Department of Electrical and Electronics Engineering
IQAC

DEPARTMENT PERFORMANCE INDEX-ANITS (DPI-A)
Modified w.e.f 2021-22

Name of the Audit Department: Electrical and Electronics Engineering.

Academic Year: _____2021-22____ , 20th Dec, 2022.

S. No	Parameter	Max. Marks	Self-Score	Score by Auditors
1	Teaching – Learning Processes	300	259	259
2	Student's Performance	200	149.53	145.53
3	Faculty contributions	250	145	140
4	Co-curricular activities	100	69	69
5	Students support systems	85	56	56
6	Continuous improvement	40	27	27
7	Best Practices	25	19	19
	Total Score	1000	724.53	719.53

Availability of ATR and Impact analysis / implementation on *comments of previous NBA committee/ IA* remarks: *(Copy may be provided by the departments)*

Names of the Auditors: Signatures:

1. P. M. RAJ

2. M. GOPICHAND NAIK

Signature of the HoD (Auditee Department)
Head of the Department:
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Department of Electrical and Electronics Engineering
IQAC (2021-22)

DEPARTMENT PERFORMANCE INDEX-ANITS (DPI-A)
External Audit (Modified w.e.f 2021-22)

		Max	Awarded
1.	Teaching – Learning Processes:	300	259
2.	Student's Performance :	200	149.53
3.	Faculty contributions :	250	145
4.	Co-curricular activities :	100	69
5.	Students support systems :	85	56
6.	Continuous improvement :	40	27
7.	Best Practices :	25	19
	Total :	**1000**	**724.53**

Availability of ATR and **Impact analysis / implementation on** *comments of previous NBA committee/ IA* **remarks: (Copy may be provided by the departments)**

1. **Teaching Learning Processes (Max – 300):**

S. No	Description	Max marks	Marks awarded	Remarks
1.1	**Initiative for improvement of quality in teaching and learning (95)**			
1.1.1	Availability of Academic Calendar of the department based on Institute's academic calendar and its effective compliance / implementation and adherence to schedule	5	5	
1.1.2 (a)	Implementation Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences	5	5	
1.1.2 (b)	Teachers use ICT enabled tools including online resources for effective teaching and learning process	5	4	Different form of digital materials like videos, online research papers are recommended to be used.
1.1.2 (c)	Usage of MOODLE Check apart from Lecture notes availability of quizzes, beyond curriculum contents, students usage, how useful for self learning for 2019-20 and 2018-19	5	4	Curriculum contents available for self-learning. Beyond syllabus topics and digital content like technical videos and related research

					content (publications etc.) are advised to be incorporated.
1.1.3	Guidelines to identify weak and bright students(1M); post identification actions taken(2M); impact observed and recorded(2M)	5	5		
1.1.4	Classrooms and seminar halls with ICT- enabled facilities such as smart class, LMS, etc.	5	4		All classes should be equipped with ICT-enabled facilities.
1.1.5 (a)	Quality of laboratory experience with respect to conducting, recording observations	5	5		
1.1.5 (b)	Laboratory Evaluation process: Usage of Rubrics for assessment	10	10		
1.1.5 (c)	Faculty / Technician explanation in labs (at least 2-3 labs)	5	5		Understanding of every individual to be focused
1.1.6 (a)	Feedback collection and analysis (CRC/ Student feedback)	5	5		Higher participation should be encouraged in feedback process
1.1.6 (b)	Actions taken	5	4		
1.1.6 (c)	Impact of action recorded Check action taken exactly matches with the analysis	5	3		Impact analysis revision is recommended, to reflect the actions taken in a better way.
1.1.7	Identification of curricular gaps (5M) Analysis and action taken (5M)	10	5		
1.1.8	Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the department. $$Score = 5 * \frac{No.\ of\ courses\ focus\ on\ such\ catogeries}{Total\ No.\ of\ courses}$$	5	5		
1.1.9	Number of value-added courses for imparting transferable and life skills offered and students enrolled If No. of Value added courses > 3 and enrolled students count >50 ---- 5M If 3>No.of Value added courses <=1 and enrolled students count >25 ---- 3M Else --- 0M	5	1		More value-added courses should be proposed and students should be more encouraged and made aware for the same.
1.1.10	Structured feedback for design and review of syllabus (semester wise / year wise) is obtained from 1) Students, 2) Teachers, 3) Employers, 4) Alumni --- 5M Action taken and impact analysis --- 5M	10	9		
1.2	**Quality of end semester examination, internal semester question papers, assignments and evaluation (30)**				
1.2.1	Process of internal semester question paper setting, scheme of evaluation and its compliance, existence of committee	5	5		

1.2.2	Question paper validation to ensure desired standard from outcome attainment perspective as well as learning levels perspective (Quality of Q papers) Internal (5) + external (5)	10	9	External papers to include better reflection of outcome attainment
1.2.3	Mapping of questions with the Course outcomes, Blooms taxonomy, and indicating the above with percentage wise weightage for last 3 assessment years.	10	8	
1.2.4	Assignments / case studies / seminars to promote self-learning,(for coverage of non-domain POs and also higher levels of Blooms taxonomy) survey of contents from multiple sources, assignment evaluation and feedback to the students, mapping with the COs.	5	5	
1.3	**Quality of student projects (30)**			
1.3.1	Guide allocation and Projects identification strategies	5	5	
1.3.2	Continuous monitoring mechanism and evaluation system (5M), Usage of Rubrics for project assessment Methodology(Appropriately documented) to assess individual contribution/understanding of the project as well as collective contribution/understanding {Process to assess individual and team performance}(5M)	10	8	
1.3.3	Projects classification (application, product, research, review etc.) consideration to factors such as environment, safety, ethics, cost, standards (non –domain factors) and mapping with program outcomes and program specific outcomes. (5M)	5	5	
1.3.4	Quality of journal where the paper has been published /quality of competition in which award has been won for the projects	10	5	Lack of project conversion into quality publications.
1.4	**Industry related interaction (25)**			
1.4.1	Industry supported laboratories	5	5	
1.4.2	Industry involvement in the program design and Curriculum.	5	5	
1.4.3	Industry involvement in partial delivery of any regular courses for students	5	1	Industrial experts to be involved for few courses to impart better industrial experience and exposure to students
1.4.4	Impact analysis of industry institute interaction and actions taken thereof	5	5	
1.4.5	Industrial /internship /summer training of more than two weeks and post training Assessment	5	5	
1.5	**Factors related to Outcome based education (100)**			
1.5.1	Explanation of Articulation matrix for COs and POs and also fixing proper attainment levels of PO, PSO and PEO assessment.(Check faculty awareness)	15	12	Revision of articulation matrix justifications are recommended as per the attainment level
1.5.2	Coverage and quality of all direct and indirect assessment tools for POs and PSOs (Such as COs,	15	15	

	projects, placements, higher education etc., for direct assessment and recruiter, alumni, employer, parents etc., for indirect assessment). *Reasonable sample size is critical for each tool*			
1.5.3	Updating the data of CO /PO/PSO assessment in a time bound manner and action / measures taken and impact	20	17	Measures taken to be included.
1.5.4	Initiatives for faculty and student awareness on OBE (10M) and verification of faculty and student awareness i.e. impact analysis (10M)Physically check	20	20	
1.5.5	CO attainment tools based on internal exam evaluation + external examination Procedures followed {Based on assessment on performance of students question wise in both cases}	20	19	Procedures are recommended to be more simplified
1.5.6.	Action taken on non attainment of POs / COs	10	10	
1.6	**Laboratory facilities (20)**			
1.6.1	Maintenance and overall ambience (to check physically whether the equipment is working)	5	5	Equipments to be regularly verified
1.6.2	Safety initiatives in laboratories (incl Charts)	5	5	All safety guidelines are followed
1.6.3	Facilities (additional equipment/ softwares) created for improving the quality of learning.	10	6	Additional equipment/ modern softwares are recommended for advanced technical exposure to students

2. *Student Performance (Max-200):*

S. No	Description	Max marks	Marks awarded	Remarks
2.1	**Success rate (90)**			
2.1.1	a) Success rate of students who cleared programme without backlogs in any year of study including lateral entry=20×(Students graduated / Students admitted)	20	15.65	Student identification with below par performance is recommended
	b) Improvement in success rate from previous years (1M for each percent increase)	5	4	
2.1.2	a) Success rate in any year of study including lateral entry=15×(Students graduated / Students admitted)	15	13.56	
	b) Improvement in success rate from previous years (1M for each percent increase)	5	4	
2.1.3	Academic Performance in Third Year Academic Performance = 1.5 * API (Academic Performance Index) API = (3rdYear Grade Point Average of all successful Students on a 10 point scale X number of successful students)/number of students appeared in the examination)	15	12.24	Academically weak students to be identified and required support to be delivered
2.1.4	Academic Performance in Second Year {Same as above formula in 2.1.3}	15	13.23	Academically weak students to be identified and required support to be delivered
2.1.5	Academic Performance in First Year { Same as above formula in 2.1.3}	15	13.5	More interaction and motivation to be encouraged among new students
2.2	**Student enrollment** (>=90% - 15M; >=80% - 10M; >=70% - 5M; otherwise – 0)	15	15	
2.3	**Placement, Higher Studies and Entrepreneurship:** 50 X (students placed + admitted to higher studies + 3 X entrepreneurs) / (Total students)	50	29.35	Proper motivation, awareness and support to be extended towards students for better results.
2.4	*Achievements in curricular, co-curricular and extra- curricular activities (45)*			
2.4.1	Paper, model presentation etc in International Level (IL), National Level * (NL), State Level (SL) Marks=2.5x (10 x SPIL + 5x SPNL + 2.5 x SPSL)/TNS SPIL=students participated in International Level SPNL=students participated in national Level	25	17	For higher involvement in these activities students should be motivated and encouraged

	SPSL=students participated in state Level TNS= Total number of students in 2nd, 3rd and 4th year			for the same with better awareness.
2.4.2	Certificate programs or courses like NPTEL/Course-era/Udany etc. attended by students • Participation for 4 weeks : 3 M • Participation for 4 to 8 weeks: 5M • Participation more than 8 weeks: 10 M Assessment = 20×Sum of points/0.5 x No. of students	20	15	Awareness regarding significance of such courses needs to be shared among students.

*National level (Paper, model presentation etc) conducted in-house is treated as State level

3   *Faculty contributions (Max-250):*

S. No	Description	Max marks	Marks awarded	Remarks on non compliance
3.1	**Average percentage of full time teachers with Ph.D.** Number of available PhDs in the department >=20% - 10M 20% <Number of available PhDs in the department>10% - 5M	10	10	
3.2	***Research Guidance (20)***			
3.2.1	Number of Teachers recognized as research guides Score: Number of Teachers recognized as research guides	5	3	
3.2.2	M.Phil / M.Tech./ (1M / candidate)	15	12	
3.2.3	Ph.D. (5 M/ candidate)		03	
3.3	***Research projects funded by government and nongovernment agencies during the last five years (45)***			
3.3.1	Major (More than 10 lakhs) 15M / project	25	0	More number of research projects to be applied on latest research areas.
3.3.2	Minor (5M/ project)		0	
3.3.3	Patents (10 M/ patent)	10	0	
3.4	**Revenue generated from consultancy: More than 2 Lakhs : 10 marks < 2 lakhs: 5 marks**	10	0	Awareness of revenue generation from consultancy is recommended
3.5	**Publications(75)**			
3.5.1	Number of books and chapters in edited volumes / books published during the last five years (5M / each chapter)	10	5	More book and chapter proposals to be made.
3.5.2	Publication in journals: Marks awarded=50 X P/F F = number of faculty, P = number of publications P=1xSCI+0.6xWOS+0.6xScopus+0.3xUGC	50	35	More publication in quality journals is recommended
3.5.3	Bibliometrics of the publications during the last five years based on average citation index in Scopus/ Web of Science or PubMed 1. No. of citations for last 3 years / No. of publications for last 3years If the percentage $\geq$ 100 then the marks awarded 5 Marks 2. No. of publications which were cited for last 3 years / No. of papers published for last 3 years If the percentage $\geq$ 100 then the marks awarded 10 Marks	15	12	Citations can be increased with more paper publication in good quality journals
3.6	***Papers presented in seminars / conferences(30)***			
3.6.1	Marks = 30 x (1.5 x NFPI +0.5xNFPN)/TNF NFPI=number of faculty presented in international	30	18	

	seminars/conferences NFPN=number of faculty presented in national seminars/conferences Max: 30M			
3.7	*Seminars / Conferences / Workshops / Symposia wherein served as Resource person(10)*			
3.7.1	Keynote Speaker / Chairman / Co-Chairman / Distinguished Guest / Key Speaker / Lead Discussant International: 4M/session (max 20) ; National: 2M/session (max 10)	10	4	Faculty participation as resource person to be more encouraged
3.8	*Membership in editorial boards and number of papers reviewed* (2.5M / paper)	5	4	
3.9	*Membership / executive positions in professional bodies and their related activities*(2.5M / activity)	5	5	
3.10	Development activities (product development, instructional materials, working models, charts, monogram etc.) 2.5M/activity	5	4	
3.11	*Guest lectures delivered by faculty* **Industry / research institutes / universities 2.5M / lecture**	5	0	Collaboration with industries/other institutes should be focused for participation as guest lectures
3.12	**Teachers awarded national / international fellowship and honors for advanced studies/research during 2019-20 (only academic bodies and Govt. Organizations) 2.5M/award**	5	0	Advanced research work to be focused
3.13	**Faculty Qualification** $FQ = 1.5x [(10X + 6Y)/F)]$ where X is the no. of regular faculty with Ph.D., Y is the no. of regular faculty with M.Tech., F is no. of regular faculty required to comply 1:25 Faculty Student ratio including LE.	15	13	
3.14	**Faculty participation in online/ face-to-face Faculty development/training activities/STTPs (Professional Development Programmes, Orientation /Induction Programmes, Refresher Course, Short Term Course).** A Faculty scores maximum five points for participation • Participation in 2 to 5 days FDP: 3 M • Participation>5 days FDP: 5M • Assessment = 3×Sum of points/0.5RF where RF is required faculty as per 1:25 ratio	20	18	

4. Co-curricular activities (Max-100):

S. No	Description	Max marks	Marks awarded	Remarks on non compliance
4.1	*Expert faculty / industrial heads visits* From Foreign universities / IITs, NITs /research organizations / companies (5M/ visit) From universities (4M / visit)	15	4	Expert visits from institute of high accord to be encouraged
4.2	Number of workshops/seminars/ FDP / STTP conducted for faculty during the last five years.	15	10	More faculty programs need to be encouraged
4.3	Department Journal / News letter / Magazine / Website	5	5	
4.4	Capacity development and skills enhancement activities are organised for improving students capability 1. Soft skills 2. Language and communication skills 3. Life skills (Yoga, physical fitness, health and hygiene) 4. Awareness of trends in technology Student clubs	15	12	
4.5	*Alumni association meetings*	5	3	Strong alumni network is recommended
4.6	*Contributions from Alumni* (Technical collaboration / employment providers / aid for infrastructure improvement / scholarships)	5	4	
4.7	Number of extension and outreach Programs conducted in collaboration with industry, community and Non-Government Organizations through NSS/ NCC, etc., yearwise during the last five years **students participating in extension activities also required**	10	8	
4.8	Number of functional MoUs with institutions of national, international importance, other Institutions, industries, corporate houses etc. year wise during last five years (only functional MoUs with ongoing activities to be considered)	5	3	More collaboration and MoUs with such institutions/industries is recommended for better exposure of faculties and students
4.9	*Adjunct faculty(Minimum 30 Hrs engagement /semester)(10M / faculty)*	10	8	
4.10	Number of awards/medals won by students for outstanding performance in sports/cultural activities at inter-university/state/national / international level (award for a team event should be counted as one) during the last five years.	10	8	
4.11	Presence of an active Student Council & representation of students on academic & administrative bodies/committees of the department	5	4	

5. Student support systems (Max-85):

S. No	Description	Max marks	Marks awarded	Remarks on non compliance
5.1	**Mentoring system:** Efficacy of the system (5M), impact analysis (10M)	15	11	Impact analysis to be a better reflection of mentoring system
5.2	**Self learning (15)**			
5.2.1	Scope for self-learning	5	4	
5.2.2	The facilities provided such as materials for learning beyond syllabus, Webinars, Podcast, MOOCs etc. and demonstrate its effective utilization	10	8	Beyond curriculum topics recommended
5.3	**Career Guidance, Training, Placement (15)**			
5.3.1	Number of students participated by career counseling and guidance for competitive examinations offered by the Institution during the last five years.	5	4	
5.3.2	Number of students benefited by career counseling and guidance for competitive examinations offered by the Institution during the last five years.	5	5	
5.3.3	Number of students Appearing Vs qualifying in state/ national/ international level examinations (eg: IIT/JAM/ NET/ SLET/ GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/ State government examinations, *etc.*)) year-wise during last five years	5	3	More supporting data to be provided
5.4	**Entrepreneurship Cell (25)**			
5.4.1	Subject offered related to Entrepreneurship	5	4	Under open electives more courses may be offered to students under entrepreneurship
5.4.2	Entrepreneurship activities	5	2	
5.4.3	Students benefitted	5	2	
5.4.4	Paper published	5	0	
5.4.5	Innovative projects	5	1	
5.5	**Grievance redressal system for the students and action taken**	5	4	
5.6	**Department library (10)**			
5.6.1	No. of Volumes, titles, journals and magazines available in the department library	5	4	
5.6.2	Usage of department library by teachers and students	5	4	

6. Continuous Improvement (Max-40):

S. No	Description	Max marks	Marks awarded	Remarks
6.1	PO and PSO attainment {2M For Each 1% Increase} 2015-19 batch to 2016-20 batch	8	8	
6.2	Pass percentage{ 2M For Each 1% Increase}	8	8	
6.3	Intake: (Improvement in mean rank in open category- 5M) + (>95% seats filled -5M90-95% seats filled – 3M, and below 90% -0M)	8	5	
6.4	Student Placements, Higher Studies & Entrepreneurship {1M For Each 1% Increase}	8	2	Students need to be encouraged and guided individually for their better achievement after course completion
6.5	Faculty Publications {1M For Each 1% Increase}	8	4	Research work and publications to be encouraged among faculties.

7. Innovative / Best practices and their impact (Max-25):

S. No	Description	Max marks	Marks awarded	Remarks
7.1	Describe the best practices the department claims to have a niche for itself in the areas such as Teaching learning process, community engagement, co-curricular activities, evaluation, feedback system, Student participation in other activities, Alumni activities etc., (which makes the dept unique)	10	8	
7.2	The impact of such activities	15	11	Sufficient proof need to be sufficed as part of impact analysis for such activities