Department of Mechanical Engineering

Format for Academic Audit
(to be filled up by Academic Experts)
Academic year 2019-20

1. **Name of the Auditor:** Dr. Balla Srinivasa Prasad
   Designation: Associate Professor
   Address: Dept of Mechanical Engineering,
         GIT, GITAM Deemed to be University,
         Vishakhapatnam.
   Contact no: 9848321070
   Email ID: sballa@gitam.edu.in

2. **Name of the Auditor:** Sri. K. Venkata Poornesh,
   Designation: Sr. Engineer, Pressure Vessels Assly(Production)
   Address: BHEL-HPVP,
   Contact no: 8143772215
   Email ID: kvp@bhel.in

3. **The days and dates of visit:** 09-01-2021

To
The file of External
Academic Audit

PROFESSOR & HEAD
Department of Mechanical Engineering
ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCE A
Sangivalasa-531 162 VISAKHAPATNAM Dist A

1

ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES (A)
DEPARTMENT OF MECHANICAL ENGINEERING
(Permanently Affiliated to Andhra University, AICTE, Accredited by NBA NAAC with 'A' Grade)
Sangivalasa-531162, BheemunipatnamMandal, Visakhapatnam Dt.
Phone 08933-225084, 226395

ANITS

Features of Academic Audit Format

- Academic Audit Format is designed to incorporate the guidelines provided by National Knowledge Commission for various parameters.
- Academic Audit Format is designed to incorporate the most of the parameters related to various stake holders.
- Evaluation is based on nine different parameters indicating academic ambience at the campus at the campus.
- Proper weightage to each parameter as shown below.

S. No.	Parameters of Evaluation	Max Marks
1.	Curriculam	120
2.	Academic Facilities	100
3.	Teaching Learning proves	130
4.	Evaluation System	140
5.	Result	100
6.	General Academic Activities	100
7.	Feedback and Corrective Action	100
8.	Faculty Performance / Upgradation	110
9.	Attainment of CO's and PO's of all courses	100
10.	Total	1000

- Evaluation is more objective rather than subjective.
- Evaluation provides the specific information about the shortcomings.
- Academic Audit Format includes evaluation of system, students and facility.
- Evaluation of faculty includes evaluation by students as well as higher officer.
- Evaluation of students includes internal continuous evaluation, end semester evaluation, curricular and co-curricular and evaluation and placement.
- Evaluation includes infrastructural and other facilities provided by the institute / department for overall development of students.
- Academic Audit Format manual is being prepared to facilitate the institute / department and the auditor to furnish the information and to evaluate respectively.

Summary

Grading System:

S. No.	Parameters of Evaluation	Marks Obtained
1.	Curriculam	110
2.	Academic Facilities	78
3.	Teaching Learning proves	102
4.	Evaluation System	122
5.	Result	63.77
6.	General Academic Activities	83
7.	Feedback and Corrective Action	70
8.	Faculty Performance / Upgradation	82
9.	Attainment of CO's and PO's of all courses	93
10.	Total	803.77

Grade	Details	Total Marks scored
A+	Excellent	800 and above
A	Good	700-799
B	Acceptable	600-699
C	Not-acceptable	Below 600

1. Strengths
   i) Good curriculum
   ii) Student involvement in various co-curricular activities, Faculty FDPs, Publications.

2. Weaknesses
   i) Placements
   ii) Pass percentage
   iii) Consultancy works

3. Suggestions based on information
   Need to be improved in the areas of teaching weak stuents, improvement of coding skills & programming skills to get more placements and students participation in competitive examinations for higher studies.

Name and signature of Auditor

1. (Dr. B. Srinivasa Prasad)

2. (K V POORNESH)

3

1. Curriculam

S. No.	Sub-Parameter	Marks Assigned	Marks scored
1.	**Curricula content to provide understanding concepts of (with sufficient practical exposure)**		
	Mathematics and basic sciences	5	5
	Basic Engineering subjects	5	5
	Management and Humanities	6	4
	Programme Core	30	30
	Elective Subjects	6	6
	Interdisciplinary elective subjects	4	2
	Open Elective/Emerging subjects in curriculam	4	4
	NPTEL courses/MOOCs	4	2
	Communication and computer skills	5	4
	Proficiency in analysis, synthesis, modeling & simulation and problem-solving skills	5	5
	Innovative and creative abilities	5	5
	Human skills and relations, professional ethics, environment	4	4
	Entrepreneurial skills	4	3
	Hands on training and other industrial needs	4	4
	Self learning practices	4	3
2.	Do the curriculam take care of slow and fast learners learning simultaneously?	10	9
3.	Revision / Upgradation of the curriculum to incorporate appropriate new knowledge systems (based on no. of BoS/ APMC meeting)	15	15
	Total	120	110

Additional Comments / feedback / observations/ advice which may or may not be based on above points:

There is improvement in students enrolling for NPTEL courses and it can be further improved.
R-20 curriculum incorporated appropriate new knowledge systems.

2. Academic Facilities

S. No.	Sub-Parameter	Marks Assigned	Marks scored
1.	No of class rooms with LCDs	5	3
2.	No of laboratories and display of Cos and POs	5	5
3.	No of tutorial rooms	5	2
4.	Faculty rooms / cabins	5	5
5.	Equipments available (curricula and cost wise)	5	5
6.	Computing facilities (including software)	10	8
7.	Research/Project laboratory	10	7
8.	Electric power available for 24 x 7 and power backups	5	5
9.	Audio visual facilities	5	3
10.	Class rooms furniture (quantity and quality)	5	4
11.	Laboratories furniture (quantity and quality)	10	7
12.	No of books e-library, online journals and printed journals related to programme in the central library	10	9
13.	Department library /life long learning resources	10	7
14.	Internet and Wi-Fi facility	5	4
15.	Improvement made in infrastructural facilities during last year	5	4
	Total	**100**	**78**

Any additional comments / feedback / observations / advice which may or may not be based on above points:

The newly built automotive hub is an excellent facility. Similar facilities should be created for doing projects.

3. Teaching – Learning Process

Sr. No.	Sub-Parameter	Marks Assigned	Marks scored
1.	**Theory Courses**		
	Course File (Syllabus sheet, Course material, content betond syllabus, MID question papers, Answer sheets, Assignments, External QP, Quizes and Activites)		
	% of subjects for which teaching plan (including books to be referred) is prepared and execution plan submitted at the end of semester (including quality of execution)	10	8
	Quality of teaching plan and notes prepared by faculty	10	8
	Quality of Assignments	10	8
	Case studies/ Mini Projects given as activity for core courses	10	4
	Novel techniques used for effective teaching learning process (including use of A/V aids, development of software/ teaching aids, use or available software, use of available learning resources etc.)	10	9
2.	**Practical**		
	Quality of experiments conducted (Do the experiments designed facilitate the students in generating creative thoughts ?)	10	8
	Availability of laboratory manual and its quality	10	9
	Maintenance of laboratory equipments and new addition	10	8
	New experiments designed by UG/PG Students	10	6
3.	Corrective action taken by department against the students who are absent to the classes regularly	10	9
4.	Staff development programs for Faculty and / or supporting staff including FDP / STTP etc.	10	9
5.	Actions taken by department to improve performance of academically weaker students	10	9
6.	Efforts taken by department to improve overall performance of students including Workshop / Short term course/Hackathons/ Tech fest outside institute etc.	10	8
	Total	**130**	102

Any additional comments / feedback / observations/ advice which may or may not be based on above points:

Case studies to be included in core subjects. FDPs/STTPs are arranged even during lockdown period which is encouraging.

4. Examination and Evaluation System

Sr. No.	Sub-Parameter	Marks Assigned	Marks scored
1	**Examination Process**		
	Strict execution of academic calendar for all examinations	5	5
	Strict execution of academic calendar for declaration of result including revaluation, redressal etc.	5	5
	Transparency in the processes like internal assessment; scrutiny and declaration of result	5	5
	Appropriate weightage for continuous evaluation and end semester examination.	5	5
	Staff appointed for examination (invigilator, squad, office staff etc).	5	5
	Process of appointment of paper setters/ examiners / evaluators / moderators etc.	5	5
	Process of question paper printing and distribution (including quality and format of question paper)	5	5
2	**Quality of internal question papers**		
	Appropriate coverage of syllabus in class test and labelling of COs on the question paper	5	4
	Difficulty level of the question papers including numerical	5	4
	Innovation in question paper (Volume of repeated questions, correlation of question with competitive examinations)	5	3
3	**Quality of external question papers**		
	Coverage of all COs	5	5
	Difficulty level of the question papers (simple to pass and difficult to serve i.e. take care of average as well as sharp students)	5	3
	Do the questions, test and develop the problem –solving skills and students' proficiency in analysis and design ?	5	3
	Whether the marks assigned to the questions appropriate? Are the model answers submitted by paper setters to Examination Cell	5	3
	Language / Clarity / Variety etc in questions (Majority of the questions should not be just like write short note/ explain / discuss etc.	5	3
4	**Does the moderation of each question papers completed before paper printing ?**	5	5
6	**Assessment of Project work / Industrial training/ Internship term work**		
	Continuous assessment of project works/seminars through rubrics	5	4
7	**Assessment Process of theory external papers**		
	Presence of Process for evaluating external papers	5	5
	Model answers and marking scheme	5	5
	Evaluation quality (% of students applying for revaluation and of change in mark cases)	5	4
	Average experience of evaluators	5	3
	Moderation process	5	4
	Revaluation and recounting of answer sheets within mentioned period	5	5

	Does the Complaint Redressal Committee exist to tackle the cases of lapses associated with examinations ?	5	5
	Whether the photocopy of the assessed paper is made available the students, if requested ? Its duration.	5	4
8	**Involvement of external faculty member in the examination work as**		
	Paper setter	5	5
	Evaluator	5	5
	Examiner for practical / oral examination	5	5
	Total	**140**	**122**

Additional comments / feedback / observations/ advice which may or may not be based on above points:

Questions have to be innovative in external question papers to test the analytical skills.
The experience of the faculty has to be considered before appointing as evaluators. The minimum experience required should be 3 years.

8

5. Results

S. No.	Sub-Parameter	Marks Assigned	Marks scored
1	**Performance of students in examinations (Without backlogs)**	**60**	
	% of students passing IV year *0.15		6.85
	% of students passing III year *0.15		7.55
	% of students passing II year *0.15		8.66
	% of students passing I year *0.15		11.37
2	**Overall Performance of students (With backlogs)**	**40**	
	% of students passing IV year *0.1		7.30
	% of students passing III year *0.1		7.08
	% of students passing II year *0.1		7.13
	% of students passing I year *0.1		⸱7.86
	Total	100	63.77
Additional comments / feedback/ observations / advice which may or may not be based on above points: Improvement is necessary in the overall performance of students.			

6. General Academic Activities

S. No.	Sub-Parameter	Marks Assigned	Marks scored
1.	Whether all activities performed as per academic calendar ?	10	9
2.	Whether academic processes are student development centric ?	10	9
3.	% of students actually enroll for co-curriculum activities in or out of the Institute >70% 10 marks 30% to 70% linearly distributed <30% 00 marks.	10	9
4.	Whether co-curriculum activities of institute /department are evenly disturbed throughout the year?	5	4
5.	Are emergency issues resolved by conducting Academic Council / Examination Committee meetings which are ratified in subsequent meetings ?	5	4
6.	How much is overall placement of students (in % based on eligible students) and annual pay package ?	10	5
7.	How is the performance of students in Extension of services through NSS / NCC /Unnath Bharath Abhiyan?	10	9
8.	Industrial visits organized by department	10	8
9.	Technical events organized by the department for faculty and students including STTP / Expert lectures / Model or project competition / GD/ etc.	10	9
10.	Entrepreneurship/ Techno idea activities contest in the department	10	9
11.	Performance in competitive examinations like GATE/ CAT/GRE etc	10	8
	Total	100	83

Additional comments / feedback/ observations / advice which may or may not be based on above points:

Improvement is observed in student's participation & performance in GATE/GRE etc. Extension activities through NSS and various co-curricular activities are also good. UBA activities are initiated.

7. Student's Feedback and Corrective Action

Sr. No.	Sub-Parameter	Marks Assigned	Marks scored
1	**Feed back during the semester**		
	Frequency of obtaining student's feedback (Meetings of CRCs etc)	20	18
	Corrective action taken at the departmental level	20	18
2	**Suggestion box**		
	Availability of suggestion box	5	5
	How frequently suggestion box is opened ?(Maximum marks for opening twice in a month)	5	4
	Corrective action taken for suggestions at the departmental level	10	8
3	**Exit feed back**		
	Attainment of POs for the academic year	10	9
	Corrective Action of attainment of POs	10	8
4	Survey on outcome of the course / individual class using web tools	20	0
	% of total courses for which survey is done * 20		
	Total	**100**	**70**
	Additional comments / feedback/ observations / advice which may or may not be based on above points: Course outcome survey to be implemented.		

8. Faculty Performance

Sr. No.	Sub-Parameter	Marks Assigned	Marks scored
1	Feedback from students (Department index on 15 points)	20	18
2	Performance appraisal	20	16
3	% of faculty received "**outstanding**" remark *0.2		
	% of faculty received "**Excellent**" remark *0.15		
	% of faculty received " **positively good**" remark *0.1		
3	Qualification enhancement of faculty	5	2
4	Overall performance of department faculty members , based on research paper published in journals, conferences and seminar.	15	15
5	MODROB/ TAPEC/ RPS and other sponsored projects received by the department	5	5
6	Participation of faculty as resource person outside the Institution	10	4
7	Performance of faculty, based on books publication, patent filed and awards.	10	8
8	Performance of faculty, based on consultancy and internal revenue generation (IRG)	10	0
10	Innovative ideas implemented by the faculty for overall development of students both in co-curricular (quality circle, hobby club etc) and extra curricular	10	10
11	Whether guided PG/ Research scholars	5	4
	Total	**110**	**82**

Additional comments / feedback/ observations / advice which may or may not be based on above points:

Consultancy works, Qualification enhancement of the faculty & Faculty participation as resource person outside the institution are to be concentrated.

9. COs and POs of the Programme

Sr. No.	Sub-Parameter	Marks Assigned	Marks scored
1	Framing of COs to all the courses including theory, laboratory, project, Seminar, Industrial Training	15	14
2	Documentation of Justification table for CO-PO articulation table for all courses	15	14
3	Calculation of CO-PO attainment for all courses in the programme	20	19
4	Calculation of POs by indirect attainment (with reasonable sample size)	20	18
5	Reasons for non-attainment of COs and POs if any	15	14
6	Corrective measures for non-attainment of COs and POs	15	14
	Total	**100**	93

Additional comments / feedback/ observations / advice which may or may not be based on above points:

The Target level for PO-attainment should be increased.

(Dr. B. Srinivasa Rao)

K. V. Poornima

Date: 12. 02. 2021

ACTION TAKEN REPORT

(External Academic Audit for the Academic year 2019 – 20)

The external academic audit was held in the department of Mechanical engineering on 9th Feb 2021. The members of the audit team were 1. Dr Balla Srinivas Prasad, Associate professor, Dept of Mech Engg. , GITAM (Deemed to be University). 2. Mr. K.V.Poornesh, Sr Engineer,BHEL-HPVP. Vizag.

The comments / feedback/observations made by the team and the action taken thereof are recorded as below.

1. Comment / Suggestion/Observation:

Enrolling for NPTEL courses has improved but it can be further enhanced. R-20 regulations are implemented with addition of skilled courses.

Action taken:

The students of the batch 2018-2022 have registered for NPTEL courses which are mostly related to computer languages. The languages opted by the students are mostly C++ and Python. This would enhance their prospects in software related placements appreciably. The students will be encouraged to register for core courses also from the current academic year.

2. Comment / Suggestion/Observation:

Automotive hub has added value to the existing facilities. Similar facilities have to be created further.

Action taken:

Establishment of an Automotive hub in the department has been long due and it has materialized now due to the incisive efforts of the department. The department is also creating an exclusive facility for execution of final year projects. Hopefully this will be completed in the current academic year itself.

3. Comment / Suggestion/Observation:

Case studies have to be included in core subjects. FDPs/STTPS arranged during lockdown is encouraging.

Action taken:

This suggestion of the team will be duly considered while framing the syllabus for core subjects in both R19 and R20 regulations. The department is grateful to AICTE for granting permission and providing financial support in organizing STTPs in four phases during lockdown. The registration for the STTPs was unprecedented and included faculty members and research scholars from across institutions in the country.

4. Comment / Suggestion/Observation:

The external question papers should contain questions that test the analytical skills.

Action taken:

The external question papers are set by the faculty of other institutions. The paper setters are provided with the syllabus, course outcomes and model question paper of the pertinent subject. The paper setter has to take the course outcomes into consideration while setting the papers.

5. Comment / Suggestion/Observation:

The experience of the faculty has to be considered while appointing as paper evaluators. Minimum experience should be three years.

Action taken:

The suggestion will be given due consideration.

6. Comment / Suggestion/Observation:

Improvement is necessary in overall performance of the students .

Action taken:

The overall performance of the students in academics has shown an improvement from 55.78 to 63.77 from academic year 2018-19 to academic year 2019-20. The department will take the necessary steps to improve this further.

7. Comment / Suggestion/Observation:

Improvement is observed in student performance in GATE/CAT/GRE. Extension activities through NSS and by other means are also good.

Action taken:

A number of extension activities are being organized through NSS. The funds received through UBA by the institution have been utilized in promoting social activities in the neighbouring villages. Such activities will be further increased in the coming months.

8. Comment / Suggestion/Observation:

Course outcome survey has to be implemented

Action taken:

The course outcome survey will be conducted from the present semester.

9. Comment / Suggestion/Observation:

Consultancy works have to be initiated. Enhancement in faculty qualification and their participation as resource persons have to be stressed upon .

Action taken:

The department is upgrading the laboratories which will benefit the students by exposing them to a variety of experiments. Further consultancy works can also be taken up with the new equipment being added to the laboratory. Computerized UTM has been procured through MODROBS which will be used for research and consultancy works. The procurement of Talysurf has added value to the list of research facilities. Consultancy works will be initiated in a big way with the equipment purchased.

12.2.21

HOD
Mech. Engg,

ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
'UGC AUTONOMOUS'
(Permanently Affiliated to Andhra University, Approved by AICTE, Accredited by NBA & NAAC with 'A' Grade)
SANGIVALASA - 531 162, BHEEMUNIPATNAM MANDAL, VISAKHAPATNAM DIST.,
Phones : 08933 - 225083, 225084, 226131, Fax: 08933 - 226395
Website : www.anits.edu.in   e-mail : principal@anits.edu.in

28-12-2020.

From

Dr. B. NagaRaju,
Professor and HOD,
Dept. of Mech. Engg.,
ANITS.

TO
Dr. B. Srinivas Prasad,
Associate professor,
Dept. of Mech. Engg.,
GIT, GITAM Deemed to be university,
Vishakapatnam.

Sir,

Sub: Request to be member of Academic Audit Team- Reg.,

Our institution is accredited by NAAC in the year 2014 & the Department of Mechanical Engineering is accredited by NBA successively for two terms. This accreditation by NAAC and NBA has to be renewed periodically. In this context, An Academic Audit has to be organized every year both by internal & External members. The internal Audit is completed by IQAC members headed by the Principal.

Further an external Audit should be conducted along with internal audit. We therefore request you to be a member of the external academic team. We will be very privileged if you spare your valuable time & review the academics and give your valuable inputs to enhance the teaching learning process. We kindly request you to suggest a suitable date in the 2nd week of January.

Prof. B. NagaRaju,
Dept. of Mech. Engg.,
ANITS.

PROFESSOR & HEAD
Department of Mechanical Engineering
ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCE
Sangivalasa 531 162 VISAKHAPATNAM Dist A.6

ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
'UGC AUTONOMOUS'
(Permanently Affiliated to Andhra University, Approved by AICTE. Accredited by NBA & NAAC with 'A' Grade)
SANGIVALASA - 531 162, BHEEMUNIPATNAM MANDAL, VISAKHAPATNAM DIST.,
Phones : 08933 - 225083, 225084, 226131, Fax: 08933 - 226395
Website : www.anits.edu.in   e-mail : principal@anits.edu.in

28-12-2020.

From

Dr. B. NagaRaju,
Professor and HOD,
Dept. of Mech. Engg.,
ANITS.

TO
Mr. K. Venkat Poornesha,
Sr. Engineer, Pressure Vessels Assly(Production),
BHEL-HPVP,
Visakhapatnam.

Sir,

Sub: Request to be member of Academic Audit Team- Reg.,

Our institution is accredited by NAAC in the year 2014 & the Department of Mechanical Engineering is accredited by NBA successively for two terms. This accreditation by NAAC and NBA has to be renewed periodically. In this context, An Academic Audit has to be organized every year both by internal & External members. The internal Audit is completed by IQAC members headed by the Principal.

Further an external Audit should be conducted along with internal audit. We therefore request you to be a member of the external academic team. We will be very privileged if you spare your valuable time & review the academics and give your valuable inputs to enhance the teaching learning process. We kindly request you to suggest a suitable date in the 2nd week of January.

28.12.20

Prof. B. NagaRaju,
Dept. of Mech. Engg.,
ANITS.

PROFESSOR & HEAD
Department of Mechanical Engineering
ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
Sangivalasa-531 162 VISAKHAPATNAM Dist. A P