna*) is good. In the college, cultural programmes are held regularly. This gives an integrated development to the wards.

Despite the good student support, progression in terms of success in GATE examination is rather poor. No candidate could qualify in GMAT so far. The number of students joining defense forces (Army, Navy and Air force) is relatively constant, placement in army shows a declining trend. Placement in Army also shows a declining trend. Placement in State, Central and PSUS is wanting. Motivation for self employment is also to be promoted. Number of University rank holders in the last two batches of the students has declined. However, in earlier years there used to be rank holders. The institution should explore the possibilities of lending adequate academic support to its students to appear for competitive examinations through add-on courses and other ways.

Criterion VI: Organisation & Management

Governing Council has been constituted as per the directions of AICTE. The college has an efficient external coordinating and monitoring mechanism. Meetings of the Governing Council and Local Management Committee are held periodically. The Local Managing Committee has been constituted as per Pune University rules. An internal committee has been instituted for developing a rule book for AIT. Code of conduct for AIT staff has been prepared. There is an in-built mechanism to check the work efficiency of the non-teaching staff through Annual Confidential Report. Also, a special committee is formed for preparing the annual academic calendar.

Duties of each category of employee have been clearly defined. Professional development programmes for non-teaching staff such as Computer Literacy and Unix Operating System are conducted periodically. AIT follows Government of Maharashtra rules for promotion of teaching and non-teaching posts. College account is audited by internal auditor. College has a sound financial management. All the courses in the college are self financing. Stock registers are maintained in the department.

Involvement of Senior-level Army Officers in the Organisation and Management of AIT has added considerable credibility to the strategic management practices of the college. The well defined administrative

sections managed by trained personnel is noteworthy. Participatory management practices involving the faculty and even student representatives is a good practice.

Criterion VII : Healthy Practices

The peer team observed the following as healthy practices adopted by the Institution:

- Library being kept open for long period every day.
- Existence of digital library.
- Availability of Internet facility
- Internet facility at Ladies hostel.
- Army canteen facility made available to all students and staff.
- Neat upkeep of institution premises.
- Provision of a telephone exchange in the college.

The library is kept open from 8 am to midnight everyday. This helps the students to utilize the library facility effectively. Some CDs supplied by standard companies are made available to students in the existing digital library.

About 21 computers kept in a room (named cyber café) are provided with internet connection and this is utilized by students as internet facility. Since the girl students have restriction in moving out of the hostels beyond certain hours in the night, internet facility exclusively for girls has been provided in the ladies hostel.

Availability of many consumer articles at cheaper rate than that existing in the open market as in an Army canteen, is an important facility extended to all students and employees of AIT. Subsidized transport facility is also available to everybody in AIT. The campus environment is kept neat and clean. The hostel boarders are seen to live in hygienic conditions. The telephone exchange obtained in the college functions all the 24 hours and it is noted as a healthy practice for comfortable living by the hostellers

Part III - Overall analysis

The Peer Tem visited all the Departments, laboratories, library, workshops, games and sports facilities, canteen, gymnasium, administrative office and support facilities such as generator room and water treatment

plant. Also it had discussions with students, faculty, non-teaching staff, alumni and parents to elicit additional information. All relevant documents presented by the college were perused to validate the claims made in the SSR. The team concludes as follows:-

The commendable features of the college are noted to be:-

- The beautiful and neat ambience conducive to the teaching-learning process.
- The admission of enthusiastic and disciplined students through an all India entrance.
- Young and motivated faculty eager to further their knowledge and career advancements.
- Extended library timings and availability of digital library resources.
- Availability of internet facility to all students in the college and the facility extended to the girl students in the girls hostel.
- Sale of consumer articles to all the students and employees at subsidized rates.
- Provision of a day-night telephone exchange in the college.
- Award of a good number of scholarships and prizes to the needy and merited students.
- Subsidized transport facility to the staff and students and staff welfare measures such as loan facility and subsidized residential quarters on campus.

The team however, feels that the college can pay attention to the following aspects, to augment the existing resources and conditions:-

- Library to be modernized with extensive use of computers and addition of some good technical journals for research purposes.
- Appointment of a full fledged librarian to enhance the value of library functioning
- Establishment of an independent computer centre to be used by students and staff alike, during normal and extended hours.
- Appointment of qualified senior faculty and encouraging the existing faculty to pursue research to further their qualifications through suitable support and incentives.

- Presence of a full time physical training instructor will enhance the sports activities.
- Tutorial and remedial courses for slow learners may be planned.

The Peer Team wises the Army Institute of Technology all success in its endeavor to **"March Onward to Glory"**.

Signatures of Peer Team Members:

_____
(Dr PV Vaidyanathan)
Chairman

_____
(Dr S Mandal)
Member

_____
(Dr S Katre)
Member Convener

The contents of the draft report on A/A as above are acceptable to me.

_____
(Dr SR Ghate)

Principal, AIT

Date :20 Jan 2004

Place: Pune

(Seal of AIT)