

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

Subject	TEQIP Mentor's Progress Report
Institution Place	JNTU College of Engineering <b>KAKINADA</b>
Dates of Mentoring	<b>MARCH 10<sup>TH</sup> &amp; 11<sup>TH</sup>, 2006</b>
Mentor	<b>Prof. JSR Subrahmanyam</b>

## 1. GRANT OF AUTONOMIES

	Category	Present state	Remarks/ Suggestions
i	Managerial Autonomy	<b>Exists for iii &amp; iv as per February 2006 Guidelines of NPIU. Others partial.</b>	<b>Increased autonomy in respect of managerial &amp; administrative matters is desirable. (Refer Para 1 of Appx.1)</b>
ii	Administrative Autonomy		
iii	Academic Autonomy		
iv	Financial Autonomy		

## 2. ACTION BASED ON AUDITOR'S REPORT

### 1. PROJECT IMPLEMENTATION

	Aspect		Observations/ Suggestions
1.1	i	Current Status of Understanding the concept and design of the project among the stakeholders	Inadequate. Comprehensive planning for project implementation is needed forthwith. <b>(Refer Para 4 of Appx.1)</b>
	ii	State of Preparedness to move rapidly with overall project implementation	Change of mindset in terms of assigning due priority and adequate time for successful project implementation necessary. <b>(Refer Para 2, 3, 5 of Appx.1)</b>
	iii	Improved Curricula, syllabi and teaching - learning process.	The participating members of the board of studies from the college need to do better homework and ascertain themselves to improve curricula and syllabi. Teaching learning process shall improve significantly with improvement of 1.1.V below. <b>(Refer Paras 6-9 of Appx.1)</b>
	iv	Refurbishment of academic buildings	Needs regular maintenance, particularly for the main building that was ignored for long. <b>(Refer Para 10 of Appx.1)</b>

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

	v	Strengthening and modernization of academic facilities	Library needs automation immediately. Good planning from Civil, EEE and Mech. Departments. The ECE Dept. needs to strengthen the design automation facilities. Planning from CSE and is very poor and the present state of equipment provisioning under TEQIP can not effectively support establishment of academic excellence. The respective faculty need to interact closely with their counter parts from other TEQIP participating institutions and retain the services of the export consultant if deemed necessary. <b>(Refer Paras 12-14 of Appx.1)</b>
	vi	Improvement in overall faculty competence and activities	Very good from Civil Engg. & Mech., Depts.;satisfactory in respect of EEE & ECE Depts. Still, considerable scope for improvement exists. Lot of effort required from CSE dept. as the general level of competence appears to be very low as per TEQIP requirements. <b>(Refer Paras 15-20 of Appx.1)</b>
	vii	Operation of formal networking	Inadequate. Detailed planning required in association with lead institution and same to be pursued vigorously for implementation. The excellent support and expertise from the lead institutions should be utilized. <b>(Refer Para 21 of Appx.1)</b>
	viii	Services to community and the unorganized sector	No proper conceptualization. Enormous scope exists for organizing this activity from all Depts. and detailed planning required. Same to be pursued vigorously for implementation. <b>(Refer Para 22 of Appx.1)</b>
	ix	Implementation of Tribal Development Plan	Satisfactory, though no comprehensive plan is made as yet.
1.2		Action taken by the Mentor to create awareness	Appraised only few BOG members that are existing staff , all heads and faculty. The Chairperson of BOG and industry participants are not available.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

1.3	Action Plan for the next six months on Services to Community and Economy, Networking and Tribal Development Plans	Not provided. Advised to carryout detailed planning forthwith.
1.4	Whether action plan attached?	Not made available by the institute.
1.5	Action Plan based Guidance	General guidance provided in the absence of specific action plan from the institute. Advised collaborative effort with National Productivity Council - Hyderabad and National Informatic Center Hyderabad in respect of Services to Community as a very large data bank in this context is available with NIC and the same is a thrust area of activity for NPC in the immediate future.
1.6	Observed Bottlenecks	Mindset, prioritization, inadequate commitment, poor support from top management.
Suggestions made / Assistance sought from		NPIU

## 2. Implementation of Reforms

	Aspect	Observations/ Suggestions
2.1	Current Status of each Reform in the Institution	Not very encouraging
	i Creation of Institutional ambience conducive to achievement of of high Institutional standards	Just adequate. <b>(Refer Para 23 of Appx.1)</b>
	ii Introduction of flexibility in programme offerings	Very little and ineffective
	iii Usage of continuous assessment for evaluation of students' academic performance	Adequate
	iv Appraisal of teachers' performance by students	Not very effective
	v Establishment of four funds and their sizes	Fund reallocation from main pool of reserve need to be carried out based on the Feb 2006 guidelines of NPIU.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

	vi	Institution of improved service package for faculty	Required for areas of leading edge technologies such as CSE and ECE. To facilitate the same positions of emeritus professor chairs and expert consultants designations may be established if parity amongst staff of same designation is deemed mandatory. <b>(Refer Para 24 of Appx.1)</b>
	vii	Offer of incentives for faculty	Disincentive for hard-working faculty by thrusting more work and not planning properly to improve quality of non-performing faculty.
	viii	Mechanism for self-correction	Presently none. Self evaluation of the overall institutions performance and self assessment of personally close and highly interactive small groups of faculty shall be helpful in establishment of a well suited self correction mechanism specific for the institution after at least a few iterations. Model of OUCE's recent self assessment may be taken as a reference to start with. <b>(Refer Para 25 of Appx.1)</b>
2.2	Action taken to guide institution/BoG in implementing the reform.		Appraised only few BOG members that are existing staff , all heads and faculty. The Chairperson of BOG and industry participants are not available.
2.3	Information to the NPIU re. action required to be taken at the state level.		The case for according complete autonomy should be insisted upon.
2.4	Hurdles and bottlenecks and suggestions for removing the hurdles.		Described as above
2.5	Time to Time progress in putting the reform in place		To be reviewed during next visit of the Mentor.
<b>3. Improvement in Administrative and Managerial Practices</b>			
	Aspect		Observations/ Suggestions
3.1	Current Status		Overall status no change
	i	Modernization and decentralization of administration and financial management	Adequate as per Feb 2006 guidelines of NPIU.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

	ii	Increased responsiveness to students academic and non-academic requirements	Limited. (Refer Paras 26-29 of Appx.1)
	iii	Increase responsiveness to faculty requirements	Limited. (Refer Paras 30-31 of Appx.1)
	iv	Increased utilization of institutional resources	Considerable scope for improvement.. (Refer Para 32 of Appx.1)
	v	Maintenance of academic and non-academic infrastructure and facilities	Inadequate. Mostly limited to breakdown maintenance. (Refer Paras 33-34 of Appx.1)
3.2	Requirement of the Institution.		Fully networked office automation of all aspects of institution is still pending.
3.3	What guidance has been provided?		The concerned college authorities for advice to visit JNTU, Kukatpally to see a working model of a fully operational office automation facility with complete functionality. The same may be developed in house with the support of CSE Dept. and students, instead of getting the same from a third party
3.4	What action has been planned?		No detailed planning is made and documented formally by the institution. The same needs to be carried out immediately and implemented forthwith.
<b>4. PROGRESS IN IMPLEMENTATION OF OTHER COMPONENTS COVERED UNDER INSTITUTIONAL DEVELOPMENT</b>			
<b>OBTAINING NBA ACCREDITATION</b>			
4.1	i	The current status of accreditation	Pending renewals for some UG programmes. PG programmes need to be accredited
	ii	Improved Relevance of curricula and syllabi	Lot of scope for improvement. The participating members of the board of studies need to do better homework and ascertain themselves to improve curricula and syllabi.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

	iii	Use of Modern teaching / learning aids and methods	Minimal. Every classroom may be provided with LCD projector, Wireless PC connectivity and high speed Internet access.
	iv	Provision of opportunities for students to improve their learning	Refer to para 35 and Annexure1 of Appendix.1
	v	Interaction with Industry	Very poor. Extensive publicity and establishment of non-formal networking on a person to person stroke institute to industry needs to be rigorously pursued. <b>(Refer Paras 36-40 of Appx.1)</b>
	vi	Placement through Campus Interviews	Inadequate. Same as 4.1.v above. <b>(Refer Paras 41-42 of Appx.1)</b>
	vii	Training and services offered	Inadequate. Already discussed previously under Networking, Services to Community and other related activities and advise accordingly. <b>(Refer Para 43 of Appx.1)</b>
4.2	Guidance provided by mentors		Appraised only few BOG members that are existing staff , all heads and faculty. The Chairperson of BOG and industry participants are not available.Activity specific guidance provided is described above against each activity.
4.3	Bottlenecks / hurdles faced		Mindset, prioritization, inadequate commitment. Better support needed from top management.
4.4	Suggestions / Recommendations		Activity specific advise to the indicated above.

**5. REVISION / RESTRUCTURING / RE- ORIENTATION OF EXISTING PROGRAMMES**

Aspects		Current Status
5.1	restructuring / reorienting / revising programmes	<b>Nothing very effective. Refer Para 35 of Appx.1</b>
	setting up modern laboratories related to the changes in programmes	Inadequate from CSE and EEE.
	training of faculty and staff to meet the new changing needs of the programmes	Even the exposure to the TEQIP funded items is alarmingly low.
5.2	Guidance provided	<b>Refer Para 35 of Appx.1</b>
5.3	Hurdles / bottlenecks	Mindset, prioritization, inadequate commitment. Better support needed from top management.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

5.4	Suggestions / Recommendations	NPIU / SPFU to conduct one day orientation program with support of mentors.	
<b>6. STARTING OF NEW PROGRAMMES</b>			
	Current Status	Nil	
6.1	i	New Programmes	NII
	ii	Setting up Laboratories for new programmes	N/A
	iii	Training up faculty to man the new programmes	N/A
6.2	Guidance provided	Refer Para 35 of Appx.1	
6.3	Bottlenecks / Hurdles	Mindset, prioritization, inadequate commitment	

**GENERAL IMPRESSION, SUGGESTIONS AND RECOMMENDATIONS**

Attached at Appendix. 1 following.

**TEQIP Mentoring – General Observations and Suggestions**  
**By Prof. JSR Subrahmanyam, Mentor, SPFU, AP**

1. Fully effective administrative & financial autonomy is still not available with University colleges and academic autonomy is completely missing with private colleges. These anomalies need to be corrected immediately, without which the success of the program is questionable.
2. Increased involvement of Chairperson and members of BOG is necessary, particularly that of VCs wherever they are the Chairpersons.
3. The initial commitment noticed in terms of project ownership during the first audit by many institutions does not show up in terms of serious action-oriented approach.
4. The institutions are expected to prepare detailed plan for implementation and document the same which is required to be thoroughly scrutinized by Mentors as per the discussions by NPIU. However, practically no document is visible except the CIP. Not even the original detailed proposal prepared for obtaining the initial approval could be presented by the institutions for the first mentoring. Hardly any of the stake-holders seem to be familiar with the same. It is high time that a very comprehensive implementation plan is prepared in respect of each department and each major activity by the institution. Surely, the considerable amount of time available till date is ample to have worked out a detailed plan and the same should be done forthwith.
5. The training imparted by NPIU to the institutions for planning the campus networking does not appear to bear fruits. Almost all the institutions do not seem to have appreciated the importance of proper planning for the establishment of the same and seem to have been relying

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

on the sketchy outline of a proposal of layout given by the prospective vendors. Strangely, the so-called expertise available in-house even by the regular teachers of Computer Networks and Network Security does not appear to have been put to use. A very comprehensive RFP (request for proposal) document should have been prepared in this connection. General aspects of working on this matter are outlined at Annexure -1 to this note for the ready reference of the concerned. Details need to be worked out by the concerned institutions.

6. The so-called amends made recently in syllabus and curricula have not been effective as noticed on sample basis. This is due to repetition of topics and lack of enhancement of the practical / hands-on sessions. Suggest that the members of board of studies do the required amount of homework in terms of looking into the syllabi and curricula information from at least the websites of top of the world engineering institutions and then revise the same for the TEQIP participating institutions.
7. Electives may be offered as per choice of students. Industry experts may be involved for teaching the electives for some important topics during the full semester course. Summer semester may be introduced.
8. Mentor based instruction like the MS-IT program, web-based mentoring etc may be tried.
9. Considerable scope exists for introduction of state of the art topics in terms of electives and more frequent student seminars.
10. Most mechanical labs need substantial refurbishing and obsolescence removal. ECE and CSE labs need better maintenance and temperature control. Else, the life of expensive equipment procured under TEQIP or otherwise gets reduced considerably.
11. Good quality hostels essential for all students and bachelor faculty.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

12. Interlibrary access to the online facilities, computational facilities based on remote log-in, grid computing etc. of reputed overseas universities may be planned.
13. The vast pool of high quality teaching material developed within and outside the state is not being put to use. For instance, the establishment of more of CBT course material by all depts. on lines of a) Networking subject from ECE dept. of the OU College of Engg., b) MSc – IS course material by AP State Council of Higher Education c) content from eLearning initiative by AP State Council of Higher Education / eLearning initiative of CDAC / open courseware of MIT – USA etc. is desirable. The vast repository of similar material already made available from IITs at Kharagpur / Chennai / other institutions should be looked into.
14. Web-enabled teaching – learning environment, project guidance feature, think-tank experts association, fully automated call center functionality etc. may be established.
15. Special attention is needed to improve the quality of ECE and CSE faculty, their industry interaction and their support to students.
16. Compulsory industrial training / association for all faculty periodically (say every three years) for 4 to 6 weeks. Each junior faculty member should have atleast one publication per semester jointly with some industry professional in some conference / journal, preferably of international standing and one per semester for each student member of all PG programs during final year study.
17. In-breeding should be discouraged and the faculty aspiring to acquire PhD qualification should be made to do so from any of the premier academic & research institutes like IITs / IISc from India or other reputed overseas establishments. This needs to be promoted in a big way. There is a need to establish the positions of Emeritus Professors / Chairs, preferably with industry support.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

18. Necessary to have the induction of young talent with PhD at middle level (formerly Asst. Professor, presently Associate Prof. in some institutions) in engineering disciplines. Obviously, the necessary incentives also need to be provided for attracting such talent.
19. Rapport with the think-tank of world-class experts as originally conceptualized and identified by APSCHE during 2003-04 needs to be established that would provide support for industry / research-oriented academic activity on a case to case basis.
20. Participation of faculty of the TEQIP institutions in the National Plan for Technology Enabled Learning (NPTEL) program of Govt. of India including course content development needs to be encouraged.
21. Extensive usage of holidays and vacation should be made for the Operation of formal networking. 2005 Summer should have been utilized for this purpose
22. Under the Services to community and the unorganized labor force, service to the Women community and senior citizens may be planned and emergency services support with GIS may be publicized.
23. It is necessary to establish a fully residential campus for students, faculty and staff as a mandatory requirement for such institutions, on the same lines as IITs. Particularly, the students should be provided with a single-seated accommodation. This will help students to have increased access to faculty and a better ambience for their study outside contact hours.
24. Consolidated remuneration of temporary faculty may be fixed at par with the regular staff considering their gross emoluments including appropriate costing for the short term and long term perks.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

25. Need to make a self assessment by faculty regarding their availability to students and closeness to the industry and research requirements. The availability of faculty to students and their contact hours data should be maintained in terms of time sheet and should be available for scrutiny by TEQIP mentors and auditors.
26. Faculty Counselor should be provided for each of a small group of 15 to 20 students is required to help them during their entire stay at the institution.
27. Make all the resources fully available to students and all junior faculty including the Laptop for seminar presentations. The Teqip equipment and software usage / availability / condition monitoring log should be available for scrutiny by TEQIP mentors and auditors.
28. The facilities of the institute including labs, library (including digital library), computer center, broadband Internet with online journal access etc. should be accessible at least for 14 to 18 hours a day, on all the 365 days of the year.
29. Information may be made available to parents / guardian over call center facility with secure access.
30. Additional faculty and laboratory support staff positions for proper implementation of TEQIP program are required on 3 years contract basis to be sanctioned and recruited immediately. The posts may be continued by financing after the tenure using the internally generated resources.
31. 24X7 access of a small task force kind of fast response action team for emergency situations.
32. Institutional resources including those of TEQIP may be made available to outside professionals (individuals with academic interest) on non-profit based payment terms.
33. It is necessary to review, revive / strengthen SONET program.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

34. A rigorous third party evaluation (typically by academic experts other than those of CEG) of the usefulness of the Jawahar Knowledge Centers established at least within the premises of TEQIP participating institutions should be immediately carried out to assess the suitability and effectiveness of the mentors proposed by CEG and also the relevance of the content being taught to students to ensure the proper utilization of resources of the institutions. On a sample basis, it was observed that the so called mentors themselves do not have the expected level of expertise, exposure and experience required for undertaking such task. Also the topics being handled are of elementary nature.
35. More international collaborations needed on the Incubation front, such as Austin Texas Incubator (ATI), CEDAR and CUBS of Univ. of Buffalo etc. The information regarding a number of general purpose MOUs entered between different departments of GOI and overseas universities / research institutions need to be well publicized – e.g. – the latest multi-partite MOU (signed by the PM during his last visit to US) between GOI / top US universities / Microsoft and other industry participants. Under the purview of such MOUs, Indian institutions can readily seek cooperation and networking. More of mentor based programs like MS – IT (CMU – USA collaboration program) and industry based programs like MS – VLSI (Qualcore collaboration from USA) should be initiated.
36. Industry interaction for the academic institutions may be enforced through Govt. insistence, in collaboration with Min. of Industries, Technology etc. through suitable Ordinance and / or G.O.
37. The industry association established by APSCHE during 2004 with M/s BEA Systems of SF, USA in connection with making available the full suite of their WEBLOGIC platform free of charge to benefit few hundreds of thousands of electrical engineering stream students and faculty every year all over AP with the state of the art J2EE environment should be put to full use by all TEQIP institutions.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

38. Industry incubation center may be established (if necessary under PPP model) by SPFU in collaboration with ATI – USA and / or similar initiatives elsewhere, including that of ISB – Hyderabad to effectively utilize the expert technical manpower and underutilized resources within AP.
39. Close association should be established for the academic institutions with the Software / IT Parks spread over AP, and Hardware Tech. Park / other Tech. Parks in and around Hyderabad with the support of the concerned Govt. Departments in AP
40. More informal networking at personal level on the national as well as international front needs to be established by the faculty of the TEQIP institutions. It is necessary for all the TEQIP participating institutions notwithstanding the formal networking to establish a close interaction and exchange of information at individual department level. This will avoid the situation of re-inventing the wheel by each institution individually and hasten the process of establishing the required facilities and activities in a very effective and timely manner.
41. Immediate and special attention towards non-IT placement of non-IT based specializations (IT related only limited to design automation in these areas) vital.
42. Graduate Engineer's Employability Test (GEET) based on the assessment of in depth knowledge typically encompassing three to four foundation courses of each engineering specialization may be organized in-house every semester during pre-final and final years of study.
43. Numerous opportunities in terms of the daily needs of the service departments of Police, Defence and public utility departments should be investigated and supported with the joint participation of students.

## **Brief on Campus Networking**

Following are the desirable features in view of TEQIP expectations –

1. High speed (2MBPS to start with, eventually expanding to ATM mode connectivity) WAN connectivity with internet access amongst all TEQIP participating institutions, with facility to interconnect to the proposed grid computing node at JNTU – HYD campus and all its resources.
2. Facilitating multiple CUG operation, sharing of all digitized content, software etc.
3. Hierarchical networking within each campus clearly identifying the need for institution level, department level and laboratory level servers & users, network load assessment, security requirement assessment in terms of clear demarcation of MZ and DMZ zones with adequate firewall and distributed IDS provisioning, system sizing in terms of simultaneous software usage, response time assessment and conformity within LAN and WAN environments, secure access to resources by designated faculty / faculty groups / students / student groups.
4. Access from hostels, staff quarters and over the net to external experts for supporting student needs.
5. Facility to host college web site with back-end database connectivity, optimize the internet access through provisioning of cache server, online payment / micro-payment (for additional resource utilization and for administrative needs such as issue of certificates, printer use, reprographic services etc), call center provision etc.
6. Gigabit networking interface on servers within the LAN having minimum 100MB connectivity to each client.

SECOND MENTORING  
JNTU COLLEGE OF ENGG., KAKINADA

7. Compliance and confirmation in respect of avoidance of the well publicized Finnish bug (ASN 1 related network sys sw dev environment) of 2001 – in case of all network elements proposed, particularly so in case of CISCO products
8. Highly effective anti-virus protection with regular updates at least until the completion of TEQIP project tenure.
9. Ethical hacking exercise to be carried out as deemed fit and necessary.