INTERNAL QUALITY ASSURANCE CELL

V R SIDDHARTHA ENGINEERING COLLEGE

ACADEMIC AUDIT

Evaluation Sheet

Department Name : ELECTRICAL & ELECTRONICS ENGINEERING

Programme Name : B.Tech

Academic Year : 2019 - 20

I. PEO's, PO's and Curriculum		
S. No	**Criteria**	**Observations**
1	PEO's and PO's attainment	FCARS of odd semester are available
2	Stakeholders feedback and evidence related to curriculum design BOS/DAB	Stake holders feed back(Faculty,student,Parents, Industry &Alumni inputs) is available -More industry oriented courses -More Elective courses With the approval of DAB and BOS boards.
3	Extent of its satisfaction with curriculum revision	Curriculum is revised by considering the Inputs from stake holders(Faculty, student, Parents, Industry & Alumni). Inputs given by DAB members Inputs given by BOS members **In VR17 Regulation** Introduced advanced courses like Digital Controllers Lab, PLC & SCADA Lab & Industrial drives lab in Programme Elective courses Internships and Project related courses are strengthened.
4	Percentage of lab component -No. of new experiments designed -Hardware / Software developed or Societal problems solved.	Overall 30.65% of laboratory component is available under VR17 regulation for UG program Totally 32 batches identified societal problems under EPICS course. Overall 26.23% of laboratory component is available under VR14 regulation
5	Evidence of academic flexibility (Credits / Transitory regulations / Core or institutional electives)	Available, CBCS is introduced in VR14 and VR17 regulation Criteria for CBCS in VR17 regulation is Student CGPA should be >=7.75 and no backlogs upto N-2 semester. In this academic year 32 students of sixth semester opted Digital controllers

		lab(17EE4755D) and 44 students of fifth semester opted Solar photovoltaics (17EE4801A) as CBCS Course. Transitory regulations are available from VR10 to VR14 & VR14 to VR17 regulation Introduced six Programme Electives and Starts from sixth semester to eighth and open Electives (self learning, Institutional Elective and general Elective from fifth semester to eighth semester)

II. Faculty information and their contribution

S. No	Criterion	Observations
1.	Teacher- student ratio **No. of Students =Sanctioned Intake + Actual Admitted Lateral Entry Students(as per NBA prequalifier)**	Second year=120+14=134 Third year=120+24=144 Fourth Year=120+24=144 Total students(sanctioned intake)=422(UG) PG students36 Faculty strength:31 **SFR=422+36=458/28.57=16.03(Excluding First year faculty)**
2.	Faculty Cadre ratio	2:4:12(required for UG program) for two sections 1:1:0(for PG program) for one section Required(2.54:5.08:15.06) (for both UG & PGprograms) Available4:4:22(for both UG & PG programs) FCR:25.99
3.	Faculty qualifications	FQ = 2.0 x [{10X +4Y}/F] where No:of PhDs:X= 13, M.E/M.TechsY=18 {(F=458/20=22.9)as per NBA 404/22.9 =17.64
4.	Faculty experience & retention	Faculty experience (inside+outside) More than 5 years:23members Less than 5years: 08 Faculty retention is considered taking CAYm2 as base year (Three years):21 members
5.	Faculty contribution in writing: ……..books: ……..chapters:	Book chapters:07
6.	Members in Editorial boards: Awards/Rewards received:	1. Dr.B.Venkateswara Rao Editorial board member of MAT journals 2.. Dr Subhajit Dawn Editorial board member of Science Publishing group Inc
7.	Faculty in professional organizations: And faculty contribution:	1. Sri Srinivasa Rao MD NRDCAP visit to view Solar & EHV Projects 2.Conducted workshop under institution of engineers.

		One day seminar on OBE by Md.Rashid
8.	Industry collaborative projects	07 (in Seimens)
9.	Faculty as resource persons in workshops / training activities	Resource Person for "one day workshop on FPGA Controllers for Power Electronic Applications" *EEE Department, JNTU K, Kakinada*
10.	National level events organized -Conferences: -Workshops/ Seminars: -FDPs: International level events organized -Conferences: -Workshops/Seminars:	Workshops/seminars organized 1. Seminar on "Electrical Vehicle Technology" Sponsor: SAGTE 2. One day Seminar on "Outcome based education" Sponsor: SAGTE 3. One week Workshop on " IOT Fundamentals and advanced concepts" Sponsor: SAGTE & APSSCD 4. One week Workshop on " IOT Fundamentals and advanced concepts " Sponsor: SAGTE & APSSCD 5. Workshop on 'Electronic component testing and PCB Design'Sponsor: SAGTE 6. One week FDP on "Computational intelligence and modeling in modern power systems" Sponsor: SAGTE 7. Organized International Conference on Smart Energy Systems and Electric Vehicles (ICSESEV-2020)
11.	List of conferences/seminars/ workshops/ FDP's/ any exclusive programs attended for enrichment of teaching - learning process	Faculty attended Programs: Workshops: 15 coursera courses:189 guest lectures :06
12.	Faculty interaction with outside world (BOS/NBA/Examiner for PhD evaluation / selection committee / Academic auditing /Chief guest /etc.)	Dr PV R L Narasimham

III. Teaching-Learning Process and Evaluation		
S. No	**Criterion**	**Observations**
1.	Student performance indices Attendance Exams	Performance of students in attendance during the A.Y:2019-20 3rd sem:det:----3 cond:----1 4th sem:det:---- 1 cond:----3 5th sem:det:---- 0 cond:----2 6th sem:det:---- 0 cond:----0 7th sem:det:---- 0 cond:----2

		8th sem:det:---- 0 cond:----2 Performance of students in Marks of Batch wise of 2016-2020:- Total students appeared:133 First class with distinction: 50 First class:38 Second class:2 Failure:43 Total pass: 90 Pass percentage:67.66 ***Result declared without considering supplementary results of semester I to VII**
2.	Mechanism and activities for slow learners for their improvement and outcomes	1.Remedial classes are conducted for the students who got less than 50% marks in internal assessment (of A-I& II and S-I) 2 Classes are conducted for failure students in first year for the course BEE and Network Analysis-I
3.	Student counseling /mentoring mechanism	Maintaining Proctor Dairy. For every 18-20number of students one counselor is allotted. For every 15 days attendance is monitored and will be informed to parents about their wards who are having less than 75% attendance and less than 50% of marks in internal assessment.
4.	Tutorial classes	They are included in the time table as per the curriculum
5.	Initiatives taken for innovative mini and major projects -Training for students & faculty	1. Workshops conducted on PCB design, IOT, Robotics using IOT and hobby projects.
6.	Best student projects with awards	External evaluators for section A and B are different. For section A & B the external evaluators selected three projects from each section. At the department level out of six three projects are selected as best projects. 6 projects from section A & B which are selected as best projects by External Examiner in online are listed below. 1. Microcontroller Based Phase Sequence Detecting And Correcting Device For On-Load Tap Changer 2. Smart Water Dispenser 3. IOT Enabled Smart Devices Using ESP8266-01 4. PLC Based Automated Coal Crushing &Conveyor System 5. Geothermal Power Plant Design Using PLC& SCADA

		6. Mechanized Synchronization Of Alternators Using PLC & SCADA
7.	Monitoring of teaching-learning process -- Assessment of teaching process in classrooms. -- Random verification of evaluated answer papers and question paper during the semester. -- Innovative teaching methods presented if any -- Verification of course files	1. Assessment of teaching process in classrooms is monitored by Head of the Department. 2. Yes. Random verification of approximately 10-20 answer scripts have been evaluated for 5 courses during the semester. The internal assessment question papers during the semester are verified and followed Blooms taxonomy as well as cognitive level but verification have not been conducted due to covid-19 pandamic situation in A.Y 2019-20. 3. Yes. All the course files have been verified by both Program me coordinator and H.O.D.
8.	Training programs conducted for students Guest lecturers: Seminars/ workshops:	**Six** Guest lectures are conducted **Six** workshops and **two** seminars are conducted for first, Second and third year students on various domains to enhance their technical skills.
9.	MOUs with Industries for internship	The department has MOUs with—industries
10.	Students feedback	Conducting feedback twice in a semester with follow up action.
11.	Feedback follow-up action	Yes. Appreciation letters will be given for good faculty and information given to the faculty who got less feedback for corrective action.
12.	Scope for Self-learning Certificate courses Online courses	Course era NPTEL
13.	The differential requirements of student population **Male :** **Female :** **Cut-off rank** OC: BC: SC: ST: PH: **Range of CGPA & % of students** 10 -8 CGPA: 7 CGPA: 6 CGPA: 5 CGPA: No. & % age of failures: Success rate as per NBA guidelines:	B.Tech Male: 60 OC (13)+OBC(27)+BCE(5)+SC(12)+ST(3 Female:65 OC(28)+OBC(23)+BCE(1)+SC(11)+ST(2) Cut off Rank EAMCET: [OC: 20043(G) & 124932(F)]; [BCA :36522G)+57897(F)];[BCB:43157(G)+53435(F)]; [BCC:30195(G), BCC: 45968(F)];[BCD: 22738(G)+95940(F)] [BCE:52481(G)+51245(F)];[SC:112384(G)+ (96994)];[ST:127962(G)+123927(F)];[CAP:19336 (G),15932(F)];[NCC:67370(F)]; [PH:22792(G)+25113(F)];[EWS:17287(G),33900(F)]. **LATERAL ENTRY** Male: 8 OC (1)+OBC(3)+SC(2)+ST(1))+NCC(1) Female:6OC(2)+OBC(1)+SC(3) ECET: [OC: 1760(G)]; [BCA:1339(G)];[BCB:1624(G);

		SC:960(G). M.Tech Male: 7 OC (1)+OBC(2)+SC(4) ECET: [OC: 1760(G) [BCA:1339(G)];[BCB:1624(G); SC:960(G). 10 -8 CGPA:82 7 CGPA:36 6 CGPA:9 5 CGPA: 5 No. & % age of failures: --
14.	Placements (%): Industries / organizations:	84/90=93.33%(14 companies visited)
15.	Higher studies (%): Institutions:	Total 5 students qualified in different competitive exams.
16.	Activities of students in professional bodies: Awards in co-curricular activities:	Two guest lectures are conducted. 50 students participated in 82 events conducted by premier institutions like IIT-HYD,IIT-Madras and achieved three first prizes in Technical event(Shasthra-2020)

IV. Research, Consultancy and Extension		
S. No	**Criterion**	**Observations**
1.	Faculty publications in journals: Peer reviewed Journals: Thomson Reuters Impact factor Journals: S-index: h-index:	Journals:20 1. IEEE Industrial Electronics Magazine, Solar energy, (Elsevier), Electric power system research, (Elsevier), Energy, (Elsevier), Renewable and sustainable energy 2. IEEE Transactions on Industrial Electronics, IEEE Transactions on Power Electronics, IEEE Transactions on Industrial Applications, IEEE Transactions on Electromagnetic Compatability, IEEE Journal of Photovoltaics , IEEE Transactions on Energy Conversion, Journal of Engineering Science and Technology Elsevier 3. IEEE Transcations on Industrial Electronics, IEEE Transcations on Power Electronics, IET Power Electronics 4.IEEE Transcations on Power Electronics 5.Joural of The Institution of Engineers (India) Series B (SCOPUS) 6. 1. COMPEL - The International Journal for Computation and Mathematics in Electrical and Electronic Engineering , 2. Journal of Engineering Science and Technology, 3.Advances in Electrical and Electronic Engineering, 4.International Journal of Power Electronics, 5. International Journal of Swarm

		Intelligence Research (IJSIR), 6. Iranian Journal of Science and Technology - Transactions of Electrical Engineering, 7. International Journal of Renewable Energy Research 7. Electric Power Components and Systems - Taylor & Francis, 2. Swarm and Evolutionary Computation - Elsevier, 3. Energy Conversion and Management - Elsevier, 4. International Journal of Electrical Power and Energy Systems - Elsevier, 5. International Journal of Emerging Electric Power Systems
2.		
3.	Publications in conferences: - National - International	National:0 International: 18
4.	Percentage of faculty contributing in … ……..research publications: ……..books: ……..chapters:	Percentage of Faculty contributing in book chapters :7/30 = 23.33% Percentage of Faculty contributing in Research publications: Journals:20 Conferences:18
5.	PhDs -Registered: Submitted: Awarded: PhDs guiding /guided:	Registered: 3 Submitted: 1 Awarded: 1 PhD Guiding:10
6.	Funded R&D projects and consultancy work Applied: Ongoing: Completed:	Applied: 2 Ongoing: 1 Completed: 0
7.	Faculty intellectual property rights	Nil
8.	In-house R&D grants & projects and their outcomes	1 (Partially Completed)
9.	New research facilities/ laboratory facilities provided	Yes
10.	MOU's with industries/ R&D/ Premier institutes	2 with industries 1. SARADA 2. Plexim
11.	Research centers of excellence established: Outcome in research centers:	NIL
12.	Skill development centers established: outcome:	Yes APSSDC -01

		SEIMENS Lab:04 labs relate to EEE Outcome: Projects was done by students
13.	Faculty involved in research and consultancy	18 (based on total number of active paper publications from the faculty)

V. Infrastructure and Learning Resources		
S. No	**Criterion**	**Observations**
1.	Adequacy of infrastructural facilities to improve the teaching learning process Class rooms: Laboratories: ICT class rooms / e- class rooms: Seminar halls: Syndicate rooms Faculty rooms:	Class Rooms:07(EE111.EE114,EE201,EE203,EE209,EE215,EE216) Laboratories:10+1(Project room) LCD projectors:12 ICT class room facility-smart boards-3 (EE112,EE210A,EE210B) e- class rooms: 04(EE112,EE113,EE210A,EE210B) Seminar halls: 03(EE202,210A,210B) *seminar halls are also used for ICT class rooms Syndicate rooms:Nil FR:21
2.	Internet facilities for faculty & Students:	NETTLINX:160Mbps,Reliance Jio:300Mbps,BSNL:30Mpbs Total Internet bandwidth:490Mpbs
3.	Technical manpower support	15
4.	Modern / new equipment added in laboratories	1. Customized microcontroller boards with peripherals 2. Various PLC's 3. Vacuum & Pressure testing kit with corona cage Liquid insulation breakdown test kit 4. 24switch inverter module 5.3phase inverter module 6.Digital storage oscilloscopes 7.Programmable DC source
5.	Details of computing facilities and improvement	UG computer center-1:No. of PC's:48 PG computing center-1:No. of PC's:18,No. of servres:1
6.	Deptnews letter / magazine	Annual
7.	Department level library resources with details	847 books

VI. Student information, Support and Progression		
S. No	**Criterion**	**Observations**
1.	Bridge courses: Add-on courses:	Conducting Bridge course for lateral entry students in Mathematics Course

2.	Student publications: Student prizes: Scholarships: Dept. student clubs:	One third year and two final year students published paper. 2nd year,3rd year and 4th year students received different prizes in **co-circular & Extracurricular activities.** Scholar ships:13 students received Siddhartha sahaya scholarships Students clubs: nil
3.	Details of coaching provided for GATE/GRE/any other competitive exams	NIL
4.	Industrial visits and internships	Total tours:07 3 / 4 B.Tech visited Dr.N.T.T.P.S, Ibrahimpatnam on 7.08.2019 &8.08.2019 2/ 4 B.Tech visited Electric Locoshed on 8/8/2019 to 9/9/2019 2/ 4 B.Tech visited G.S.Electricals on26/9/2019 & 27/9/2019 4/4 B.Tech visited 220Kv Substation& SCADA Center on30/9/2019 & 01/9/2019 4/4 B.Tech visited Soltek Photovoltek Private limited on 9-03-2020 & 10-03-2020 3/4 B.Tech visited Avera new & Renewable Energy Moto Crop Tech Pvt Ltd" Nunna on 10-3-2020 & 13-03-2020 2/4 B.Tech visited Kumar pumps & Motors on 17-03-2020 & 18-03-2020 218 students completed the internships in various companies

VII. Governance, Leadership and Management		
S. No	**Criterion**	**Observations**
1.	Teaching and non-teaching staff attended for skill development programs	Teaching staff:3 faulty members are trained PLC's in seimens centre of excellence 2 faculty members are trained in product development(Microcontrollers and DSP based) Non-Teaching staff: NIL
2.	MoUs with premier Institutions for knowledge exchange	IIT, Hyderabad
3.	Quality policy & Quality objectives Committees & duties: Cells & duties:	**Quality Policy:** VRSEC strive to impart Knowledge, Skills and Attitude through continuous improvement to meet the ever changing needs of Industry and for the Sustainable Development of society **Quality objectives:** 1.Conduction of conference in a year 2.Establishment of smart rooms

		3.Conduction of at least 8 guest lecturers in a year 4.Conduction of two workshops in a year 5.To improve results in each subject. Target value is 90%. **Committees:** 1.Program Assessment Committee 2.Department Advisory Committee 3.Board of Studies Committee 4.Module coordinator committee 5.Course coordinator committee
4.	Maintenance factor -physical observation -Biometric -Attendance monitoring system	Available
5.	Financial support/leaves for qualification/skill up- gradation:	1.An amount of Rs1,21,500/-Incentives has received faculty incentive for papers published in reputed journals. 2.Study leave for P.hD: a)T.Ajay Kumar b)G.Venkateswarlu 2.Study leave for post Doc. a)Dr.Zameer Ahmad
6.	Risk evaluation/safety measures:	First aid kit, Fire extinguisher, Electrical safety mats

Academic Audit Report

1. Name of Department:……Electrical & Electronics Engineering
2. No. of full time permanent faculty: 30…….
3. No. of part time Visiting/temporary contractual faculty: …1… / ……
4. No. of PG / UG courses:…UG-1,PG-1……
5. Curriculum Revisions Info: VR17 regulation……
6. Research: Publications International Jr:…20… National Jr: …0. National Conferences:…0. International Conference: 18….. Ph.D. Theses Submitted: …1. Awarded:…1… Number of Conferences/Lectures Organized:……1(International Conference)/13……., guiding / guided Ph.Ds:…..…10……
7. Sponsored projects& amount: Applied…2….., Ongoing……1…., and completed…0…….
8. No. of Department Library Printed Books Added: 83…..... Web-resources CDs added …0…. e-Books Added: …25…. …., Journals…2……
9. No. of Faculty using ICT and PPTs: ……30.…
10. New Equipment and Infrastructure added: …7……
11. Student feedback on Curriculum: Yes
12. Strengths :

(1)

(2)

(3)

13. Weaknesses :

(1)

(2)

(3)

14. General recommendations :

15. Suggestions for improvement:

Sig. of Departmental IQAC **In-charge Sig. of Academic Auditor**

Sig. of IQAC Coordinator