

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

1. Name of the Department : Civil Engineering
2. Programme & Branch (UG and PG) : B.E., Civil, M.E., Construction Engineering and Management & M.E., Structural Engineering
3. Date of Audit : 21.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. P. Vinayagam Professor Department of Civil Engineering Coimbatore Institute of Technology Coimbatore - 641014 Mobile: 97900 30050	Dr. K. Krishnamurthy Professor & CCO- Student affairs Department of Mechatronics Engineering Kongu Engineering College Perundurai, Erode – 638060 Mobil : 98427 22881

5. Course availability based on Specialized area (as per 2020R) : Yes
- B.E. Civil Engineering

Structural Engineering	: 12
Environmental Engineering	: 08
Construction Engineering and Management	: 14
Transportation Engineering	: 08
Geo-Technical Engineering	: 09
Water Resource and Irrigation Engineering	: 03
Branch – General	: 12
- M.E. Structural Engineering : 30
- M.E. Construction Engineering and Management

Construction Engineering	: 10
Construction Management	: 20

6. Availability of Faculty based on Specialized area
 - i) Faculty – student Ratio : 1 : 18
 - ii) Competency level : 13 Specialization
7. Availability of Non-teaching staff : 10

8. Emerging areas identified and its Global relevance

Emerging areas identified such as Building Information Modeling, Prefabrication, Sustainability, Maintenance and Rehabilitation of the Structures, Structural Health Monitoring and Geo-Environmental Engineering.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses such as

20CEL61 - Computer Aided Building Information Modelling Lab

20CME15 - Building Information Modelling

20CEE25 - Design of Prefabricated Structures

20SET23 - Design of Prestressed and Prefabricated Structures

20CEE06 - Remote Sensing & Geographical Information System

20CEE11 - Environmental Geo-technology

20CEE14 - Architecture & Town Planning

20CEE18 - Finite Element Methods

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- Inclusion of Employability Enhancement Courses (EC) like Project work, Professional Skills/Industrial Training, Comprehensive Test & Viva, Entrepreneurships/Start ups and Internship in Industry or elsewhere. Value Added Courses / Online Courses / Self Study Courses
- Online videos, PPT's and e-content were developed for various subjects
- Research Laboratory established
- Multi disciplinary research work initiated

11. Details of student support mechanism

a. Soft skill Development

2020-2021 : 13

2019-2020 : 05

2018-2019 : 05

b. Coding Skill Development

2020-2021 : 07

2019-2020 : 05

2018-2019 : 06

c. Learning beyond the curriculum

- Seminars / Webinars related to all specialization have been conducted for the students
- Experiments were taught beyond the syllabus in laboratories
- Students were involved in consultancy activities
- 95 events conducted by Professional Society

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

Co-curricular Events	: 37
Extra-curricular Activities	: 77
Sports Details	: 45

e. Placement

2020 - 2021	: 48.10 %
2019 - 2020	: 54.70 %
2018 - 2019	: 75 %

f. Higher studies

Total number programmes conducted : 5

g. Coaching for competitive examinations

Total number programmes conducted : 5

h. Innovation and Entrepreneurship and usage of TBI

19 programmes were conducted in the last 3 years in association with EMDC & TBI

i. Internship

2020 - 2021	: 22
2019 - 2020	: 32
2018 - 2019	: 38

12. Efforts made by the Department for tracking the holistic progression of the student

Mandatory courses on Universal Human Values, Communications skills, paper presentations, poster presentations, Quiz, Yoga & meditation, sports and Alumni interaction were organized.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

2020 - 2021	: 45
2019 - 2020	: 71
2018 - 2019	: 26

b. Student projects converted into publications

2020-2021	: 38
2019-2020	: 54
2018-2019	: 20

c. Patents

Applied (Through KEC)	: 3
Published	: 3
Granted	: 3

d. Funded R & D projects : 6

e. Utilization of R & D facility

Structural Engineering Laboratory, Concrete Laboratory, NDT & Durability Testing Laboratory, Environmental Engineering Laboratory, Strength of Materials Laboratory, Survey Laboratory and Soil Mechanics Laboratories were utilized for R & D facilities.

f. Centre of Excellence : NA

g. FDPs organized

2020 - 2021 : 3

2019 - 2020 : 2

2018 - 2019 : 2

h. Faculty participated in FDPs/STTPs

2020 - 2021 : 121

2019 - 2020 : 38

2018 - 2019 : 33

i. Workshops/conferences organized

2020-2021 : Nil

2019-2020 : 4

2018-2019 : 3

j. Any other significant activity

2020-2021 : 26

2019-2020 : 01

2018-2019 : 03

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established : Yes (Rs. 6,69,000.00 in the year 2018)

b. Consultancy works done for industry/Organization : Yes (Rs. 19, 99,110.00 with 174 consultancy)

c. Industry executive training programmes organized : Nil

d. Any other significant activity, Please mention

➤ Revenue Generated through testing of materials for an amount of Rs. 3,71,860.00 with 542 testing

➤ Signed 14 MoU with various Industries

15. List of Equipment / Instrument not in working condition

Five equipments found not in working condition

16. Name of the Equipment / Instrument / software not available as per curriculum : Nil

17. Licensed Software Details:

No. of licensed software : 8

18. Infrastructure facility in the Department : **Verified**

19. Augmentation of infrastructure facilities during the last 5 years

Established Structural Engineering Laboratory, NDT Laboratory, Casting yard and Project Laboratory

20. Development plan / infrastructure facilities for next 5 years

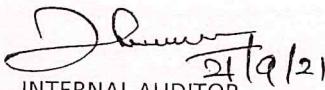
- Modernization of Concrete Laboratory with micro structural analysis facility (SEM).
- To establish a Centre of excellence in the area of BIM.
- MoU with Universities abroad for faculty and student exchange programmes.
- To establish an academy for competitive examination coaching to enable the students to grab Government jobs just after graduation.

21. Non conformities listed in the last IQAC audit and its action-taken report : Nil

22. SWOT analysis of the Department : **Verified**

23. Observation by the Audit Team

- Core Civil Engineering subjects need to be given preferences compared with computer oriented software courses.
- In depth knowledge of faculty members need to be improved in their domain.
- In depth core knowledge of students need to be improved.
- More budget amount to be allotted for purchase of equipments.
- As like software / coding training emphasis should be given for core training too (Both Theoretical and software).


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24. Outcome of meeting with faculty

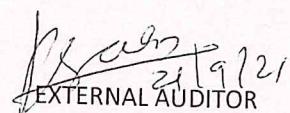
- Student attendance multiple entry may be avoided (1 Hard copy and EMS entry is sufficient)
- In appraisal form more weightage may be considered for teaching learning process.
- No Increment, DA raise and Promotion

25. Outcome of the meeting with Students

- Instead of forcing all the students to study software courses, only opted students may opt the courses.
- Non-formal courses on core software may be given for all the interested students instead of limiting to one batch.
- As like software / coding training emphasis should be given for core training too (Both Theoretical and software).
- In depth knowledge of faculty in theory course and practical course need to be improved.
- More core subjects should be included in the syllabus.

26. Outcome of meeting with Non Teaching faculty

- Free Education for wards.
- Free transport facility
- Stringent norms for availing casual leave may be relaxed
- No Increment, DA raise and Promotion
- Demanded budget amount has not been sanctioned for the purchase of new lab equipment.



21/09/21
EXTERNAL AUDITOR

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638060

ACADEMIC AUDIT 2020-21

(Observations by Audit Team)

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|------------------------------------|---|
| 1. Name of the Department: | Mechanical Engineering |
| 2. Programme & Branch (UG and PG): | B.E. Mech. Engg. & M.E. Engineering Design |
| 3. Date of Audit: | 11.09.2021 |
| 4. Name of the Auditors: | Dr. V. Prabhu Raja (External Auditor)
Dr. P. Somasundaram (Internal Auditor) |

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. V. Prabhu Raja, Professor, Department of Mechanical Engineering, PSG College of Technology, Coimbatore.	Dr. P. Somasundaram, Professor, Department of Automobile Engineering, Kongu Engineering College, Perundurai.

5. Course availability based on Specialized area (as per 2020R)
Courses are evenly distributed in four different streams namely Design, Thermal, Manufacturing and Industrial Engineering.
6. Availability of Faculty based on Specialized area
 - i) Faculty – student Ratio is adequate
 - ii) Competency level – With ten different specializations, adequate number of Faculty available.
7. Availability of Non-teaching staff
Sufficient number of Non-teaching staff available in all the laboratories. Knowledge upgradation through training to technical staff may be given.
8. Emerging areas identified and its Global relevance
Around twelve different areas identified towards adding those titles in the forthcoming curriculum.
9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses
The above-mentioned areas are well included as different courses in the present curriculum.
10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department
 - Exploring kind of exercises may be introduced at least one per laboratory course.
 - Fabricated or tailor made experimental setup can be added in the laboratory.
 - The course title of “Principles of Farm Machines” may be revised and analytical content may be added. Prerequisite to be removed.
 - Content level in “Climate change and new energy technology” may be enhanced.
 - The Unit title of “Fundamentals of Research” course may be revised.
 - PO5 usage for theory courses may be appropriately considered (Eg: FEA).
 - In project work courses, the communication parameter may be added in the existing rubrics.
 - English faculty members may be involved in paper writing and report preparations.
 - Faculty can be trained / mentored by senior faculty to handle real life problems relevant the course.

11. Details of student support mechanism

- a) Soft skill Development
Number of Soft skill training programs arranged is Satisfactory
- b) Coding Skill Development
Number of Soft skill training programs arranged is Satisfactory
- c) Learning beyond the curriculum
Through one credit, NPTEL, non-formal and GATE coaching courses, learning beyond the curriculum has been ensured.
- d) Learning beyond the class (Participation in co-curricular and extra-curricular activities)
Participation during the years 2018-19 and 2019-20 is satisfactory.
- e) Placement
More core companies may be identified for campus placements.
- f) Higher studies
More training may be arranged regarding better higher study opportunities
- g) Coaching for competitive examinations
More in-house coaching may be arranged to crack various competitive examinations.
- h) Innovation and Entrepreneurship and usage of TBI
It is found that there are very less number of new startups. So, more initiatives may be taken.
- i) Internship
Satisfactory. Internship to the students may be arranged through department / college (To ensure equal opportunities to all the students).

12. Efforts made by the Department for tracking the holistic progression of the student
Significant efforts have been made. Still more alumni contribution may be needed.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Initiative towards providing incentive for faculty having sanctioned R&D Project is appreciable. However, the incentive can be enhanced based on the sanctioned amount and complexity of the project. Full time research scholars with monthly stipend may be recruited to enhance research activities and produce quality publications.

- b. Student projects converted into publications
Final year student projects can be undertaken on a continual basis under a single guide for getting better publication / patent / product. Project batches may be grouped by having creamy layer students towards improving the quality of the project.
- c. Patents
Faculty members may focus the conversion of innovative product into patent.
- d. Funded R & D projects
Retired professionals from industry / institutions / organization may be recruited to mentor, and handhold faculty to formulate and execute research problems which have good innovative quotient

e. Utilization of R & D facility

Satisfactory

f. Centre of Excellence

Initiated, Yet to be developed.

g. FDPs organized

More number of funded FDPs may be organized

h. Faculty participated in FDPs/STTPs

Good number participations made.

i. Workshops/conferences organized

Topics may be identified in emerging areas and adequate number of workshops / conferences may be organized

j. Any other significant activity

Nil

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

Not yet started.

b. Consultancy works done for industry/Organization

Progress is satisfactory

c. Industry executive training programmes organized

Good number of programmes arranged.

d. Any other significant activity, Please mention

Efforts made towards signing of MoU with various organizations are appreciable.

15. List of Equipment / Instrument not in working condition

Less number of equipment are not working, which can be rectified through servicing.

16. Name of the Equipment / Instrument / software not available as per curriculum

Nil

17. Licensed Software Details:

The required licensed software are available as per curriculum.

18. Infrastructure facility in the Department

Adequate facilities are available. Washroom facilities need to be improved with higher order cleanliness.

19. Augmentation of infrastructure facilities during the last 5 years

Satisfactory

20. Development plan / infrastructure facilities for next 5 years

Satisfactory

21. Non conformities listed in the last IQAC audit and its action-taken report

Nil

22. SWOT analysis of the Department

Analysis has been done and Job opportunities, students' attitude on core jobs are the issues.

23. Observation by the Audit Team

- Initiative towards providing incentive for faculty having sanctioned R&D Project is appreciable. However, the incentive can be enhanced based on the sanctioned amount and complexity of the project.
- Full time research scholars with monthly stipend may be recruited to enhance research activities and produce quality publications.
- Student project can be undertaken in a continual basis under a single guide for getting better publication / patent / product.
- Project batches may be grouped by having creamy layer students towards improving the quality of the project.
- Retired professionals from industry / institutions / organization may be recruited to mentor, and handhold faculty to formulate and execute research problems which have good innovative quotient.
- Mentor system may be extended to junior faculty members, where senior faculty can share their expertise.
- The number of exercises may be reduced especially in software-oriented laboratories, so that real time problems can be given as case studies.
- Care should be taken while choosing action verbs for formulating laboratory course outcomes (COs).
- PO5 & PSO2, PO10 & PSO1 are similar. Hence, Programme Specific Outcomes (PSOs) are to be re-defined towards specialized domain.
- Assignment problems that enhance higher order thinking by way of solving real life may be conducted through open book mode.
- Related Industrial Standard (BIS) can be explained during conduct of the Laboratory course.
- Exploring kind of exercises may be introduced at least one per laboratory course.
- Fabricated or Taylor made experimental setup can be added in the laboratory.
- The course title of "Principles of Farm Machines" may be revised and analytical content may be added. Prerequisite to be removed.
- Content level in "Climate change and new energy technology" may be enhanced.
- The Unit title of "Fundamentals of Research" course may be revised.
- PO5 usage for theory courses may be appropriately considered (Eg: FEA).
- In project work courses, the communication parameter may be added in the existing rubrics.
- English faculty members may be involved in paper writing and report preparations.
- Faculty can be trained / mentored by senior faculty to handle real life problems relevant the course.

24. Outcome of meeting with faculty

- The faculty members feel that they are doing more paper work. The use of IT enabled data handling of various activities may be enhanced to overcome the above problem.
- The quality of project work done by student needs improvement. Analytical, simulation and experimental contents need to be equally included.
- The research facilities may be improved and at the same time use of simulation software / mathematical modeling tools may be enhanced to bring out quality research.

25. Outcome of the meeting with Students

- Lateral entry students need additional coaching particularly in computer coding / programming.
- GATE syllabus may be included in the regular courses.
- Internship to the students may be arranged through department / college (To ensure equal opportunities to all the students).
- Washroom facilities need to be improved with higher order cleanliness.

26. Outcome of meeting with Non-Teaching faculty

- The non-teaching staff possess due respect towards the management; however, they are concerned with their increments, promotion and other benefits.

P. Sreedhar

INTERNAL AUDITOR

(Dr. P. SOMASUNDARAM)

✓ 19/2
(V. Rabbin Raj)

EXTERNAL AUDITOR

Rabin
HOD-Mech.

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Mechatronics Engineering
2. Programme & Branch (UG and PG): B.E. Mechatronics Engg. & M.E. Mechatronics Engg
3. Date of Audit: 11.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.G.Sakthivel Professor School of Mechanical Engineering Vellore Institute of Technology Vandalur – Kelambakkam Road Chennai - 600 127 Mobile: 9965422000	Dr.N.Kasthuri Professor Department of Electronics and Communication Engineering Kongu Engineering College Mobile: 9677734007

5. Course availability based on Specialized area (as per 2020R)

The course availability in the specialized areas are verified. The elective courses grouping in few semester didn't cover all areas, so it is advised to reframe the grouping of electives.

6. Availability of Faculty based on Specialized area

- i) Faculty – student Ratio

The number of faculty required is satisfied and the ratio is maintained as 1:15

- ii) Competency level

The competency of the faculty is verified and the details are given in the department report.

7. Availability of Non-teaching staff

The competency of non teaching faculty is verified and the number of non teaching faculty is sufficient.

8. Emerging areas identified and its Global relevance

Five different areas are identified and few areas already they have started to work and few they have vision to implement their ideas. List is attached in the report.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

The courses related to emerging thrust areas are given in the current curriculum and it also support interdisciplinary courses and employability courses. The curriculum is verified.

10. Any significant innovations in curriculum, teaching, learning and evaluation,research and extension,Academic and Administrative governance introduced by the department

They have sufficient hardwares and tools to perform implementation related to mechatronics engineering . Also new hardwares were purchased to give wider scope to students to still improve the industry related experiments. Many projects were done in industry that makes them to get sufficient consultancy activities. Suggested to include the research load in the time table itself to improve the outcome. Internship and training at industry is good. The research publication is improved. Funding is also good. Also there is a scope for getting higher funding.

11. Details of student support mechanism

a. Soft skill Development

Programmes are organized by the department and it is verified.

b. Coding Skill Development

Placement team conducted the training for the students with the alumni as well as with the senior students to give more focus for coding knowledge improvement.

c. Learning beyond the curriculum

Encourages additional learning platforms for the students to acquire advanced technical knowledge through many ways an it is listed in the document and verified.

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

Motivation is given to participate in various events and encourages and helps them to achieve the outcome.

e. Placement

The placement track record is good. Number of core company placement is also improved.

f. Higher studies

Students gone for higher studies is improved. But the students admitted through GATE score is still to be improved. More focus may be given for GATE coaching.

g. Coaching for competitive examinations

The number of students attended the training needs to be improved. It is yet to be started for current batch of students.

h. Innovation and Entrepreneurship and usage of TBI

The participation related to innovation and Entrepreneurship is good and improved.

i. Internship

The number of students gone for internship is improved and number of offers converted into placement from internship is appreciable.

12. Efforts made by the Department for tracking the holistic progression of the student

Various avenues were shown to progress in their field to attain the outcome expected.

The roadmap given by the faculty in terms of certification courses, participation in societies, workshops, Bootcamp for the students is good. The support is made for the to progress further. Students expressed their satisfaction.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Publication is improved. Lot of scope to get further improvement in publication through R&D projects.

b. Student projects converted into publications

Only 28 projects are converted into papers. Others are in pipeline.

c. Patents

3 patents are published. But for the available infrastructure and funding granted there is a scope for getting additional patents.

d. Funded R & D projects

11 projects are funded with a total amount of Rs.101.21 Lakhs and have planning to apply for additional funding also.

e. Utilization of R & D facility

The facility in R & D were utilized for research publication and to get collaborative research with the industry and to get patent. This helps them to do more number of consultancy activities.

f. Centre of Excellence

Expertise are available in the area Robotics and Automation and established the CoE also.

g. FDPs organized

Four FDPs are organized in the current academic year and list is verified.

h. Faculty participated in FDPs/STTPs

All faculty have participated in few events, but it is better to get trained in reputed institutions like NIT, IIT and premier institutions. Only few have training at premier institutions.

i. Workshops/conferences organized

One international conference is organized. More papers in collaboration with foreign professors may be tried.

j. Any other significant activity

Collaborative research with foreign universities is initiated but needs to be get into action and activity may be planned.

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

Five sponsored labs are established and the lab utilization is also good.

b. Consultancy works done for industry/Organization

Industrial consultancy improved compared to the previous years.

c. Industry executive training programmes organized

Five programmes are organized and revenue is generated.

d. Any other significant activity, Please mention

Out of 8 MoUs in this academic years three MoUs are initiated , and MoU related activity is also started.

15. List of Equipment / Instrument not in working condition

Equipment not in working condition is verified.

16. Name of the Equipment / Instrument / software not available as per curriculum

Planning to purchase the equipment as per the curriculum.

17. Licensed Software Details:

Licensed Software are verified and the list is attached in the document. The 6 users Licensed software for Automation studio is available to handle 33 students at a time. This may be increased to handle the team of students effectively.

18. Infrastructure facility in the Department

Infrastructure facility is good but number of toilet facility for faculty and girl students is limited.

19. Augmentation of infrastructure facilities during the last 5 years
Efforts were taken to increase the infrastructure facilities. Overall it is good.
20. Development plan / infrastructure facilities for next 5 years
The department have a plan to improve the infrastructure facilities to facilitate the collaborative task in terms of industrial consultancy and projects.
21. Non conformities listed in the last IQAC audit and its action-taken report
No NCs but few observations and the action taken report is attached and trying to implement.
22. SWOT analysis of the Department
SWOT analysis are made and highlighted their plan and the list is attached. Each faculty shows positive attitude to explain about their areas of expertise and all have collaborative nature of working culture. Also addressing the weakness and ready to put effort to do some action on their weakness. Avenues to utilize their opportunities is also identified and challenges is also thought off.
23. Observation by the Audit Team
- Excellent Infrastructure & healthy work culture
 - Curriculum is restructured regularly
 - Sponsored projects have attracted sizeable funds
 - Students centric teaching-learning pedagogy is good
 - State-of –the art infrastructure of laboratory facilities
 - Productive research culture
 - Qualified, committed and experienced faculty
 - Meritorious students with high motivation
 - Dedicated Centralized sophisticated instrumentation center is needed to cater interdisciplinary research among the students and faculty
 - Have to enhance higher order thinking capabilities of students by incorporating challenging based experiments in all the laboratories
 - Frequent alumni interaction meeting has to be happened
 - Development of online courses and programmes have to be taken care
 - More functional MoU'S with global universities

N.K.
WST 2021

INTERNAL AUDITOR

EXTERNAL AUDITOR

G. Sakthivel
10/12/21

Dr.N.KasthuriDr.G.Sakthivel

Professor,
Department of ECE,
Kongu Engineering College,
Perundurai, Erode-638 060.

Professor,
School of Mechanical Engineering
Vellore Institute of Technology
Vandalur – Kelambakkam Road, Chennai

24. Outcome of meeting with faculty

- Frequent promotions have to be considered for faculty for better work performance and create a sense of individual achievement and recognition
- During faculty interaction, workload will be shared to department faculty due to certain no. of faculty involved in centralized portfolio.
- Industry-sponsored Research projects have to be improved
- Commercialization of Intellectual Property Right have to focused
- Paperless work has to be strengthened.
- More no. of time is accommodated by the faculty in preparing the centralized data in different templates and various formats. If it's a software-based system, it is advisable and easy to consolidate the data

25. Outcome of the meeting with Students

- Students exchange and semester abroad programmes have to be initiated

26. Outcome of meeting with Non Teaching faculty

- Lab faculty promotions have to be considered, since the promotions are not given for last 10 years.
- Ward education monitoring benefits for lab faculty have to be considered.

Gautam
11/12/21.

EXTERNAL AUDITOR

Dr.G.Sakthivel

Professor,
School of Mechanical Engineering,
Vellore Institute of Technology,
Vandalur – Kelambakkam Road,
Chennai - 600 127

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638060

ACADEMIC AUDIT 2020-21

(Observations by Audit Team)

1. Name of the Department : Automobile Engineering
2. Programme & Branch (UG and PG) : B.E. Automobile. Engg.
3. Date of Audit : 11.09.2021
4. Name of the Auditors : Dr. P. Karthikeyan (External Auditor)
Dr. R. Parameshwaran (Internal Auditor)

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. P. Karthikeyan, Professor, Department of Automobile Engineering PSG College of Technology Coimbatore – 641004.	Dr. R. Parameshwaran, Professor & CCO – Placement & Training, Department of Mechatronics Engineering, Kongu Engineering College, Erode – 638060.

5. Course availability based on Specialized area (as per 2020R)
Good. Courses are evenly distributed in four different streams namely Design, Manufacturing, Electric Vehicle and Autonomous Vehicle. More inputs are given to the faculty members of the department regarding orientation of the courses in the respective semesters.
6. Availability of Faculty based on Specialized area
 - i) Faculty – student Ratio is adequate
 - ii) Competency level – With Six different specializations, adequate number of Faculty available.
7. Availability of Non-teaching staff
Sufficient number of non-teaching staff available in all the laboratories. Knowledge upgradation for technical staff through training may be provided.
8. Emerging areas identified and its Global relevance
Emerging areas are identified, but department needs to develop the laboratories in the emerging areas like Electric vehicle and Autonomous vehicle technology.
9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses
Yes, More Inputs are given to the curriculum aspects.
10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department
 - ❖ Course Articulation Matrix and Programme Articulation Matrix checked and found good
 - ❖ Paper publication is good but funding projects have to be increased
 - ❖ Few innovative courses introduced in the Automobile Engineering Curriculum apart from regular syllabus :
 1. Automotive Electrical systems and Drives (Theory cum Lab)
 2. Automotive sensors and controllers (Theory cum Lab)
 3. Electrical and hybrid Vehicle (**Theory cum Lab, But Lab need to be established**)
 4. Automotive Control Systems
 5. Automotive Embedded Systems (Theory cum Lab)

- g. FDPs organized
One program was organized. Its needs improvement
- h. Faculty participated in FDPs/STTPs
Good
- i. Workshops/conferences organized
Nil. Its needs improvement
- j. Any other significant activity
Nil

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established
Nil. Not yet started.
- b. Consultancy works done for industry/Organization
Its needs improvement.
- c. Industry executive training programmes organized
Its needs improvement.
- d. Any other significant activity, please mention
Three MOUs are live. Activities have to be improved.

15. List of Equipment / Instrument not in working condition

Four experiments are not working due to compressor line issues. It can be solved internally.

16. Name of the Equipment / Instrument / software not available as per curriculum

- ❖ MATLAB software with Automobile Tool box.
- ❖ Battery Management system
- ❖ BLDC motor test bench
- ❖ Induction Motor test bench
- ❖ Hybrid Engine Test bench
- ❖ Exhaust gas emission analyzer
- ❖ CVT system
- ❖ Power window system
- ❖ Central Locking System

17. Licensed Software Details:

The required licensed software is available as per 2018 curriculum. But MATLAB software with Automobile Tool box is required for Vehicle dynamics simulation lab for 2020 curriculum.

18. Infrastructure facility in the Department

Adequate facilities are available. Labs can be retained in the proposed areas and shifting often can be avoided.

19. Augmentation of infrastructure facilities during the last 5 years
Satisfactory

20. Development plan / infrastructure facilities for next 5 years

Satisfactory. More inputs are given to the department faculty members.

21. Non conformities listed in the last IQAC audit and its action-taken report
9 NCs are registered. Action-taken report is satisfactory.

22. SWOT analysis of the Department

- Online teaching feedback – Hands on practices missing for practical classes; Video content has to be edited and uploaded in common portals like YouTube.
- Core company aspirants – Newly purchased equipment to be demonstrated.
- One credit / Non formal courses – Few courses were conducted;
- Value Added Courses - Relevant and job-oriented courses have to be floated – CAD Modeling, MAT Lab programming, System Modelling, Data Analytics.
- Project Lab has to be established in the department and it can be kept open 24X7.
- Internship – Tapping opportunities in tier I companies have to be improved.
- Training – Refresher classes for aptitude, logical, analytical and verbal reasoning have to be conducted for core company aspirants.
- Placement – Tier I companies are not visiting for exclusively automobile students.
- Higher Studies – Department has to identify universities with funding opportunities and also connect with alumni pursuing higher studies abroad. Gate coaching can be started.
- Entrepreneurship and startup opportunities - Exposure can be given with the help of successful alumni.

26. Outcome of meeting with non-Teaching faculty

- Training needed for E-two and three wheelers, additive manufacturing, alternate fuels, Hybrid engine test rig hybrid transmission system, OBD, automotive safety in leading industries.
- Salary revision and promotion are required.


INTERNAL AUDITOR


EXTERNAL AUDITOR

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Electronics and Communication Engineering

2. Programme & Branch (UG and PG): B.E (ECE)

M.E.(VLSI Design)

M.E.(Embedded Systems)

3. Date of Audit: 11.09.2021

4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. P. Palanisamy Professor Department of Electronics and Communication Engineering, NIT, Tiruchirappalli - 620015 Tamilnadu	Dr. S. Varadhanapathy Professor Department of Information Technology Kongu Engineering College Perundurai, Erode - 638060

5. Course availability based on Specialized area (as per 2020R)

5 specialized areas have been identified by the department and all the courses in the curriculum of R2020 are brought under those areas. The specialized areas are:

- Communication
- Electronics and embedded systems
- Networking
- Signal and Image Processing
- VLSI Design

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

Faculty student ratio is adequate for both UG and PG. FSR is 14.83 for UG and 1:12 for PG.

ii) Competency level

All 52 faculty members are identified as based on their competency level and is adequate for the department to carry out the curriculum.

7. Availability of Non-teaching staff

Though the qualification of most of the non teaching staff are not related to Electronics and Communication Engineering, all have got good knowledge and experience in helping the students to execute the experiments.

8. Emerging areas identified and its Global relevance

The following emerging areas are identified and covered in the curriculum:

- Artificial Intelligence
- Internet of Things
- Quantum Computing
- Robotics
- Block Chain

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

The following courses are some of the courses under emerging areas:

➤ Artificial Intelligence

- Neural Networks and Deep Learning with Python
- Python Programming
- Principles of machine learning

- Deep Learning and its Applications
- Computer vision
- Natural Language processing
- Bioinspired Computing Technologies

➤ Quantum Computing

- Principles of Quantum computing

➤ Internet of Things and Robotics

- Microcontroller based automation
- Embedded IoT
- Wearable technology
- Cyber Physical Systems
- Block chain technology

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Domain based elective courses, Foreign Language courses, Comprehensive Test/Viva, Professional Skills Training, Project in 3 phases etc. are introduced in the curriculum.

11. Details of student support mechanism

a. Soft skill Development

67 Programmes were conducted.

- b. Coding Skill Development
25 Programmes were conducted
- c. Learning beyond the curriculum

34 non-formal courses, 12 one-credit courses were conducted beyond the curriculum.
7 NPTEL courses were completed by the students. 2 Foreign Language Training programmes were completed.
- d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)
732 students have participated in cocurricular and extracurricular activities inside Kongu Engineering College and 442 students have participated outside KEC.
- e. Placement
Placement and Training Cell of the college organizes various training programmes for 517 students have got placed in various companies during last 3 years.
- f. Higher studies
19 students have gone for higher studies.
- g. Coaching for competitive examinations

Coaching classes were organized for various competitive exams like GATE, CAT etc.
132 students have got benefitted out of these programmes.
- h. Innovation and Entrepreneurship and usage of TBI
A good number of students have participated in the various Innovation and Entrepreneurship competitions like Toyathon, codathon etc. conducted inside and outside Kongu Engineering College.
- i. Internship
237 students have gone for internship in various industries.

12. Efforts made by the Department for tracking the holistic progression of the student

Curriculum, Association activities, Internship provision, Social activities etc. support the department to track the holistic progression of the students. Also, counseling and mentoring also helps to track their progress.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

133 papers have been published in Scopus/SCI journals in the last 3 years. 42 papers have been published in Scopus indexed conferences, 52 in other conferences and 56 in non-indexed journals

b. Student projects converted into publications

38 projects are converted in to papers, published in conferences and 23 projects are published as papers in journals.

c. Patents

One patent has been granted (2014) and another one has been published (2017).

d. Funded R & D projects

Totally, 6 projects worth of Rs. 74.22 L have been received by the department starting from 2017 onwards.

e. Utilization of R & D facility

Each domain has some research facility available in the respective laboratory. A lot of opportunities are there. But, utilization of those facilities is not up to the mark.

f. Centre of Excellence

There is no Centre of Excellence in the department, as of now.

g. FDPs organized

12 sponsored seminars and 18 self supported programmes were conducted.

h. Faculty participated in FDPs/STTPs

Almost all faculty have participated in one or two FDPs.

i. Workshops/conferences organized

5 Conferences have been organized.

j. Any other significant activity :

Department is acting as Indian Institute of remote sensing nodal centre.

Organised an international conference with IIT, Kharagpur.

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

01 - Freescale Lab

b. Consultancy works done for industry/Organization

10 consultancy works have been completed.

c. Industry executive training programmes organized

NIL

d. Any other significant activity, Please mention:

3 Training programmes and 1 one-credit course were conducted in association with industries.

No. of MoUs signed - 10 (last 3 years)

15. List of Equipment / Instrument not in working condition

- As per the lab visit, all equipments are in working condition. As per the interaction with the incharges of the lab, if anything is in not working condition, they have moved it for condemning. *after following the standard procedures of the college.*
- In Network lab, the license of the EXata 2.0 software has expired. It was purchased for ME (communication systems).

16. Name of the Equipment / Instrument / software not available as per curriculum

NIL

17. Licensed Software Details:

Licenses are available for proprietary software. They were verified.

18. Infrastructure facility in the Department

- Classrooms are adequate. 2 labs are more than needed. Computer systems are also in excess in some of the labs, as one PG programme is closed.
- Smart classroom facility is available in this department. Recording of video lectures can be done here.

19. Augmentation of infrastructure facilities during the last 5 years

A lot of infrastructure facility augmentation has been done in almost all the labs. (Pl. See the department's report)

20. Development plan / infrastructure facilities for next 5 years

Strategic Plan for 2021-2025 is provided by the department (Pl. refer Department's report)

21. Non conformities listed in the last IQAC audit and its action-taken report

Process	Findings	Action
Teaching Learning Process	Quality of project reports to be improved	Faculty are informed to verify and correct the project report with due importance
Research , innovation and extension	Conversion of project into paper need to be improved	Target fixed on faculty
Research innovation and extension	Research collaboration need to be improved	Target fixed on faculty
Institutional values and best practices	Best practices of department may be identified	Discussed with the faculty and it will be implemented

22. SWOT analysis of the Department

Provided. (Pl. refer department's report)

23. Observation by the Audit Team

- Maintenance of all the laboratories is good.
- Most of the laboratories are underutilized as they are specific to the particular core area/ PG programme.
- We found that the number of computer systems is in excess as one PG programme has been closed. Though they are saying that those systems are used for project/research, we are not sure about it. In some labs 40 or 35 or 39 systems are available, but the number of students per batch is 30 only. This is the major observation.
- In programming Lab, they want to replace the 16 systems which are obsolete. For Electronics lab and Communication Lab, they need PCs to run some simulation experiments. To do this, they are sending the students to DSP lab. Alternate solution may found within the department itself, as they are having excess computers.
- Research activity may be improved as they are having a quite number of costlier equipments/software which are under-utilized.
- In the FIST project, they are having around 10 scopus/SCI indexed publications as outcome.

S. Varadhanapathy
14/9/21

INTERNAL AUDITOR

Shivakumar
EXTERNAL AUDITOR

(Dr. S. Varadhanapathy
Professor, IT Department,
KEC)

(Dr. P. Palanisamy
Professor
Dept. of ECE,
NIT Trichy)

24. Outcome of meeting with faculty

All faculty are satisfied with the curriculum, Laboratory facilities, Equipments, software etc.

Suggestions/Future plans given by faculty

- Centre of Excellence in specific areas
- Industry collaboration has to be improved
- Proposals to funding agencies
- Industry projects for students
- Aim for core company placement

Grievances

- One faculty mentioned that they are getting only AP salary even after promoting as Professor

25. Outcome of the meeting with Students

- Students are satisfied with the curriculum, syllabi, teaching learning process, Laboratory facilities, coaching for competitive exams, higher studies and Alumni interaction.
- Students said that WiFi facility was not good last year when they were in the campus but **now it is good**.
- No specific complaint/input was given by the students.

26. Outcome of meeting with Non Teaching faculty

- The procedures for getting quotation for repair is cumbersome.
- Small accessories for PCs like SMPS, mouse may be readily available.
- Training for non teaching staff is not adequate.
- For training, they may be sent to higher order institutes. Training may be supported with financial benefits
- No promotion has been given after 2010.
- No increment has been given for the past 3 years.
- College bus facility may be made free for non-teaching staff as before.
- Admission for wards may be given with fee concession.
- Higher salary has been fixed for Junior(s) than the Senior(s)



EXTERNAL AUDITOR

(Dr. P. Palanisamy
Professor
Dept. of ECE,
NIT Trichy)

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE - 638012

ACADEMIC AUDIT - 2020-21

(Observations by Audit Team)

1. Name of the Department: Electrical & Electronics Engineering
2. Programme & Branch (UG and PG): UG-EEE, PG-Power Electronics & Drives
3. Date of Audit: 17.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.M.Sundaram Associate Professor Department of Electrical and Electronics Engineering PSG College of Technology Coimbatore - 641004 Mobile: 9952406077	Dr.U.S.Ragupathy Professor & CCO-Accreditation Department of Electronics and Instrumentation Engineering Kongu Engineering College, Perundurai-638060 Mobile:9842851315

5. Course availability based on Specialized area (as per 2020R)

- Power Electronics
- Power system
- Energy storage
- Electrical Machines
- Electronics stream

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

UG/PG	No. of faculty required as per AICTE norms	Available	FSR
UG-415	415/20 = 21	24	1:17.3
PG-12	12/15= 1	2	1:6

ii) Competency level- 30 Faculty

- Power System-7
Power Electronics- 11
Applied Electronics-7
High Voltage Engineering -2
VLSI -1
Energy Engineering - 1.
Sensor System Technology - 1

7. Availability of Non-teaching staff - 13 (include Data Entry operator and office assistant)

8. Emerging areas identified and its Global relevance

Renewable Energy - The Indian government has set a target that 30% of all vehicles sold in India by 2030 will be electric.

Electric Vehicle - The government has the plans to make all two-wheelers to be electric by 2026. India currently has 136 gigawatts (GW) of renewable energy.

Smart Grid - India has set the goal of 450 GW of Renewable Energy by 2030.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

- Electrical Distribution System Analysis
- Substation Engineering and Automation
- Restructured Power System
- Biomass Energy System
- Renewable Energy System
- Protection and RES Laboratory
- Design, Installation and Commissioning of Solar & wind Energy Systems
- Energy Storage Systems
- Microgrid
- Hybrid Electric Vehicles
- Smart Grid
- PLC and SCADA System

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Curriculum:

- With reference to the needs of the industry, the following courses are included in the curriculum: Electric vehicles, smart grid and micro grid etc.,
- Individual practical experiments are included in the theory subjects
- Industrial training/ professional skills training is included in two semesters
- Comprehensive test and viva, meeting the requirements of GATE syllabus and industrial requirement is included

Teaching, learning and evaluation:

- Course wise materials are prepared and given in the institute website
- Videos depicting the experiments are given in the YouTube
- Online evaluations are made with aid of Kami software

Research and extension:

- 11 research projects worth Rs.187.27 lakhs are sanctioned for research projects (Highest amount in KEC)
- 7 projects are ongoing and one among which is an International collaborative project
- DST FIST with grant amount of Rs.1 crore is leaded by EEE department
- Two DST TARE grants in collaboration with IIT Madras and NIT Trichy

- o Schneider supported Centre of Excellence in the smart Electrical & Building automation is established with ^{the} state of art facilities
- o Fluke Centre of Excellence in Energy Audit is established
- o International Collaborations with UTP Malaysia, UNDIP Indonesia, Thai Nichi Institute of Technology Thailand and BIUST Botswana
- o High quality research papers published in the journals including IEEE Transactions, Elsevier, Springer etc.,

Academic and administrative governance:

- o Continuous monitoring of academic activities through HoD, AC, YC and CC
- o Mentoring/counselling given to the students through mentors

11. Details of student support mechanism

a. **Soft skill Development**

2020-2021 - 11
2019-2020 - 8
2018-2019 - 22

b. **Coding Skill Development**

2020-2021 - 4

c. **Learning beyond the curriculum**

Academic year	Non Formal Course	One Credit Course	Total
2020-2021	4	7	11
2019-2020	--	3	3
2018-2019	4	4	8

d. **Learning beyond the class (Participation in co-curricular and extra-curricular activities)**

Year	2020-2021	2019-2020	2018-2019
Co-curricular	439	235	249
Extra-curricular	366	110	55
Total	855	345	304

e. **Placement**

Year	2020-2021	2019-2020	2018-2019
No. of students admitted	132	137	140
No. of students interested	108	116	112
No. of students Eligible	98	98	84

No. of students placed	65	74	78
Total No. of offers	80	87	95
Percentage	66.36 (Till 08.09.21)	75.51	82.1

f. Higher studies

2020-2021 - 10

2019-2020 - 1

2018-2019 - 3

g. Coaching for competitive examinations

S.No	Academic Year	Name of training	Number of Students
1.	2018-19	UPSC Training	5
2.		CAT ON-Campus Coaching	2
3.		GATE Training	23
4.	2019-20	CAT ON-Campus Coaching	1
5.		UPSC Training	2
6.	2020-21	GATE Training	8
7.		IELTS Training	2

h. Innovation and Entrepreneurship and usage of TBI

Year	2020-2021	2019-2020	2018-2019
No. of events organised and participated by the students	6	4	10

i. Internship

Year	2020-2021	2019-2020	2018-2019
No. of students attended	29	40	33

12. Efforts made by the Department for tracking the holistic progression of the student

- Mentoring system is followed in our department and regular counselling to motivate the students to assess their strengths and weaknesses and accordingly groom themselves towards their area of interest.
- Department is organizing various activity based learning by arranging Guest lectures, Alumni & Entrepreneur lectures, Higher education awareness Lectures, paper presentation events (Inter/Intra Level), Seminars and Workshops through department association and with aid of profession societies like IEEE PES and IET that make the students industry ready by building technical & life skills.
- Technology Based Learning is promoted to the students by identifying NPTEL/other online courses and associated faculty mentor at the department level. The mentor motivates the students for online learning and peer discussions. Also, few potential

students are identified and they are engaged for the energy audit carried out in the industries by our department Energy audit team makes the students to get an industrial exposure.

- Project Based Learning is inculcated for the students in the form of Mini Projects in core courses, which can be further taken to next level in their third year through Minor Projects which are mostly application based and finally their Major projects which are likely to be research based.
- Students are also encouraged to take up industry projects which aid them to adapt to new technologies and learn professional etiquettes.
- Motivating the students for grabbing internships in the industry to build Learning by Doing. The internships are provided at three levels through; a) personal contact b) Training & placement cell c) Alumni network
- Department Placement Team is organizing various Student Training Programmes for the Third Year and Final year students to create awareness of latest updates and hands on experience on the technology. Further, Pre Placement Training is also conducted to cater to all the category of the students to enhance their technical knowledge and Employability Skills.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Year	SCI	SCOPUS	OTHERS	TOTAL
2020-21	12	38	42	92
2019-20	7	21	16	44
2018-19	4	8	56	68
TOTAL				204

b. Student projects converted into publications

Year	Number of project converted to paper
2020-21	19
2019-20	37
2018-19	40

c. Patents

Year	Applied	Published	Granted
2020-21	-	7	1
2019-20	-	11	-
2018-19	-	1	-

d. Funded R & D projects

Sl. No.	Year	Name of the funding Agency	Amount sanctioned	Period
1	2019-20	SERB- ASEAN-India Collaborative Research Project	9.03	2019-2021 (2 years)
2	2020-21	AICTE-RPS	18.67	2020-2023 (3 years)
3	2020-21	DST-TDT	6.79	2020-2021

				(1 year)
4	2020-21	SERB-TARE	18.30	2020-2023 (3 years)
5	2020-21	SERB-TARE	18.30	2020-2023 (3 years)
6	2021-22	DST-TMD-WCE	28.65	2021-2023 (2 years)

e. Utilization of R & D facility

Extensive research facilities are available for the area of renewable energy, High voltage Engineering to carry out research

f. Centre of Excellence

Centre of Excellence is developed in collaboration with Schneider Electric Pvt.Ltd in the area of Smart Electrical and Building Automation

g. FDPs organized

2020-2021 – 4 (self supporting)

h. Faculty participated in FDPs/STTPs

S.No	Academic year	count
1.	2018-19	72
2.	2019-20	105
3.	2020-21	140

i. Workshops/conferences organized

Academic year	Institutional	National	International
2020-2021	1	06	--
2019-2020	--	6	--
2018-2019	--	18	--

j. Any other significant activity

- Professional societies like IEEE PES and IET are lead by EEE department and various events are organised that improve technical & life skills of the students
- Energy Conservation Club is lead by EEE department through which environment related awareness programmes are organised
- Faculty members of EEE department are acting as Doctoral committee members, delivering guest lectures in different domains outside the institution

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

S.No.	Sponsoring Industry Name	Amount (Rs.)	Utilized for Project / Value added courses / Credit courses / Training / Regular lab practice / Others (Specify)
1	Thick India	1,02,000/-	One credit courses
2	Revolt India Pvt.Ltd	1,65,000/-	Project & demo purpose

b. Consultancy works done for industry/Organization

Year	2020-2021	2019-2020	2018-2019
Consultancy	06	05	03
Training	01	03	09
Testing	02	06	07

c. Industry executive training programmes organized – nil

d. Any other significant activity, Please mention

➤ MOU - 12 IN LIVE

15. List of Equipment / Instrument not in working condition

Nikola tesla machines laboratory - Rheostats 400 Ohms/1.1A- 4 nos and 710 Ohms/0.8A- 2 nos – not working due to Coil opened because of wear and tear

16. Name of the Equipment / Instrument / software not available as per curriculum

Nil

17. Licensed Software Details:

Name of the software
Power Electronics Simulation Software PSIM 7.1
MiPower Software Package Version 8.0 Computer Aided Power System Analysis Software Package
AU Power Simulation Single User
Business Writing 5 - Computer CD-ROM Road to IELTS Academic Module 5 User - Computer CD Rom
Author Plus 30 User- Computer CD-ROM (Includes Results Manager)
Multi Sim,SPICE -20 users
ANSYS Academic Teaching EM
LabVIEW Professional Development System 2013
MATLAB 7.6 R2008a Optimization tool box, Genetic Algorithm and Direct search toolbox
MATLAB R2015b & Tool Boxes Academic Site Licence
LabVIEW 2015 Academic Site Campus Licence shared With Mechatronics
Xilinx VIVADO

18. Infrastructure facility in the Department

Sl.No	List of Facility required / identified	Required as per norms	Available	Deficiency	Verified (Yes/No)
1.	No. of class rooms including furniture and fixture	11	13	-	
2.	No. of laboratories (including Furniture, fixtures)	13	13	-	
3.	No. of computers	100	158	-	
4.	Library facility	1	1	-	
5.	No. of faculty rooms	16	16	-	
6.	Canteen facility	Not Specified	Nil	-	
7.	Drinking Water facility	Essential	04	-	
8.	Adequate toilet facility for boys and Girls	As Required	05	-	
9.	Add any other available infrastructure facility		Lunch rooms-2 Store room- 2 Seminar hall-1 Conference hall-1	-	

19. Augmentation of infrastructure facilities during the last 5 years

- DST -FIST research lab established
- Schneider supported CoE Lab
- Industry collaborated Thick Innovation centre
- Establishment of Project cubicle
- Revoltec sponsored lab

20. Development plan / infrastructure facilities for next 5 years

- Establishment of infra structure for student and faculty exchange
- Development of hybrid renewable energy station

21. Non conformities listed in the last IQAC audit and its action-taken report

Nil

22. SWOT analysis of the Department

STRENGTH	WEAKNESS
<ul style="list-style-type: none"> • 7 ongoing research grants • Good publications in indexed journals (Scopus, SCI, WoS) • Established CoE in collaboration with Schneider Electric, Bangalore • Established CoE in energy audit in collaboration with fluke • Coaching classes for GATE is conducted regularly • Faculty retention • FIST renewable energy research centre with the state of art facilities • Collaboration with 4 foreign universities 	<ul style="list-style-type: none"> • Diversity in students & faculty • Industrial projects needs pick up • Visiting/adjunct/Ementus faculty not present
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • To address the issues involved in EV, Smart grid, Smart IoT etc., which are need of the hour • As the region is surrounded by industries, more opportunities are to address the problem/issues in the industries • Incorporating AI/DS/ML with electrical sciences • Utilize the FIST equipment/fluke equipment for consultancy and testing • Centre of excellence-Schneider lab acting as a nodal center for conducting the faculty development program for external faculties and research scholars • Alumni network for internship and placement • KEC Innovation and Start-up Policy (KISP) is introduced for innovation and entrepreneurship related activities for Students, Faculty and Staff of Kongu Engineering College 	<ul style="list-style-type: none"> • The choice of core branches/sectors are deteriorated • Placement in core sectors

23. Observation by the Audit Team

Laboratories: Strength:

- Very clean house keeping.
- Good documentation and records.
- Recent technology based equipment were purchased in COEs and Labs.

- Ceiling fan inhouse rewinding / repair is inplace. Analysis on the number of fans serviced, cause for failure may be studied to rectify the same.
- Service label with date may be indicated in the serviced fan.
- Used cables / wires from power house may be reused in laboratories.
- IE-3 energy efficient motors may be procured to compare with old machines.
- Stock register shall be updated as per the index in few labs.

Power Electronics:

- Technical Assistant may undergo training for better usage
- MATLAB 2015 (b) and PSPICE MULTISIM - licensed version available, and upgradation need to be done
- Number of DSO's may be increased in PE lab to understand the control concepts

Power Systems:

- PRDC - Mipower and AU power softwares in usage
- Application based experiments to be included in existing experiment kits

Integrated Circuits:

- Data sheet to be included in the lab observation, and students should be trained to use the same

FIST Lab:

- Equipment utilization to be strengthened by creating new experiments and for further R&D proposals
- Few research publications available, but should be scaled up with new concept using available equipments.

Suggestions for further improvements:

1. COE industries may be tied up for internship and job offers
2. Application based experiments to be scaled up
3. Projects and publications related to each laboratory to be strengthened
4. Skill based training to be arranged for faculty & staff

24/9/21
INTERNAL AUDITOR
Dr. U.S. RAGUPATHY
 Professor

M. Srinivas
EXTERNAL AUDITOR

24. Outcome of meeting with faculty

- 2 year once regulations change makes gap between senior & junior students interaction is low.
- Teaching facility in Class rooms is satisfactory.
- College working Atmosphere is good.
- For Clerical work – Separate cell / software may be allotted to improve faculty utilization.
- Self – appraisal and recognition is one of the best practices.
- Core Company – Placements issues to be addressed at all levels.
- Software training is more sufficient.
- Incentives for Paper publication, Projects and for some % for PhD Incentives in place.
- After 5 years & 10 years completion of service in KEC, NO DA increase, may be considered in future.
- No concession for faculty wards admission may be addressed to top management.

Future Plan:

- Dual power supply design & servicing to entire college.
- Training for core companies to be improved.
- Core company Interview questions and evaluation by industries to be introduced.
- Consultancy based revenue generation in COE.
- Linking COEs in placement & Internship.

25. Outcome of the meeting with Students

- Curriculum Mathematical concepts to be explained practically for core subjects.
- Interdisciplinary subjects and labs to be provided.
- Last five minutes break for general discussion in each class.
- Higher Education to be strengthened by higher education cell.
- Alumni interaction to be strengthened.
- Lab to be opened beyond working hours after 5 pm, and components to be kept for doing placement
- Core Company training is required for placement.
- ICT tool usage is very good.
- Teaching with practical reality is to be improved.

- Comprehensive class is good.
- Project team members need not be 4 always, may be 2 or 1 based on projects.
- For any kind of competitive exam OD may be provided with the HoD prior approval.

26. Outcome of meeting with Non Teaching faculty

- Lab facilities are good.
- Service Training to be strengthened for in deep servicing.
- Employee children in School / College free admissions may be brought back again.
- Free Transport to be provided.
- Promotion for non-teaching may be given.
- Very small difference in salary between fresher and seniors to be addressed.

M Sundaram

(EXTERNAL AUDITOR)

Dr.M.Sundaram
Associate Professor
Department of EEE
PSG College of Technology
Coimbatore.

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Computer Science and Engineering
2. Programme & Branch (UG and PG): BE(CSE), ME (CSE)
3. Date of Audit: 18.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. P. Sakthivel Dean, University College of Engineering Ponnerikkarai, Kaaraipettai Village Kancheepuram - 631552 Mobile: 9444412789	Dr.P.Balasubramanie Professor & Registrar Department of Applied Science - PG Kongu Engineering College Mobile: 9443942365

5. Course availability based on Specialized area (as per 2020R)

Data Given in the format is verified

6. Availability of Faculty based on Specialized area

- i) Faculty – student Ratio

1:13.7

- ii) Competency level

Verified

7. Availability of Non-teaching staff

Available as required

8. Emerging areas identified and its Global relevance

Identified Five areas and initiative is seen to sign a centre of Excellence in one area

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

Available. (Identified 9 areas)

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- Choice based credit system
- Soft skill and professional skill training
- Project work is divided into Phase I and Phase II
- Introduced Comprehensive Test/Viva

11. Details of student support mechanism

a. Soft skill Development

- Organized 1 programme in 2019-2020 and
- One programme in 2020-2021

b. Coding Skill Development

- Conducted 7 programmes through BYTS and 3 programmes through Examly
- c. Learning beyond the curriculum

- Organised 18 programmes and many students benefitted

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

- Participation is verified.

e. Placement

Very good. More than 90% in all the three academic years

f. Higher studies

Only 33 students in the three academic years and many students joined MBA and ME in KEC and nearby Colleges

g. Coaching for competitive examinations

Less participation

h. Innovation and Entrepreneurship and usage of TBI

Arranged few awareness programmes only

i. Internship

Good . Internship for second and third year is also seen.

12. Efforts made by the Department for tracking the holistic progression of the student

- Introduced some mandatory courses
- Encouraged the students to participate Extra , and co-curricular and cultural activities

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

SCI – 40

Scopus -118

Others – 22

Conference publications – 276 + 30 book chapters

Verified.

b. Student projects converted into publications

Available But the number is less for the strength of the department

c. Patents

Published -7 and granted- Nil

d. Funded R & D projects

2 ongoing (FIST and ICSSR)

e. Utilization of R & D facility

Evidences seen

f. Centre of Excellence

Nil

g. FDPs organized

Good number

h. Faculty participated in FDPs/STTPs

Good

i. Workshops/conferences organized

Organized 12 workshops, 2 conferences and 3 technical symposiums

j. Any other significant activity

Initiative for establishing centre of Excellence.

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established

nil

- b. Consultancy works done for industry/Organization

Completed 68 works and generated Rs. 4,44, 575 and involved in 3 testing works and generated an amount of Rs. 5, 38, 136.

- c. Industry executive training programmes organized

Nil

- d. Any other significant activity, Please mention

13 collaborations and that to by senior faculty

15. List of Equipment / Instrument not in working condition

4 only.

16. Name of the Equipment / Instrument / software not available as per curriculum

Nil

17. Licensed Software Details:

Sufficient numbers are Available. Licenses are verified

18. Infrastructure facility in the Department

Sufficient

19. Augmentation of infrastructure facilities during the last 5 years

Established two laboratories

20. Development plan / infrastructure facilities for next 5 years

Prepared a plan. Found encouraging

21. Non conformities listed in the last IQAC audit and its action-taken report

Nil

22. SWOT analysis of the Department

Available. But no action taken.

23. Observation by the Audit Team

- All the relevant records are verified
- Placement is good. Also arrangement of internship for the students is good.
- Sufficient faculty members, infrastructure and software available
- Number of faculty members with Ph.D qualification is good
- Orientation and Pedagogy for the new faculty members from the department side is missing.
- Faculty number participation in international conferences outside Tamil Nadu is less.
- Number of MoU signed is less if we consider the Number of faculty members
- Number of R & D Projects is less if we consider the number of faculty members with Ph.D qualification
- Steps needs to be taken to improve the students participation and success in competitive examination like Gate and so on.
- Student entrepreneurship is not seen.
- Industry linkage activities are to be improved.
- Number of Indexed journal publication is less when considering the number of faculty members and number of PhDs.
- Industry executive training programmes conducted is nil.
- Sponsored Lab established is nil.
- SWOT Analysis is done but the follow action is missing.

P. Devarman
18.9.21.
INTERNAL AUDITOR

[Dr. P. Devarman]

P. Senthivel
18.09.2021
EXTERNAL AUDITOR

[Dr. P. Senthivel]

24. Outcome of meeting with faculty

- In general all the faculty members are happy and satisfied.
- Participation of the faculty member in conferences and workshop outside Tamilnadu is less.
- Publication of Journals in SCI indexed journal is less by considering the number of PhD holders in the Department.
- Faculty members demanding the yearly increments
- Membership in Societies is not Sufficient
- Learning of latest technology is not by many faculty members

25. Outcome of the meeting with Students

- In general all the students are happy and satisfied
- Involvement of students in competitive examination is to be improved
- Gate Preparation is not encouraging
- Awareness of EMDC is to be done

26. Outcome of meeting with Non Teaching faculty

- Most of the Non-teaching members are not bothering about qualification upgradation.
- They are also done any certification courses
- They are expecting the annual increments

P. Sankthivel
18.09.2021
EXTERNAL AUDITOR
[Do.P. Sankthivel]

KONGU ENGINEERING COLLEGE
PERUNDURAI, ERODE – 638012
ACADEMIC AUDIT – 2020-21
(Observations by Audit Team)

1. Name of the Department: Information Technology
2. Programme & Branch (UG and PG): B.Tech & M.Tech(IT)

3. Date of Audit: 20.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. P. Sakthivel Dean, University College of Engineering Chennai – Bangalore National Highway Ponnerikkarai, Kaaraipettai Village Kancheepuram - 631552 Mobile: 9444412789	Dr. T Meeradevi, Professor & Head, Department of ECE, Kongu Engineering College

5. Course availability based on Specialized area (as per 2020R)

Yes- Based on the specialized area courses are included in the curriculum

6. Availability of Faculty based on Specialized area

- i) Faculty – student Ratio : 1:13 (UG), 1:6 for PG
- ii) Competency level : Adequate competency level

7. Availability of Non-teaching staff :

Sufficient number of NTS available

8. Emerging areas identified and its Global relevance:

Identified and included in curriculum

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses :

Identified and the list is given in the department report

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Based on the curriculum, the innovations are given in the department report.

Research innovations : NIL

11. Details of student support mechanism

- a. Soft skill Development : Trainings are conducted
- b. Coding Skill Development: Trainings are conducted
- c. Learning beyond the curriculum :
 - One credit course / VAC / Online courses offered
- d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)
 - Association activities are done beyond the class. Professional society activities to be improved
- e. Placement: 2020-21 : Placement count is 70 only. But in 2021-22 it is high compared to the last year
- f. Higher studies : It needs to be improved a lot
- g. Coaching for competitive examinations : It needs to be improved
- h. Innovation and Entrepreneurship and usage of TBI : Very minimum usage of TBI towards students / faculty activities
- i. Internship: Placement based internship only available.

12. Efforts made by the Department for tracking the holistic progression of the student

Curriculum is framed towards the holistic progression of a student. Other than that hierarchy is followed in the department to monitor the student

13. R & D (Year wise details for last 3 years)

- a. Publications (SCI/SCOPUS/Others) : Count is given in the department report. But the publication is very less (In the year 2020-2021: 39 publications in SCI/SCOPUS)
- b. Student projects converted into publications : Conversion rate is less (only 19)

- c. Patents : NIL with KEC as Applicant name. But 11 with Faculty members as applicant
- d. Funded R & D projects : NIL
- e. Utilization of R & D facility : NIL & Outcome is NIL
- f. Centre of Excellence : NIL (1 in progress)
- g. FDPs organized : For the last three years only 4 FDPs organized including self supporting
- h. Faculty participated in FDPs/STTPs : 2019-20 : 256
2020-21 : 96

This is due the limitations in faculty appraisal. It requires only 2 per faculty.

- i. Workshops/conferences organized : 13 organized
 - j. Any other significant activity : NIL
14. Industry Linkage Activities (Last 3 years)
- a. Sponsored labs established : NIL
 - b. Consultancy works done for industry/Organization : Students projects are converted into consultancy
 - c. Industry executive training programmes organized : NIL
 - d. Any other significant activity, Please mention : NIL
15. List of Equipment / Instrument not in working condition : NIL
16. Name of the Equipment / Instrument / software not available as per curriculum : NIL
17. Licensed Software Details: Given in the department report
18. Infrastructure facility in the Department : Given in the department report
19. Augmentation of infrastructure facilities during the last 5 years:
Laboratory equipments are updated based on the requirement. Details given in the department report

20. Development plan / infrastructure facilities for next 5 years
- setting-up/renovation of Laboratory for existing/new programmes
 - Installation of studio for development of online and MOOC content
 - Establishment of Centre of Excellence (CoE)
 - Establishment of Research/Product laboratory
 - Commencement of new programmes in IOT and Cybersecurity

21. Non conformities listed in the last IQAC audit and its action-taken report

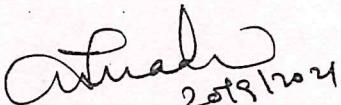
NIL

22. SWOT analysis of the Department :

Opportunities are available. Faculty need to utilize it in a proper way.

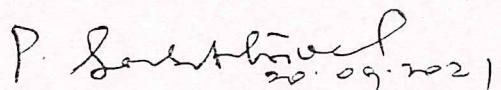
23. Observation by the Audit Team

- Applying the R&D proposal is very less
- Faculty training is also reduced from last year to this year- due to faculty appraisal requires only 2 FDPs for each faculty
- Publication need to be improved
- Outcome of R&D facility is less. This needs to be improved
- Usage of facilities like TBI etc., is very less towards students activity
- Number of printers are high in each lab
- Number of systems for PG lab is also high
- Higher education and competitive exams awareness and success rate is very less
- Project report quality is to be improved
- Laboratory manuals are to be improved


2021-2024

INTERNAL AUDITOR

G. Neerden
Prof & Head/ECE


2021-2024

EXTERNAL AUDITOR

Dr. P. Sathivel
Dean, Univ. College of
Engg

Kanchepuram

24. Outcome of meeting with faculty

- All faculty are moving towards the faculty appraisal marks, not able to concentrate on TLP. Incentives only based on research components. It will be better if TLP is also considered. Time allotted for research is very less.
- Laboratory systems are to be updated
- Separate lab for project and research
- Students self learning activity to be improved
- DA /Increment / Promotion to be improved. No Scale difference between new designation and old designations
- Casual leave instead of 2 days per month, it may be increased based on the requirement
- Data collection is very hectic work. Common data base may be developed with required format
- Based on the GATE syllabus , all the components may be added like Theory of computation and compiler design in the curriculum

25. Outcome of the meeting with Students

- Need physical orientation programme for second year students
- Need time to do self learning
- Books and library access for second year students
- Minimum 2 Water doctor for each floor
- CC1- Systems are hanging ,it is to be upgraded
- Only software development companies are called for Placement. Security /networking based companies may also be approached
- **Bhavani Hostel** - WIFI at Girls hostel to be improved. It is good only in fourth floor , Hot drinking water may be provided in each floor. Time to enter into the hostel may be extended upto 6.30pm , so that they can engage in extra curricular activities. Food quality and servicing quality may be improved.

P. Senthilnath
20.09.2021

26. Outcome of meeting with Non Teaching faculty

- No promotion for the last 10 years, No increment for last two years. It may be improved
- No benefit in scale after upgrading their qualification
- No medical leave.
- Bus fare for NTS is economically not accommodated
- Leave for staff/faculty marriage or for their wards
- Extra duty allowance for system group. Either bus fare may be reduced or petrol allowance may be given
- No salary difference between experienced staff and newly joined staff

P. Senthivel
20.09.2021
EXTERNAL AUDITOR

KONGU ENGINEERING COLLEGE

ACADEMIC AUDIT REPORT: 2020-21

(Details to be prepared by the Department)

IS 2086

1. Name of the Department: CHEMICAL ENGINEERING
2. Programme & Branch (UG and PG): B.TECH-CHEMICAL ENGINEERING, M.TECH- CHEMICAL ENGINEERING
3. Date of Audit: 11.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.M.Chidambaran Former Director National Institute of Technology Tiruchirappalli 620015	Dr.P.N.Palanisamy Professor of Chemistry Kongu Engineering College Perundurai, Erode- 638060

5. Course availability based on Specialized area (as per 2020R): Yes, Available
6. Availability of Faculty based on Specialized area(September 2021)
 - i) Faculty – student Ratio

UG/PG/First year	No. of faculty required as per AICTE norms	Available faculty	FSR
2020-21	25	23	1:19.41

- ii) Competency level

Sl.No	Specialized area	Name of the Faculty
1.	Multiphase reactors, Materials, Fuels, Wastewater Treatment, catalysis	Dr.K.Kannan
2.	Environmental Engineering, New product formation, Waste water Treatment, Nano encapsulation of product, Drying kinetics	Dr.S.Kandasamy
3.	Bioenergy, industrial wastewater treatment, biocomponent extraction, MFC, nanotechnology	Dr.K.Senthilkumar
4.	Separation Technology, Mass Transfer & Process intensification, Agitation & mixing based operations, Wastewater Treatment, Heat Transfer	Dr.C.Gomadurai
5.	Waste water treatment, Waste valorization, New product development, Drying and extraction, Optimisation techniques	Dr.V.Sangeetha
6.	Heat Transfer, Mass Transfer, Nanofluids, Petroleum Processing, Simulation	Dr.A.S.Periasamy Manikandan
7.	Water treatment, Electro-chemical Process, Fuels, Catalyst, Process Chemistry	Dr.Shanmugam P
8.	Transport Phenomena, Process Modelling and Simulation, Chemical Reaction Engineering	S.Akila

9.	CO ₂ Sequestration, Mass Transfer, Environmental Engineering, Extraction Waste water treatment	Dr.P.P.Selvi
10.	Heat Transfer Using Nanotechnology, Heat Transfer Studies In Compact Type Heat Exchanger, Waste Water Treatment Using Nanotechnology, Optimization Techniques Using Minitab, Factorial Design Analysis, Extraction Of Medicinal Product From Plants	Dr.D.Nesakumar
11.	Industrial Mixing, Waste water treatment, Nanoscale Science and Engineering, Design and modeling of equipment, process and product, Fluid Mechanics and Interfacial Phenomena	Dr.D.Revathi
12.	Textile Waste Water Treatment Process, Textile ETP Solid Waste Management, Application of Multiphase reactors in Water Treatment, Desalination, Membrane separation process	G.Mugaishudeen
13.	Phytochemical Extraction (Pharmacognosy), Encapsulation technology, Bioremediation Biopolymers and Bioplastics, Biochemical Engineering	K.Kalaivani
14.	Thermochemical Conversion of Biomass & Biofuel Production, Extraction & Value addition of Natural Products, Adsorption & Wastewater Treatment, Nano materials & its applications, Hydrodynamic Studies & Computational Fluid Dynamics	S.Mothil
15.	Synthesis and Applications of Catalysts, Process Intensification using Ultrasonic Processes, Waste water treatment using Advanced Oxidation, Bio-fuels Hydrocarbon processing	S.Pranav
16.	Waste Water Treatment, Process Control, Solid Waste Management	T Sathish
17.	Chemical Process Plant Safety, Synthesis of Bioactive components from Biomass, Process Modeling and Simulation, Process Dynamics and Control, Fluidization	J.Jaya Bharathi
18.	Thermochemical Conversion, Membrane Fabrication, Wastewater Treatment	R.Sathish Raam
19.	Bioocomposites, Waste conversion techniques, Process modeling and simulation	P.Manjula
20.	Adsorption, Nanoscience And Composite, Water Treatment , Energy Engineering, Process Control	A S Sajitha
21.	Polymer Composite Materials, Renewable energy, Nano technology, Waste management	A. Manju Sri
22.	Membranes synthesis, Fuel cell & batteries, waste water treatment, Extraction of value added products from agricultural waste, composite fibers synthesis & characterisation	Dr.Pagidi Aruna

7. Availability of Non-teaching staff : Yes, Available

Sl.No	Area/Competency	Name of the staff
1	Heat & Mass Transfer Operations	P.Paramasivam

2	Fluid Mechanics / Mechanical Operations	M.Thangavel
3	Technical Analysis / Applied Chemistry	J.Balamurugan
4	Process Control / Reaction Engg.	D.Jagadeesh
5	Process Simulation / Computer maintenance	T.Ramachandran
6	Data Entry	R.Boomathi
7	Office Maintenance	R.Navinsendhur
8	Drinking Water Plant	N.Yuvraja

8. Emerging areas identified and its Global relevance

- Oil and Natural Gas
- Petroleum Refinery
- Battery and Fuel Cell Technology
- Nanotechnology
- Computational Fluid Dynamics
- Drugs and Pharmaceutical Processes
- Bio technology
- Paper Technology
- Ores and Mineral Processing
- Agricultural sector
- Nuclear Engineering
- Waste Management

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas,
Employability based courses: Yes, Given

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Curriculum:

- Introduction of advanced technology related elective subjects like fuel cell, surface coating technology, membrane technology, nanotechnology, nuclear engineering, in the curriculum
- Practical courses such as "Process Computation Laboratory" and "Process Simulation Laboratory" are introduced in curriculum to improve placement opportunities in core companies.
- A special course "Industrial training" is introduced in the curriculum for the students to get industrial exposure
- Flexibility in curriculum - facilitating students career growth through choice based credit system
- Reviewing and updating curriculum and syllabi based on stakeholders feedback.

Teaching, learning and evaluation

- Encouraging students to study abroad under Student Exchange programme

- Motivating students to go internship in India and abroad to get industrial and international exposure
- Involving students in industrial consultancy activities to solve real time problems
- Encouraging students to attend interdisciplinary subjects like Python programming, Process automation, renewable energy, etc.
- E-content course materials are uploaded in faculty webpage for easy access by students
- Providing exposure in advanced industrial and research fields through conduction of one/two credit courses.

Research and extension:

- Inclusion of both design calculations and experimental work in the final year project.
- Students are encouraged to publish their final year project work in refereed journals
- Encouraging students to participate in national level design and innovation contents

Academic and Administrative governance

- Conducting more number of alumni interaction with students to find opportunities for their career growth.
- Coaching for competitive examinations like GATE by department faculty
- Training students to develop programming and soft skills to find better placement opportunities through programming skills, career skills courses and comprehensive tests.

11. Details of student support mechanism (last 3 academic years).

a. Soft skill Development (Details Provided by the Department)

2018-2019: 124 Students attended 18 Programmes

2019-2020: 110 Students attended 16 Programmes

2020-2021: 108 Students attended 3 Programmes, 103 students attended 3 programmes and 115 students attended 01 programme

b. Coding Skill Development: Introduced in R2020

c. Learning beyond the curriculum: Yes Students are doing NPTL

NPTEL ONLINE COURSE: 2018-19 :11

NPTEL ONLINE COURSE 2019-2020: 15

NPTEL ONLINE COURSE 2020-2021: 06

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

PARTICIPATION OF STUDENTS (Details given by Department)

2018-19: 157

2019-20: 102

2020-21: 151

e. Placement

2018-19: 27

2019-20: 43

2020-21: 23

f. Higher studies

2018-19: 14

2019-20: 04

2020-21: 01

g. Coaching for competitive examinations

2020-2021 : 25 Students attended outside online mode

ACADEMIC YEAR 2019-2020- NIL

ACADEMIC YEAR 2018-2019- NIL

h. Innovation and Entrepreneurship and usage of TBI

1. NO. OF STUDENTS PARTICIPATED IN IEF ACTIVITIES FROM THE DEPARTMENT

136 Students attended - 11 Programmes

2. NO.OF TEAMS PARTICIPATED IN VARIOUS NATIONAL /INTERNATIONAL LEVEL COMPETITIONS THROUGH IEF FROM THE DEPARTMENT

4 teams participated in 7 activities

3. INNOVATION RELATED ACTIVITIES

01 innovation

ENTREPRENUERSHIP DETAILS

2018– 2019 : 6

2019– 2020 : 2

2020-2021 : nil

i. Internship

2018-2019: 13 students

2019-2020: 98

2020-2021: 128

12. Efforts made by the Department for tracking the holistic progression of the student (20-21):
Department initiated effort to make holistic progression

13. R & D (Year-wise details for last 3 years)

- a. Publications (SCI/SCOPUS/Others) : $16+37+22+7 = 82$
- b. Student projects converted into publications : $5 + 18 + 1 = 24$
- c. Patents Applied (Through KEC) : -
 Published : 4
 Granted : --

d. Funded R & D projects :

Sl. No.	Year	Name of the funding Agency	Amount sanctioned	Period
1	2019	TNSCST-SPS	Rs.15,000	Feb – Apr 2019
2	2019	AICTE-SPDP	Rs. 11,89,000	June 2019 – May 2022
3	2020	TNSCST-SPS	Rs.15,000	Mar – May 2020
4	2019	TNSCST-RFRS	Rs. 3,00,000	May 2019 – May 2021
5	2020	EDII-IVP	Rs. 2,43,000	Ongoing

e. Utilization of R & D facility: Yes, Utilized

Centre of Excellence: Steps Initiated

f. FDPs organized : Sponsored – 2

Self-supported - NIL

g. Faculty participated in FDPs/STTPs : $80+123+78+17 = 298$ programmes

h. Workshops/conferences organized: Institutional - NIL

National - 4

International – NIL

i. Any other significant activity, Please mention:

Books / Book chapters published - 19

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established : Nil (Steps Initiated)
- b. Consultancy works done for industry/Organization : 04
- c. Industry executive training programmes organized : 06
- d. Any other significant activity, Please mention : -

15. List of Equipment / Instrument not in working condition (September 2021)

S.No	Name of the laboratory	Name of the Equipment / Instrument not in working condition	Reason for not working
1.	Mechanical Operations Laboratory	Laminar Flow Apm 500 Recirculating Mode	Under maintenance
2.		Ac Motor (With Drive)	Under maintenance
3.	Applied Chemistry Laboratory	Digital balance (Simanz)	Load cell & IC problem
4.		Conductivity Meter	1 Error, IC problem
5.		pH meter Pen Type	Display IC Problem & Short Circuit
6.		Polari meter	Muta rotation error
7.		Flame photometer (Elico make)	Sample injection pump & suction unit damaged
8.		Hot plate - Round type	Corroded & Body Damaged & Body earth
9.		Constant temp. Oil bath	Heater & Stirrer, Control unit not working
10.		Photo chemical reactor	UV lamp damaged
11.		Kinetics of Dissolution of Benzoic Acid	Agitator rod to be replaced
12.		Constant Temperature Water bath with Shaker	Motor of the shaker is not working
13.		Conductivity Controller	Circuit continuity problem

16. Name of the Equipment / Instrument / software not available as per curriculum (R2020)
(September 2021)

Sl.No	Name of the Laboratory	Name of the Equipment / Instrument not available as per curriculum	Reason for non-availability
1.	Chemical Reaction Engineering Laboratory	Adiabatic Plug Flow Reactor, Isothermal CSTR, BET Surface Area Analyzer	Proposal for purchase given in budget and waiting for approval

17. Licensed Software Details: (September 2021)

Sl.No	Name of the software	Name of the Laboratory	Validity period/Perpetual
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1.	Aspen Software	Process Simulation Lab	03.10.2019 to 14.09.2022
2.	HTRI Software	Process Simulation Lab	Renewal to be enabled only from 2023
3.	ProSimulator Simulation software	Process Simulation Lab	Perpetual

18. Infrastructure facility in the Department (September 2021)

Sl.No	List of Facility required / identified	Required as per norms	Available	Deficiency	Verified (Yes/No)
1	No. of class rooms including furniture and fixture	8	8	Nil	Yes
2	No. of laboratories (including Furniture, fixtures)	10	10	Nil	Yes
3	No. of computers	60	85	Nil	Yes
4	Library facility	-	1	Nil	Yes
5	No. of faculty rooms	24	29	Nil	Yes
6.	Canteen facility	-	-	NA	Yes
7.	Drinking Water facility	-	3	NA	Yes
8.	Adequate toilet facility for boys and Girls	-	4	NA	Yes
9.	Add any other available infrastructure facility		40	NA	Yes

19. Augmentation of infrastructure facilities during the last 5 years

Project laboratory was established for students to perform basic fabrication work and storage of completed projects

20. Development plan / infrastructure facilities for next 5 years

- a. Establishment of Center of Excellence in Waste Management
- b. Industry Sponsored Process Simulation Laboratory
- c. Fabrication Lab is planned to establish in the upcoming years to perform minor works in glass blowing, carpentry, acrylic and metal cutting
- d. Establishment of Thermodynamics Laboratory
- e. Establishment of Petroleum Laboratory

21. Non conformities listed in the last IQAC audit and its action-taken report

Verified

22. SWOT analysis of the Department (September 2021)

Verified

Details to be filled by Audit Team

23. Outcome of the meeting with faculty: Attached

24. Outcome of the meeting with Students:

1. German and Japanese coaching - free of cost
2. Need more Industry oriented Chemistry Subjects

3. Credit Transfer system required
4. Professional elective or NPTEL course – Requested to choose any one
5. Software related to either lab or theory to be included – Chemical Branch software
6. GATE coaching – from outside
7. Library facility-OK
8. Alumni guest lecture –OK
9. Comprehensive viva- Need more hour

25. Outcome of the meeting with Non-Teaching Staff: Enclosed

26. Observation by the Audit Team:

1. Laboratory:

CRE Lab:

1. Rotameter calibration required
2. Extra equipments required -5
3. Table arrangement to be modified- with new table (1 table/4 students)
4. Additional Fans and Lights required – based on seating arrangement
5. Room adjacent to CRE lab - may be utilized of R &D or meeting hall

Heat and Mass Transfer Lab:

1. New location for equipments
2. New upgraded equipments required for Experiment 2 and 4 - 2 no
3. Beyond the syllabus- equipments available
4. Composite Wall – Heat transfer lab – new space allotment required
5. A separate lab space for Mass transfer lab
6. Table arrangement to be modified- with new table (1 table/4 students)
7. Mass transfer lab- Equipment to be orderly arranged

FM&MO Lab:

1. 2 equipments not working
2. Separate lab space for FM
3. Regularly doing service-if required
4. Equipment to be orderly fixed

Process control lab:

1. 2 equipments- order to be placed in future
2. 2 CRE lab equipments to be shifted to some other place or space

Applied Chemistry lab:

1. Not working – 7 equipments (details given above)
2. Extra 5 equipments available for research

3. Seating arrangement (Stool) required for students (35 no's)
4. Fume board required

R&D Lab:

1. FT-IR not working

Simulation Lab:

1. 3 Licensed software available
2. No specific Requirements

Computer Centre:

1. Systems available- Utilized by Students and Faculty

General:

Each lab can be provided a good printer- for faculty use

Library:

Department library to be improved with more books and to be easily access.

In main library it is desirable to have text book reference section wherin 5 copies of each text books with each subject to be provided for reading only.

Interaction with HOD:

Additional space required for UG lab.

Southern side of the building space may be utilized for fabrication and R&D lab.

R.N.R.
13.9.21

INTERNAL AUDITOR

(Dr. R.N. Palanisamy)

M. Chidambaram
13.9.21

EXTERNAL AUDITOR

(Dr. M. CHIDAMBARAM)

24. Outcome of meeting with the faculty

One to one interaction with faculty (6 faculty members)

Curriculum , teaching & learning , training & placement, higher education, student admission are satisfactory.

Salary package in the campus recruitment for the graduates to be improved.

Few additional elective courses to be offered.

Testing facility to be provided for students' projects.

Research labs need to be created for faculty.

Additional number of students can be encouraged to participate in the GATE exam coaching.

Areas of interest for faculty varies from hydrodynamics, heat transfer augmentation by nano-particles.

Center of excellence: Waste management

Faculty with only M.Tech qualification will start doing PhD program.

No of students for M.tech admission to be increased.

Grievances: Salary to be improved. Salary slip to be given. PhD allowance, increments to be given.

Clerical work to be reduced and increase the academic work.

26. Outcome of meeting with the non teaching staff.

Laboratory facility is good.

Some suppliers of equipment not responding for maintenance or delay in repairing.

Skill up-gradation needs to be provided. Areas of skill are to be identified.

Training on safety by professional to be provided for every one

Grievances: Salary to be improved. Salary slip to be given. Increment in salary to be given

Bus Transport facility charges need to be reduced.

Medical facility is to be improved.

admission fees for the wards of staff joining in Kongu Institutions to be reduced.

M. Chandrasekaran

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: **Food Technology**
2. Programme & Branch (UG and PG): **BTech Food Technology and MTech Food Technology**
3. Date of Audit: **18.9.2021**
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.S.Ganapathy Professor Department of Food Process Engineering, Agricultural Engineering College & Research Institute Tamilnadu Agricultural University Lawley Road, Coimbatore-641003. Mobile: 9443534273	Dr.S.Shankar Professor & CCO (R&D) Department of Mechatronics Engineering Kongu Engineering College Erode

5. Course availability based on Specialized area (as per 2020R)
Sufficient and significant changes made from previous regulations
6. Availability of Faculty based on Specialized area
 - i) Faculty – student Ratio **1: 15 for UG & 1:12 for PG**
 - ii) Competency level : **Available in Process Engineering, Food Engineering, Dairy Technology and Food Chemistry domains**
Further one or two domains may be added in future for offering electives
7. Availability of Non-teaching staff
3+ 1 (DEO). One or Two needs to be added
8. Emerging areas identified and its Global relevance : **Sufficient**
 - **Non-thermal processing for food preservation**
 - **Nanotechnology in processing and preservation**
 - **By-product utilization of agricultural/food industry**
 - **Non destructive quality evaluation of foods**

- Innovative extraction methods for bio-active compounds and its encapsulation
 - IOT in food
9. Curriculum identified based on emerging thrust areas including interdisciplinary areas,
Employability based courses : **Significant as provided**
10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department
- Research and extension-Research lab was initiated with sophisticated instruments, still more equipments like FTIR, SEM, Pilot Plants (Dairy, Food), E-nose, Rapid visco analysers, GCs etc may be added and two research projects are ongoing - **Good**
 - Academic and Administrative governance – Decentralization of the administrative work - **Good**
11. Details of student support mechanism
- a. Soft skill Development : **Sufficient**
 - b. Coding Skill Development : **Needs improvement. No separate CC available to enrich students coding skills. No separate Food Tech related software's available**
 - c. Learning beyond the curriculum : **Sufficient**
 - d. Learning beyond the class (Participation in co-curricular and extra-curricular activities) : **Sufficient number of papers presented, but project models displayed outside needs improvement**
 - e. Placement : **Needs lot of improvement (Effective to be around 30% with respect to approved intake)**
 - f. Higher studies : **Good number of students opted. For PG it needs improvement**
 - g. Coaching for competitive examinations ; **2 GATE, 1 CAT, 2 IELTS - Good**
 - h. Innovation and Entrepreneurship and usage of TBI - **GOOD but TBI can focus on Food related activities to enrich students interest**
 - i. Internship : **On average 20% students opted Internship - Good**

12. Efforts made by the Department for tracking the holistic progression of the student

Several activities carried out to enrich students knowledge

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Average one per year and it needs improvement. Publications and R&D projects not percolated to the entire department. Only top two involved in most R&D activities.

b. Student projects converted into publications

Very low , needs improvement in terms of UG & PG project conversion rate

- c. Patents : 2 in assessment period. Good
- d. Funded R & D projects: One project worth 10.11 Lakhs obtained. Needs improvement.
- e. Utilization of R & D facility : R&D facility in the department is very weak. Equipment may be purchased to motivate students & faculty research
- f. Centre of Excellence Not available
- g. FDPs organized : Only one
- h. Faculty participated in FDPs/STTPs : Almost one per faculty per year
- i. Workshops/conferences organized : 2 in assessment period. Needs improvement
- j. Any other significant activity : Nil

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established : Nil (At least one to be added, tieup with nearby industry)
- b. Consultancy works done for industry/Organization: Needs improvement.
- c. Industry executive training programmes organized : None
- d. Any other significant activity, Please mention :None reported

15. List of Equipment / Instrument not in working condition

Few identified in labs.

16. Name of the Equipment / Instrument / software not available as per curriculum

Sl.No	Name of the Laboratory	Name of the Equipment / Instrument not available as per curriculum	Reason for non-availability
1	Fruit & Vegetable Processing	1. CSC Bostwick Consistometer 2. Auto Digital Refractometer	1. Purchase is in progress 2. Manual type is available, Advanced version of refractometer has to be purchased
2	Dairy Engineering Lab	Paneer making machine	Purchase is in progress
3	Food Packaging Technology	1. Head Space Analyzer 2. Gas Mixing Tank	Purchase is in progress
4	Food Process Engineering Lab	Tray drier (small)	Tray drier of large size available, small size is needed for lab experiments

17. Licensed Software Details: Only one purchased in 2011. Recent software's may be purchased in line with industries.

18. Infrastructure facility in the Department : Good

19. Augmentation of infrastructure facilities during the last 5 years : Budget utilization in most labs is poor.

20. Development plan / infrastructure facilities for next 5 years : May be proceeded as mentioned

21. Non conformities listed in the last IQAC audit and its action-taken report : Verified

22. SWOT analysis of the Department

Strength

- Well defined curriculum and syllabi
- Energetic and multidisciplinary faculties
- Good Academic results record with a higher pass percentage
- Periodic industrial exposure to students
- Motivated students with innovative ideas

Weakness

- Research activities need to be strengthened
- Less consultancy work
- Students qualifying in competitive exam needs improvement
- Less number of industrial projects

Opportunities

- Opportunities for students to be placed in Top MNC companies
- Student Entrepreneurs
- Food Testing and quality analysis for the regional agro based industries'
- Improving industrial and university collaboration

Threats

- Frequent change/upgradation in industrial practices and technologies
- Change in Student Learning patterns
- Retention of teaching faculty

23. Observation by the Audit Team

Points for Immediate Action

- Department computational facility needs immediate improvement, Separate Lab is required (Only 8 PC's available in entire department)
- Budget utilization is very poor (last three Years) in 6 labs needs immediate attention
- Beyond the curriculum, experiments should be added in all laboratories
- Paper publications and Consultancy needs improvement.

Scope for Improvement

- Advanced instruments may be added in each lab
- Setting up pilot plants wherever possible like
 1. Fruits and Vegetable Processing
 2. Dairy Processing / Engineering
- Quality of publications needs improvement and it is not directed at all levels
- UG Projects to paper conversion rate is low
- NABL accreditation process
- Industrial supported lab is missing
- Centre of Excellence is required
- Placement needs improvement (less than 30% comparing approved intake)

Strength

- Good Graduate Rate (<95%)
- Enough number non formal courses

+ 18/9/21

88%

EXTERNAL AUDITOR

Dr.S.Ganapathy
Professor
Tamilnadu Agricultural University
Coimbatore

INTERNAL AUDITOR

Dr.S.Shankar
Professor / Mechatronics Engineering
Kongu Engineering College
Erode

24. Outcome of meeting with faculty

- o Faculty retention rate is low
- o Work load is high
- o FSR may be increased to 1:13
- o AICTE norms in salary
- o More support in core Placement & Training is required
- o NABL Accreditation may be attempted
- o Budget restriction in purchasing equipment needs revision

25. Outcome of the meeting with Students

- o TBI - Life Sciences to be included
- o More Industry related projects required
- o Higher education support required
- o Research facilities are poor
- o Non-Veg. foods in hostels

26. Outcome of meeting with Non Teaching faculty

- o Non teaching salary needs to be improved
- o Workload is high compare to other departments
- o Availability of non Teaching is 3+1, Needs to be increased to 5+1

+ 18/9/21

EXTERNAL AUDITOR

Dr.S.Ganapathy

Professor, TNAU

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: ENGLISH
2. Programme & Branch (UG and PG): B.E /B.TECH /MBA
3. Date of Audit: 20.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
	<p>1. Dr.R.Somasundaram Professor, Department of Management Studies Kongu Engineering College</p> <p>2. Dr.N.Shanthi Professor & Head Department of Computer Science and Engineering Kongu Engineering College</p>

5. Course availability based on Specialized area (as per 2020R)

Sl. No.	List of Specialized area Identified under each Branch	List of Core Theory Courses under each Specialized area	List of Core Laboratory Courses under each Specialized area	List of Theory Elective Courses under each Specialized area	List of Laboratory Elective Courses under each specialized area
1.	Functional & Communicative English	20EGT11 - English Language Skills			
		20EGT21 - Advanced Communication Skills			

2.	<ul style="list-style-type: none"> ● Workplace Communication Skills ● Presentation Skills 		20EGL31 - English for Workplace Communication Laboratory		
3.	Training for Placements / Campus Interviews			18GEL51 - Professional Skills Training - I (English) 18GEL61 - Professional Skills Training - II (English)	

6. Availability of Faculty based on Specialized area(September 2021)

i) Faculty – student Ratio

UG/PG/First year	No. of faculty required as per AICTE norms	Available	FSR
General Engineering – Students' Strength-1620	108 including Science and Humanities	108	1 : 15

ii) Competency level

All faculty members of English are specialized in English Language Teaching

7. Availability of Non-teaching staff

2 members are available in the department. Ms.A.Rajeswari is misfit in the department

8. Emerging areas identified and its Global relevance

Professional / Workplace Communication & English Language Proficiency with relevance to CEFR levels.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

Communicative English / Advanced Communications Skills / English for Workplace Communication / Professional Skills Training / Business Communication

10. Any significant innovations in curriculum, teaching, learning and evaluation,research and extension,Academic and Administrative governance introduced by the department

Text Book based on Communicative Skill and Activity Based Learning
Use of ICT Tools in Classrooms / Task Based Activities
Experiments and Assessments with reference to Workplace Communication

11. Details of student support mechanism (last 3 academic years).
 - a. Soft skill Development - Nil
 - b. Coding Skill Development -Nil
 - c. Learning beyond the curriculum - Nil
 - d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)
 - **Participation of students in events inside and outside the college is shown**
 - English Proficiency Club is organized by the department to enhance the language proficiency of the students
 - e. Placement - Nil
 - f. Higher studies - Nil
 - g. Coaching for competitive examinations – Not available
 - h. Innovation and Entrepreneurship and usage of TBI - Nil
 - i. Internship - Nil
12. Efforts made by the Department for tracking the holistic progression of the student (20-21)
 - **Remedial classes and participation of students in Scientium is shown here.**
13. R & D (Year-wise details for last 3 years)
 - a. Publications (SCI/SCOPUS/Others): Academic Year 2018-2019 (5 Paper Publications) Academic Year 2019-2020 (31 Paper Publications) Academic Year 2020-2021 (8 Paper Publications)
 - Publications in indexed journals seems to be very tough as there are very few journals in their area
 - b. Student projects converted into publications : NA
 - c. Patents Applied (Through KEC) : NA
 - Published :
 - Granted :
 - d. Funded R & D projects : Nil
 - e. Utilization of R & D facility: Nil
 - f. Centre of Excellence : Nil
 - g. FDPs organized : Sponsored – NIL
Self-supported - NIL

h. Faculty participated in FDPs/STTPs : Academic Year 2018-2019 (32)

Academic Year 2019-2020 (47)

Academic Year 2020-2021 (92)

i. Workshops/conferences organized: Institutional- Workshop - 2018- 2019 (4)

2019-2020 (NIL)

2020-2021 (NIL)

National - Workshop 2018-2019 (2)

2019-2020 (NIL)

2020-2021 (1)

International- Conference 2018-2019 (1)

2019-2020 (NIL)

2020-2021 (NIL)

j. Any other significant activity, Please mention: NIL

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established : Nil

b. Consultancy works done for industry/Organization : Nil

c. Industry executive training programmes organized : Nil

d. Any other significant activity, Please mention : Nil

15. List of Equipment / Instrument not in working condition (September 2021)

Sl.No	Name of the laboratory	Name of the Equipment / Instrument not in working condition	Reason for not working
1	Communication Skills Laboratory	Lenovo (R) Think Centre M7ie Intel (R) Core (TM) i3-2120 CPU@3.30GHz, 4GB RAM, 500 GD HDD, LED 18.5 wide screen Monitor, Mouse, Keyboard.	SMPS & Hard disk problem in 2 systems
2	Communication Skills Laboratory	HP Compaq DX 7400 intel core duo E6550 @2.33 GHz 4MBL 2 cache memory 333 MHz,FSB,Q33 Express chipset 1GB DDR2,160GB SATA HDD 15" TFT Monitor, keyboard optical mouse.	Hard disk problem in 1 system
3	Communication Skills Laboratory	Dot Matrix printer – 132column 24 pin - Wipro	1 Printer Old printer Not working

16. Name of the Equipment / Instrument / software not available as per curriculum (R2020)
(September 2021)

All required equipment and software are available as per the curriculum R2020

17. Licensed Software Details: (September 2021)

Orell Digital language lab- One teacher console with 36 student consoles is available in communication skills laboratory

18. Infrastructure facility in the Department (September 2021)

Sufficient infrastructure facilities are available in the department

19. Augmentation of infrastructure facilities during the last 5 years NIL

20. Development plan / infrastructure facilities for next 5 years

It is planned to have a School of English and foreign language

21. Non conformities listed in the last IQAC audit and its action-taken report NIL

22. SWOT(C) analysis of the Department (September 2021)

Strength	Weakness
<ol style="list-style-type: none">1. The English Department has put in place the state of the art curricular framework, based on international standards, which confirms to CEFR (Common European Framework of Reference) language acquisition levels under Regulations - 2018 and 2020.2. An internationally acclaimed book in 2 Volumes, (Interchange Level 2 & Interchange 3) written by world renowned English Language Teaching expert, Prof. Jack. C. Richards has been prescribed for Semester – I & II of all first Year B.E / B. Tech Programmes (18EGT11 – English for Communication – I, 18EGT21 – English for Communication -II)3. The previous grammar and primarily reading	<ol style="list-style-type: none">1. The R&D and publication need to be improved, especially the publication of quality research articles in Scopus, SCI and Web of science based journals.2. Special attention also is needed in identifying consultancy initiatives and in organizing special training programmes for external faculty.3. Access to subscribed journals and major research publications by the members of faculty and scholars pursuing research in the department needs further boost.4. There are few agencies that provide financial support or sponsorship of

and Writing syllabus has been replaced with a totally new, activity based learner centric syllabus with primary focus on speaking and listening skills and participatory interactive classroom activities for the learning of English.

4. Reading and writing assignments have also been given adequate importance in the new schema. Listening activities are done in the classroom using Bluetooth speakers and audio tracks uploaded in the mobile Phones of the teachers handling the classes.
5. Individual speaking activities as well as group activities on speaking have been integrated into the classroom schedules.
6. Teachers were adequately trained to handle new syllabus and curriculum through training programmes conducted by external and internal experts. More importantly, the concept of demo teaching was put in practice, wherein teachers did demo teaching of each unit in the presence of the peers and colleagues before handling classes for students.
7. Similarly, the language laboratory programme which was being offered in the 3rd year for most courses has been integrated into 2nd year curriculum for all B. E / B. Tech programmes under the course title 18EGL31 - English for Workplace Communication. This Course has a bi - cameral arrangement with certain language learning activities done using computers and other components coming under activity based learning. It mainly focuses on job-oriented skills for effective placement. This course is offered also for MSC and MCA students.
8. The Department also conducts a well structured placement training programme under the elective code 18GEL51 and 18GEL61, Professional Skills Training – I and Professional Skills Training – II meant for students of 3rd year B.E / B. Tech., and M.Sc., MCA., and

programmes by the department.

B.Sc., students appearing for placement. This training provides exposure on verbal aptitude skills, reading and writing skills, speaking skills and mock interviews techniques. The training is imparted to enable third year students to get ready for performing well in campus interviews.

9. All the aforementioned programmes have been fine-tuned with proper selection of standard teaching materials, culled from the inputs gathered from the Placement cell and Training division. Teaching methods and adequate levels of orientation and training to teachers with inbuilt feedback mechanisms are structured at getting proper feedback from stakeholders for remedial action.
10. Remedial Classes are periodically conducted for students having difficulties manifested in Continuous Assessment Tests. These remedial classes have been designed well to overcome the difficulties of the students.
11. The faculty members have been doing well in publishing papers in conferences, sending proposals and participating in conference.

Papers	2018 - 2019	2019- 2020	2020- 2021
Conference Papers	34	13	05
Project proposals sent	01	03	06
International Conference Participation	34	10	07

Opportunities	Challenges
<ol style="list-style-type: none"> 1. Identifying avenues and collaborative work with leading ELT establishments like EFLU Hyderabad and British Council will pave the way for professional development of faculty members. 2. Exploring the possibility of visiting centers of excellence in ELT and Applied Linguistics in India and abroad remains unfinished Expanding the vision of the institution entails transforming the Department of English into the School of English and Foreign Languages. 	<ol style="list-style-type: none"> 1. Students are admitted from the rural, local background and also mostly first graduates. Making them on par with the city-based students in terms of communicative proficiency is the biggest challenge for the department.

Details to be filled by Audit Team

23. Outcome of the meeting with faculty

- The Department to be enhanced with Foreign Language Faculty
- Rescheduling of Course Delivery of PST Course
- Lack of Journals for publications

24. Outcome of the meeting with Students

- Students expect more hours.
- Microphone may be provided for their speaking activities.
- One Class student may be asked to give presentation to other class students.

25. Outcome of the meeting with Non-Teaching Staff

- Training in Networking is required.
- Relocation of one Non-Teaching may be considered.

26. Observation by the Audit Team

In First years it is found that only the curriculum/syllabus based teaching / learning is happening. EPC club is available for participation inside the college. Students may be permitted to participate in outside events.

INTERNAL AUDITOR 1

R. SOMA SUNDARAM

L
25/4/21

INTERNAL AUDITOR 2

Dr. N.SHANTHI
PROFESSOR AND HEAD
DEPT OF COMPUTER SCIENCE & ENGG
KONGU ENGINEERING COLLEGE
THOIPPUPALAYAM (Po)
PERUNDURAI (TK), ERODE - 638 060

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Mathematics

2. Programme & Branch (UG and PG):

3. Date of Audit: 21.9.2021

4. Name of the Auditors:

Internal Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.P.Balasubramanie Professor & Registrar Department of Applied Science - PG Kongu Engineering College Mobile: 9443942365	Dr.A.Tamilarasi Professor Department of MCA Kongu Engineering College Mobile: 9443742212

5. Course availability based on Specialized area (as per 2020R)

Data given in the format is verified

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

1:15

ii) Competency level

Verified

7. Availability of Non-teaching staff

Adequate

8. Emerging areas identified and its Global relevance

Emerging areas are identified which are relevant to the application of mathematics.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas,

Employability based courses

Available

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- ✓ Choice Based credit system
- ✓ Integrated theory cum practical courses introduced in the curriculum to understand theory better.
- ✓ Lecture Videos are also available for student's reference.
- ✓ GATE syllabus was incorporated in the curriculum to make the students to prepare for entrance exams of their higher studies
- ✓ 20 faculty members are with Ph.D degree, and 12 members are Anna University approved supervisors.
- ✓ New elective courses are included in the curriculum based on the growing needs.
- ✓ Four faculty members are assigned by institution, as Exam section in charge, controller of examinations, NSS programme officer, Id card.

11. Details of student support mechanism

a. Soft skill Development

NIL

b. Coding Skill Development

NIL

c. Learning beyond the curriculum

Aptitude training were given to students after the working hours

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

Most of the first year students participated in the events conducted during Srinivasa Ramanujan Mathematics club and science club every year.

e. Placement NA

f. Higher studies NA

g. Coaching for competitive examinations

One coaching class for UPSC conducted for the benefit of students

h. Innovation and Entrepreneurship and usage of TBI NA

i. Internship NA

12. Efforts made by the Department for tracking the holistic progression of the student

- ✓ Feedback from students collected to enhance teaching process.
- ✓ Course monitoring meeting was conducted to point out the grievances if any

- ✓ Weaker students are identified and given counseling for improvement

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Academic year: 2018 – 19 : 08

Academic year: 2019 – 20 : 25

Academic year: 2020 – 21 : 27

Verified.

b. Student projects converted into publications: NA

c. Patents

Published -2 and granted- Nil

d. Funded R & D projects

1 completed (UGC- Minor Research project)

e. Utilization of R & D facility: Data submitted by the department is irrelevant.

f. Centre of Excellence NIL

g. FDPs organized (Academic year 2018-2021): Sponsored: 3; Self supporting-16
Verified

h. Faculty participated in FDPs/STTPs Verified - Good

i. Workshops/conferences organized : No. of programs organized: 3

j. Any other significant activity

- ✓ Few faculty members has delivered online Guest lecture outside KEC
- ✓ Rs. 66,342 was generated through IIPC training.
- ✓ 13 online workshops were conducted in the academic year 2020-21

14. Industry Linkage Activities (Last 3 years)
a. Sponsored labs established NIL

b. Consultancy works done for industry/Organization NIL

c. Industry executive training programmes organized NIL

d. Any other significant activity, Please mention -

15. List of Equipment / Instrument not in working condition NIL

16. Name of the Equipment / Instrument / software not available as per curriculum : NIL

17. Licensed Software Details: NA

18. Infrastructure facility in the Department
Sufficient

19. Augmentation of infrastructure facilities during the last 5 years

105 computers are upgraded with latest configuration
16 digital boards are available for online teaching

20. Development plan / infrastructure facilities for next 5 years -

21. Non conformities listed in the last IQAC audit and its action-taken report

NIL

22. SWOT analysis of the Department Available

23. Observation by the Audit Team

- ✓ All the relevant documents are verified
- ✓ Faculty members are sufficient to meet the norms of AICTE, and infrastructure, software availability are good
- ✓ Number of faculty members with Ph.D qualification is good.
- ✓ The new faculty members are given support and guidance from the department.
- ✓ Faculty participation in international conferences is very less.
- ✓ 12 faculty members are approved supervisors of Anna University and the research scholars doing research in mathematics research centre is less
- ✓ No. of R&D project is less and the number of SCI/Scopus papers published are less
- ✓ Industry linkage activities are to be improved

- ✓ Learning beyond the curriculum may be encouraged.
- ✓ The faculty members teach the basic concepts in depth, and discuss about the mathematics topics that are correlated with their core subjects
- ✓ There are lot of good models are available in the department. But there is no separate place to display it.
- ✓ Faculty members has to attract more number of research scholars.

P. Devaraj
21/9/21
INTERNAL AUDITOR

Dr. P. Devaraj (Signature)

Bamalai
21/9/2021
INTERNAL AUDITOR
(Dr. A. TAMILARASAI)

24. Outcome of meeting with faculty

- All the faculty members are happy and satisfied with their work.
- Presenting papers in international conferences is less.
- Publication of Journals in SCI /Scopus indexed journal is less.
- Faculty members demanding the yearly increments
- Updating the latest technology is needed for faculty members

25. Outcome of the meeting with Students

- In general all the students are happy and satisfied
- Conventional way of teaching may be changed by Innovative teaching methods
- Not knowing the real application of Mathematics in their domain.
- Competitive examination/GATE/NPTEL/SWAYAM participation is not encouraging

26. Outcome of meeting with Non Teaching faculty

Skill up gradation of the faculty members has to be improved

They are expecting salary annual increment.

1. P. Devaraj [9/21]
Dr. P. Devaraj (MANAGER)
2. J. Samuels
AUDITORS (C.R.A.TAMILNADU)

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638060

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Physics
2. Programme & Branch (UG and PG): NA
3. Date of Audit: 18.9.2021
4. Name of the Auditors:

Internal Auditor - 1 (Name, Designation & Affiliation)	Internal Auditor - 2 (Name, Designation & Department)
Dr. N. Senthilnathan Professor in charge - Sports Department of Electrical and Electronics Engineering, Kongu Engineering College.	Dr.R.Rajasekar Professor & Head Department of Mechanical Engineering Kongu Engineering College.

5. Course availability based on Specialized area (as per 2020R)
 - Suggested to upgrade syllabus content with Group 2, TNPSC, UPSC exam portions
6. Availability of Faculty based on Specialized area(September 2021)
 - i) Faculty – student Ratio: NA as a individual department
 - Remarks: Faculty Requirement – 2 (current) + 1 (after May 2022)
 - ii) Competency level: 16 faculty – 8 different specializations
7. Availability of Non-teaching staff : 03, A Separate DEO may be appointed to the department.
8. Emerging areas identified and its Global relevance: Apart from Solar Energy Systems, other areas identified by the Department are usual. More emphasis can be provided on pitching into new areas.
9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses: Appropriate
10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Nil
11. Details of student support mechanism (last 3 academic years).
 - a. Soft skill Development: NA
 - b. Coding Skill Development: NA
 - c. Learning beyond the curriculum : NA
 - d. Learning beyond the class (Participation in co-curricular and extra-curricular activities) : NA
 - e. Placement: NA

- f. Higher studies: NA
- g. Coaching for competitive examinations: NA
- h. Innovation and Entrepreneurship and usage of TBI: NA
- i. Internship: NA

12. Efforts made by the Department for tracking the holistic progression of the student (20-21) : NA

13. R & D (Year-wise details for last 3 years)

- a. Publications (SCI/SCOPUS/Others) :
Remarks:
 - Academic Year (2020-21) - Publications (8), Proposals communicated: Project (4) & Seminar (3) needs improvement.
 - Since, total faculty strength is 16 (11 Doctorates) – Individual faculty contribution in publications & submission of proposals is minimal. Needs more improvement.
- b. Student projects converted into publications: NA
- c. Patents: Needs improvement
- d. Funded R & D projects: 01 (Minor project). The number of quality proposals communicated should be increased as a preliminary action.
- e. Utilization of R & D facility: Thin film technology laboratory is utilized by internal & external researchers.
- f. Centre of Excellence: Nil
- g. FDPs organized : Nil
- h. Faculty participated in FDPs/STTPs: Good volume (2020-21)
- i. Workshops/conferences organized: 05 (suggested to extent the conference to scopus indexed proceedings or publications)
- j. Any other significant activity, Please mention: Nil

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established : Nil
- b. Consultancy works done for industry/Organization : No recent activities (2020-21)
- c. Industry executive training programmes organized : NA
- d. Any other significant activity, Please mention : NA

15. List of Equipment / Instrument not in working condition (September 2021)

Remarks: 08 instruments – minor problems

16. Name of the Equipment / Instrument / software not available as per curriculum (R2020) (September 2021): Adequate

17. Licensed Software Details: (September 2021): NA

18. Infrastructure facility in the Department(September 2021)

Remarks:

- 02 Computers may be replaced (2 old systems from TBI)
- 01 printer additionally required
- Rest are appropriate.

19. Augmentation of infrastructure facilities during the last 5 years - Nil

20. Development plan / infrastructure facilities for next 5 years - Need a Clear Plan

21. Non conformities listed in the last IQAC audit and its action-taken report - In Place

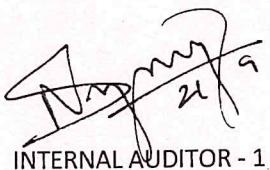
22. SWOT analysis of the Department(September 2021)- In Place but need small modification (Threats)

23. Observation by the Audit Team

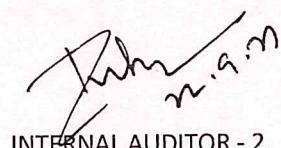
In total the overall performance of the department is good. Still there are many things to improve like, Teaching Learning, Research, consultancy and Laboratory facilities.

Immediate Action Required:

- i) Latest topics to be taught not to be given as seminar,
- ii) In online mode Laboratory taught with PPT which is not appropriate need to be video presentation,
- iii) Similarity between school syllabus and our curriculum(Lab) need to be checked.
- iv) Research performance of individual faculty needs to be improved.
- v) Faculty can get aligned with core engineering faculty for joint student projects and publications
- vi) Laboratory facilities should improved so that some consultancy works may be taken.



INTERNAL AUDITOR - 1



INTERNAL AUDITOR - 2

24. Outcome of meeting with faculty

Dr. P. Malarkodi:

- Smart classes - power point
- First year students can be mingled with other years right from beginning.
- Faculty can collaborate with engineering faculty (Research activities)

Dr. N. Srinivasan

- Few characterization facilities

Ms. D. Shobana

- Implement activity based learning
- Training for junior faculty on Seminar & Project proposals

25. Outcome of the meeting with Students

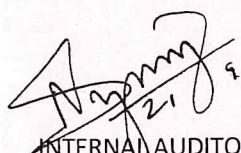
- Dept allied syllabus - helped students
- Syllabus content less compared to school. However, advanced physics studied in I & II semesters.

Teaching & Learning:

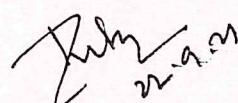
- Syllabus content: Given as seminar not taught again
- Small lag - relating concept with applications.
- Technology can be related with base history
- U – 5: Bio, Nano materials: Relate with end applications. List the materials and applications related to EEE & E&I and go to basics.
- Laboratory classes – virtual video presentation will be helpful
- 20% replicated in I & II semesters compared to schools (simple & torsional pendulum, youngs modulus).
- Minor discrepancies: II semester laboratory class demonstration - EEE – PPT, EIE - video presentation

26. Outcome of meeting with Non-Teaching Staff

- Standard equipments- minor modifications can be made
- Bus fees can be made free
- Undergone training programme in last semester.



INTERNAL AUDITOR - 1



INTERNAL AUDITOR - 2

KONGU ENGINEERING COLLEGE
PERUNDURAI, ERODE – 638012
ACADEMIC AUDIT – 2020-21
(Observations by Audit Team)

1. Name of the Department: Chemistry
2. Programme & Branch (UG and PG): B.E/ B.Tech & All Branches
3. Date of Audit: 21.09.2021
4. Name of the Auditors:

Auditor 1 (Name, Designation & Affiliation)	Auditor 2 (Name, Designation & Department)
Dr.R. Baskar CCO- Alumni and Professor/FT Kongu Engg. College Perundurai, Erode	Dr.K.Senthilkumar Associate Professor/Chemical Engg. Kongu Engg. College Perundurai, Erode

5. Course availability based on Specialized area (as per 2020R)
 - ❖ The following courses are available based on specialized area.
 - ❖ Besides, separate courses are introduced related to chemistry in the second semester for various branches in engineering as per their needs.

Sl.no	Programme	Course Code	Title
1.	ALL BE/ B.Tech	20CYT11	APPLIED CHEMISTRY
2.	ALL BE/ B.Tech	20PHL11	PHYSICAL SCIENCES LABORATORY I
3.	ALL BE/ B.Tech	20PHL20	PHYSICAL SCIENCES LABORATORY II
4.	ALL BE/ B.Tech	20MNT31	ENVIRONMENTAL SCIENCE
5.	ALL BE/ B.Tech	20CYO02	CHEMISTRY OF COSMETICS IN DAILY LIFE
6.	ALL BE/ B.Tech	20CYO04	CHEMISTRY CONCEPTS FOR COMPETITIVE EXAMINATIONS
7.	ALL BE/ B.Tech	20CYO06	CHEMISTRY OF NUTRITION FOR WOMEN HEALTH

6. Availability of Faculty based on Specialized area

- i) Faculty – Student Ratio :

UG/PG/First year	No. of faculty required as per AICTE norms	Available	FSR
1620	108	108	1:15

- ii) Competency level

Faculty members are having different competency levels are Environmental Chemistry, Catalysis, Environmental Chemistry, Nano Materials, Wastewater Treatment, batteries, etc.



7. Availability of Non-teaching staff

Three members of non-teaching staff are available (found Adequate).

8. Emerging areas identified and its Global relevance

The emerging areas identified are Environmental Chemistry, Catalysis, Bio-inorganic Chemistry, Synthetic Organic Chemistry, Nano chemistry, Battery applications, Corrosion Science. Worldwide lot of research is being carried out in this frontier fields.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

Separate courses related to chemistry in the second semester for various branches in engineering as per their needs are included in the curriculum.

Few open elective courses are interdisciplinary

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- E-content developed by faculty (verified "water technology " developed by Dr. Manju Rani)
- Few Videos covering syllabus of the course 20CYT11 applied chemistry are uploaded in you tube)
- 20CYT11- Applied chemistry- activity based learning content- Dr.Krishnamoorthy and Dr. Manikandan- verified.
- Rubrics for evaluating lab course (20OHL20)- 4 levels of assessment found in rubrics (Verified Sample student records for allocation of marks based on rubrics)

11. Details of student support mechanism

a. Soft skill Development

Nil

b. Coding Skill Development

Nil

c. Learning beyond the curriculum

A few experiments were additionally provided in lab course (20PHL20) beyond the syllabus (Estimation of HCl, Estimation of Fluoride).

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)



- i. The students are permitting to participate co-curricular and extra-curricular activities like paper presentation, quiz and various competitions etc.
- ii. SCIENTIUM - A National Level Technical Symposium (inter-collegiate) have been conducted for the first year B.E./ B.Tech. students.
- iii. Providing project guidance (knowledge sharing) to the Civil, Chemical and Food technology students

e. Placement

Nil

f. Higher studies

Nil

g. Coaching for competitive examinations

Faculty from chemistry department handling classes for competitive examinations to all B.E/B.Tech students

h. Innovation and Entrepreneurship and usage of TBI

Nil

i. Internship

Nil

12. Efforts made by the Department for tracking the holistic progression of the student

- The students are encouraged to participate co-curricular and extra-curricular activities
- Every year Science day celebration (SCIENTIUM) is being conducted
- Encourage the students to enroll club member for various clubs/ cells from first year onwards
- Special classes for Tamil medium students.
- Failed students are being monitored

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others) Total : 17

SCI: 5+7+0 = 12

SCOPUS: 1+2 +0=3

Others: 2+0+0

b. Student projects converted into publications

Nil

c. Patents

Not filed

d. Funded R & D projects

Four projects with the total grant of Rs. 63.73 lakh received as research grant from funding agencies like DST, UGC, AICTE.

26/

e. Utilization of R & D facility

Research equipment established based on external funding got effectively utilized for the vresearch purposes. As outcome of utilizing R and D facilities, 12 Ph. D. scholars got completed and around 50 papers got published.

f. Centre of Excellence

Not attempted

g. FDPs organized

Three self supported programme are organized.

h. Faculty participated in FDPs/STTPs

Appreciated number of faculty members are participated in FDPs/STTPs.

i. Workshops/conferences organized

Totally 6 programmes were organized (National - 5 and International – 4)

j. Any other significant activity

Faculty members have published 4 books and lab manuals.

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

Nil

b. Consultancy works done for industry/Organization

Completed 3 consultancy works worth of Rs. 23310/-.[Mostly project guidance to other university students]

c. Industry executive training programmes organized

Nil

d. Any other significant activity, Please mention

Organized two day state level online Workshop on Preparation Tips to Success CSIR-NET, GATE & SET Exams in Chemical Science in association with IIPC / KEC

15. List of Equipment / Instrument not in working condition

Sl.No	Name of the laboratory	Name of the Equipment / Instrument not in working condition
1	Chemistry Laboratory	Conductivity Meter
2	Chemistry Laboratory	pH Meter
3	R& D Laboratory	UV Spectrophotometer

✓:

16. Name of the Equipment / Instrument / software not available as per curriculum

Nil

17. Licensed Software Details:

Nil

18. Infrastructure facility in the Department

Adequate infrastructure facilities are available in chemistry department. However, the following facilities may be added.

- (i) Lunch rooms for boys and girls
- (ii) More Toilet facilities for boys and girls

19. Augmentation of infrastructure facilities during the last 5 years

- ❖ Established new chemistry laboratory (3 Nos) and established new R&D lab (Centre for Environmental Research)

20. Development plan / infrastructure facilities for next 5 years

- ❖ Smart class room facilities- LCD projectors may be fixed in class rooms
- ❖ Continue to offer various courses (in terms of non-formal and open elective) required by all engineering programmes
- ❖ To sign MoU with industries for faculty training/industrial visit/ collaboration with industries
- ❖ To establish characterization centre by purchasing equipment like UV, FTIR, SEM with EDAX, etc., which will be helpful in Consultancy and Research.
- ❖ Faculty with specialized areas shall guide final year B.E/ B.Tech. students' interdisciplinary projects.

21. Non conformities listed in the last IQAC audit and its action-taken report

Nil

22. SWOT analysis of the Department

STRENGTH

- Highly qualified and experienced faculty members
- Well established separate lab for R&D activity (Environmental Chemistry)and Department recognized as research centre approved by Anna university
- Completed 3 R&D projects (UGC-2 & DST); ongoing – 1
- 11 Ph.D. holders with 9 Faculty members have got guide approval from Anna University, Chennai to guide Ph.D. scholars
- 12 PhDs are awarded in chemistry research centre
- Published good number of papers in reputed National/ International Journal and Books

WEAKNESS

- Lagging in admission of Full time Ph.D. scholars

81.

- Outside interaction / collaboration with reputed Indian / Foreign universities / Research institutions need to be strengthen
- Consultancy activities need to be improved

OPPORTUNITIES

- Registering full time Ph.D. scholars with fellowship to enhance research

THREADS

- Change in students attitude and their involvement in learning

23. Observation by the Audit Team

OVERALL:

- Department can make an attempt for establishing independent/interdisciplinary center of excellence (along with other Engineering Departments). College may also encourage the department in this direction by providing an initial grant. Such an attempt by department & initiation by college may lead to multiple benefits in future which include: Offering of separate degree /certificate programs, supporting techno-entrepreneurs, engaging quality consultancy works with industry and attracting full time scholars. As department is having quite number of young faculty with Ph.D, such facilities may be useful to enlighten them to be more dynamic in contribution towards attaining the above mentioned out comes.
- Department library can be established in a separate space and more books can be purchased
- A Culture of referring multiple text and reference books for learning and practicing tutorial/open book tests can be inculcated [Which will be a viable route to produce significant numbers of quality engineers if not all]
- LCD projectors are to be installed in class rooms
- Lunch room facilities for the students to be established.
- Considering the number of first year students, toilet facilities in S and H block is not sufficient
- Chemistry faculty can be added as one of the guides/co-guides in the UG/PG projects in the Engineering departments (in the case of common/ relevant fields).
- Department shows a healthy trend in offering some interesting/ useful/ different Open Electives like :
 - 20CYO04 - CHEMISTRY CONCEPTS FOR COMPETITIVE EXAMINATIONS
 - 20CYO06 - CHEMISTRY OF NUTRITION FOR WOMEN HEALTH
 - 20CYO02 - CHEMISTRY OF COSMETICS IN DAILY LIFE
- Collaboration with outside coaching agencies can be made for enriching the delivery of open elective course 20CYO04- Chemistry concepts for competitive examinations.

24. Outcome of meeting with faculty

- Video lectures for the subjects 20CYT11 - Applied Chemistry and 20MNT31 Environmental Science can be prepared and uploaded in YouTube / college portal which will be useful to the first year students (this subject is common to all the first year students)
- Facilities like SEM, TEM, FTIR etc., can be Purchased for chemistry department or established as KEC Central facility. These facilities will be helpful in completion of PhD by faculties,



attract more Ph.D scholars from outside (Full time/ Part time) and also increase in paper publication in reputed/ High impact factor journals

- Repeated Documentation works can be avoided by implementing a suitable mechanism / ERP / Centralized data collecting center
- Around 50% of faculty published papers in journals. There is large scope for improvement in Quality and Quantity of journal publications
- Faculty can attempt towards getting internal funding (seed money)
- More number of proposals for Research Funding can be submitted to External Agencies
- Flexibility in CL permissions (during emergency conditions) can be considered

25. Outcome of the meeting with Students

- Students expressed that they are satisfied with department facilities and teaching-learning processes
- Industrial visits in first year may be helpful
- Providing standard text books to the students is helpful in learning subjects.
- Activity based learning is quite useful. Demonstrations can be made for quite number of titles in the syllabus [Example : Electro plating of Metals]

26. Outcome of meeting with Non-Teaching faculty

- Non-teaching Staff can undergo few training outside to improve their skills [Example : Basic computational skills, Laboratory management , Laboratory Chemicals Handling and safety etc...]

R. DMSL
25/09/2021

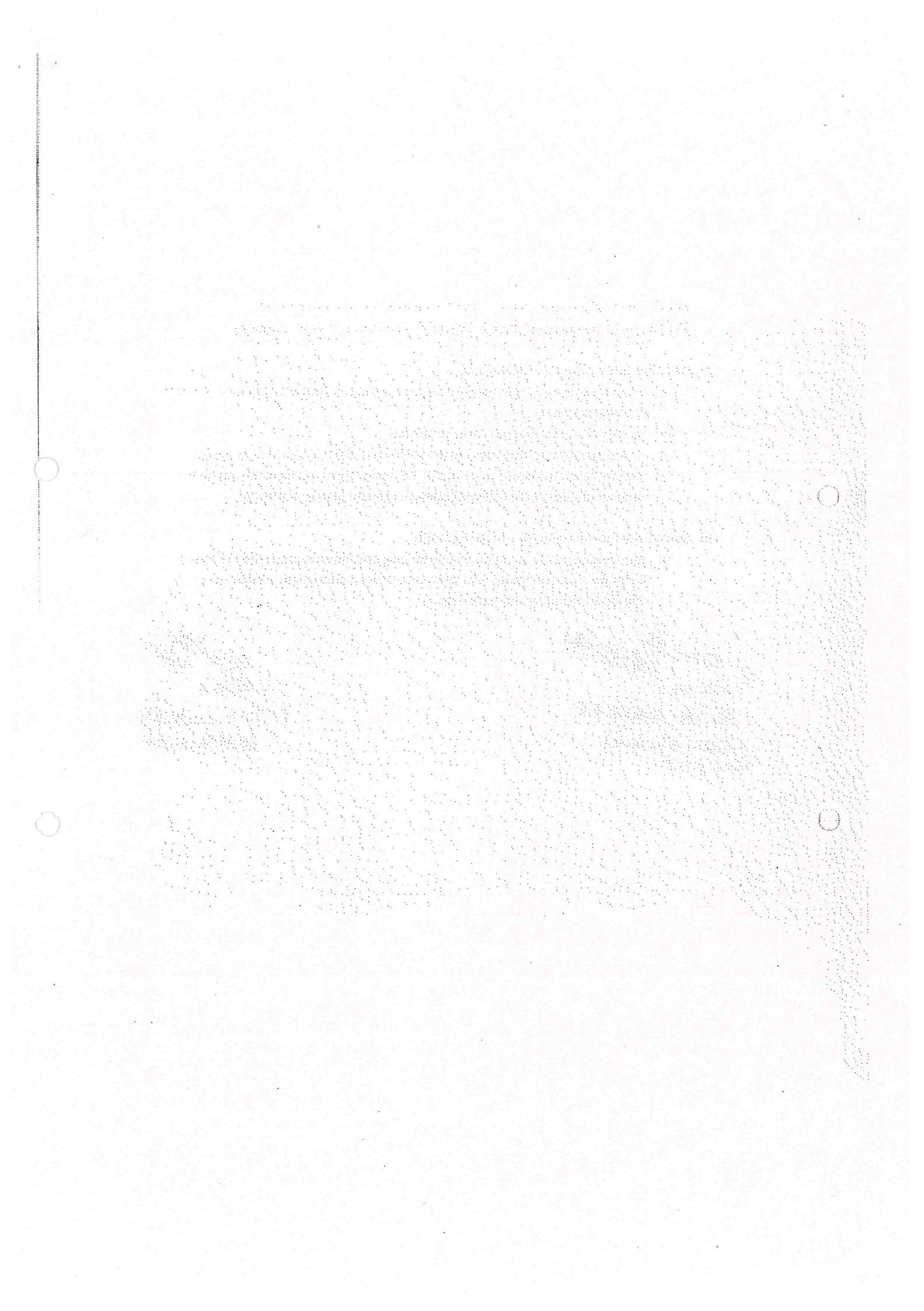
AUDITOR- 1

Dr. R. BASKAR
CCO (Alumni)
Prof / FT

G. S. KUMAR
25/09/21

AUDITOR- 2

(Dr. K. Senthil Kumar
Asp/Chemical)



Academic Audit report_ EIE - reg

Dr.P.Nirmaladevi <nirmaladevi@kongu.ac.in>

Fri 10/15/2021 12:21 PM

To: Principal Kongu Engineering College <principal@kongu.ac.in>

Cc: Ranking <ranking@kongu.ac.in>

1 attachments (43 KB)

Academic audit report_EIE.docx;

Respected sir

Herewith I am attaching the Academic audit report of EIE department conducted on 29.09.21. The external Auditor has prepared his report in a separate format and submitted separately. Hence this report includes only my observations.

Thank You sir,

With Regards,
Dr.P.Nirmaladevi,
Professor,
Department of Electronics and Communication Engineering,
Kongu Engineering College,
Perundurai - 638 060
Mobile No: 9842561234
Phone No: 04294 226533

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: Electronics and Instrumentation Engineering

2. Programme & Branch (UG and PG): BE _ EIE

3. Date of Audit: 29.9.21

4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. Madhumohan. N Associate Professor Department of ECE Amirtha Vishwapeetham Coimbatore - 641004	Dr. P. Nirmala devi Professor, Department of ECE Kongu Engineering College Perundurai

5. Course availability based on Specialized area (as per 2020R)

7 specialized areas have been identified and new courses in Biomedical instrumentation, IoT and wearable devices have been introduced in 2020R

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

Adequate [UG : 1:18 & PG- 1:12]

ii) Competency level

Satisfactory. Faculty have expertise in the identified specialized areas

7. Availability of Non-teaching staff

6 Non teaching staff available and recruitment for DEO and one non teaching staff is completed. All the available staff possess knowledge in their area and able to help the students

8. Emerging areas identified and its Global relevance

4 emerging areas are identified and have been included in 2020R curriculum as electives. These are found to be useful for industry.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

The thrust areas identified are:

- Artificial Intelligence
- IoT
- Robotics
- 3D Printing
- Applied instrumentation and Industry 4.0
- Neuro Imaging data Analysis
- Industry Automation
- Machine learning

The above are some of the subjects including interdisciplinary subjects under emerging thrust areas. There are 6 employability courses identified

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

OBE based curriculum, Professional skills and training, life skill based courses and emphasis for project and internship are introduced.

11. Details of student support mechanism

a. Soft skill Development

12 Programmes (centrally conducted)

b. Coding Skill Development

25 programmes conducted

c. Learning beyond the curriculum

18 Non Formal Courses and 4 NPTEL courses were studied by the students

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

650 students participated in paper and project presentation inside KEC and 735 students outside KEC. Also 192 students took part in Sports activities and won prizes

e. Placement

78% average placement for the last three years verified

f. Higher studies

Around 21 students have gone for higher studies and 6 abroad universities

- g. Coaching for competitive examinations
Centrally organized by HEC , KEC programmes. But the no. of students participation from EIE is only three in the last three years. This may be improved
- h. Innovation and Entrepreneurship and usage of TBI
Students participation in Entrepreneurship Camp was good. Motivation and participation for innovation contests to be improved
- i. Internship

61 students have gone for internship from 2018-19 to 2020-21

12. Efforts made by the Department for tracking the holistic progression of the student

Curriculum, Yoga and Value based education, foreign language coaching, new equipments in Lab supports for the holistic development of the students in the department

13. R & D (Yearwise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Totally 140 publications made in SCI/SCOPUS and WOS journals

b. Student projects converted into publications

38 projects are published as papers

c. Patents

No Patents got/applied so far

d. Funded R & D projects

Two ongoing projects worth Rs. 3,73,000/- is verified

Motivation for improving the funding is required. Faculty needs assistance is getting contacts with the industry and central government laboratories

e. Utilization of R & D facility

Some specialized labs have the research facility available. Latest softwares along with relevant equipment is available in laboratories. Publications have been done in these areas. Utilization to be improved for enhancing the R&D

f. Centre of Excellence

No COE has been established so far

g. FDPs organized

One sponsored and 4 self supported FDPs were completed in the last 3 years

- h. Faculty participated in FDPs/STTPs
All faculty have attended in FDPs/ STTPs
- i. Workshops/conferences organized
7 sponsored seminars were conducted by the department in the last three years
- j. Any other significant activity

Totally 10 PhD scholars have completed under the EIE research centre.

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established
No sponsored labs in the department
- b. Consultancy works done for industry/Organization
One consultancy work completed in 2019-20
- c. Industry executive training programmes organized
No such programmed organized
- d. Any other significant activity, Please mention
Activities with MO companies : (i) Internship and placement activity (ii) Upgradation of lab equipment done

15. List of Equipment / Instrument not in working condition

4 items have been listed under 2 laboratories. Other equipments are working in good condition

16. Name of the Equipment /Instrument/software not available as per curriculum

NIL

17. Licensed Software Details:

Verified

18. Infrastructure facility in the Department

Class room and tutorial halls are adequate. LCD Projectors 6Nos. available. Sufficient no. of PCs are also available. Request for additional PCs with latest configuration have also been given already.

19. Augmentation of infrastructure facilities during the last 5 years

Labs are augmented with new equipments and softwares in the recent years

20. Development plan / infrastructure facilities for next 5 years

MODROB project is to be completed

Smart classroom facility is to be created

21. Non conformities listed in the last IQAC audit and its action-taken report

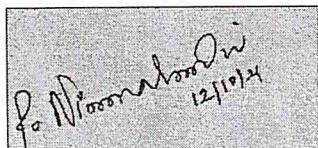
checked and verified

22. SWOT analysis of the Department

SWOT analysis of the department was provided and discussion done

23. Observation by the Audit Team

- Infrastructure facilities are good
- Laboratory maintenance is good
- The rearrangement of the laboratories is to be done with the newly sanctioned MODROB grant.
- Proposal for latest configuration PCs required and proposals sent
- Research facilities are available with latest equipments and softwares. More publications to be done using the facilities
- Consultancy activities needs to be strengthened
- Motivation for students for high education needs improvement
- Patent activities need improvement
- Core placement needs to be improved



INTERNAL AUDITOR

EXTERNAL AUDITOR

23. Outcome of meeting with students ("Dialogue" between student and professor)

Introducing the classmate project "Student-Professor Meeting". It's a new initiative.

Introducing our new classmate "DIALOGUE" in

24. Outcome of meeting with faculty

Introducing the new project "DIALOGUE" to

the professor and the professor's research.

Introducing the new project "DIALOGUE"

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Introducing the new project "DIALOGUE"

to the professor and the professor's research.

25. Outcome of the meeting with Students

RESULTS

ACHIEVEMENTS

26. Outcome of meeting with Non Teaching faculty

part of Elec. & Instrumentation Engineering

Nian N (ECE) <n_madhumohan@cb.amrita.edu>

, 14/2021 10:52 AM

ncipal Kongu Engineering College <principal@kongu.ac.in>

S.Vijaya Chitra <svijayachitra@kongu.ac.in>; Dr.P.Nirmaladevi <nirmaladevi@kongu.ac.in>

ne people who received this message don't often get email from n_madhumohan@cb.amrita.edu. [Learn
this is important](#)

E / PI & R / Audit / 2021 / 15

ir,-

Please find attached the final report of the audit of the Department of Electronics and Instrumentation Engineering, of your institution, conducted on Sep. 29, 2021. Prof. Nirmala Devi P, of the Dept of ECE had invited me for the audit.

1. As I did not have a copy of the specific report format, I have prepared it in a generic manner, with observations and our recommendations of the major points – the Teaching – Learning Process, the Infrastructure, Research and the human resources available in the department. Prof. Nirmala Devi would be submitting her comments separately as well (they have been included as Annexure – 1 in this report).
2. I hope you will find the report in order and useful to you, in taking the Department forward.
3. I would like to thank you for having entrusted this important responsibility to me and I hope I have delivered to your satisfaction.
4. In case, there is anything that I can do to help the department, please do not hesitate to contact me. I will be happy to help in any way that I can.

I would be grateful for a reply, acknowledging receipt of the report.

Thank you once again,

Mohan



er : The information transmitted in this email, including attachments, is intended only for the) or entity to which it is addressed and may contain confidential and/or privileged material. new, retransmission, dissemination or other use of, or taking of any action in reliance upon this ion by persons or entities other than the intended recipient is prohibited. Any views expressed essage are those of the individual sender and may not necessarily reflect the views of Amrita

Vishwa Vidyapeetham. If you received this in error, please contact the sender and destroy any copies ,
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subiect@vishwavidyapeetham.ac.in (PQF) 11/10/2010

Message ID: 107044

This message contains neither viruses nor other malicious code.

Please do not forward this message to others without first reading it yourself.

This message was sent to you by a member of the Vishwa Vidyapeetham staff.

Date: 10/10/2010 10:53 AM

Dear Sir/Madam, I am writing to you in regards to my application for admission to the Bachelor of Science in Information Technology at the Vishwa Vidyapeetham. I have attached my application form and supporting documents.

I am currently working as a software developer at a local company. I have been working there for over 5 years now. I am currently working on a project related to a mobile application for a local business. I am currently looking for a job in the field of IT and I am interested in pursuing a degree in Information Technology to further my career.

I am enclosing my application for your consideration. I would like to thank you for your time and effort in reviewing my application. I hope to hear from you soon. Thank you for your time and effort.

Sincerely, [Signature]

[Signature]

I am enclosing my application for your consideration. I would like to thank you for your time and effort in reviewing my application. I hope to hear from you soon. Thank you for your time and effort.

Report of the Audit
of the
Department of Electronics and Instrumentation Engineering,
conducted on September 29, 2021

Submitted by

Dr. P. Nirmala Devi (Internal Auditor)

Professor,

Department of Electronics and Communication Engineering,
Kongu Engineering College

&

Dr. Madhu Mohan N. (External Auditor)

Associate Professor,

Department of Electronics and Communication Engineering,
Amrita Vishwa Vidyapeetham,
Coimbatore – 641004

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Audit Process

Following a request from Prof. U. S. Ragupathy of the Department of Electronics and Instrumentation Engineering at the Kongu Engineering College (KEC), Perundurai, I received an invitation from the Principal, KEC, to serve as an External Auditor of the department. The audit was expected to cover the academic programmes under the department, the faculty, the students, the non-teaching staff, the laboratories, the quality of research in the department, the evaluation and assessment policies and other academic procedures. The Audit was scheduled on September 29, 2021, from 0900 hrs to 1630 hrs. The audit team consisted of

- | | |
|--|------------------|
| 1. Prof. P. Nirmala Devi, Dept of Elec. & Commn. Engineering, KEC - | Internal Auditor |
| 2. Dr. N. Madhu Mohan, Dept of Elec. & Commn, Engineering,
Amrita School of Engineering, Coimbatore | External Auditor |

The process consisted of detailed interaction with the various stakeholders as well as physical verification of the documents and other evidence of the procedures and processes in place.

Meeting with the HoD

The audit began with a meeting with the Head of the Department, Dr. S. Vijayachitra, who briefed the team on the department. It was also attended by senior professors Dr. R. Subasri and Dr. U. S. Ragupathy. The following points were made:

1. The department was taking up such an audit for the first time.
2. The department was established in 1998.
3. It runs a BTech program in Electronics and Instrumentation and a PG program in Control and Instrumentation.
4. It has a sanctioned intake of 120 for the BTech program.
5. The department has 26 faculty members, of which 3 are Professors, 8 Associate Professors, 3 Assistant Professor (Sel. Gr.) and 12 Assistant Professors of other cadre.
6. 14 faculty members are PhD holders, while others have registered for a PhD.
7. Two faculty members have obtained their PhD in Instrumentation or associated areas.
8. All of them have an undergraduate background in Electrical (EEE) or Electronics (ECE) Engineering.
9. Seven are approved supervisors of the University, guiding 18 PhD scholars.
10. A stipend of Rs 10,000/- per month is paid to full-time research scholars.
11. The faculty are provided incentives for publishing in SCI / SCOPUS / Web of Science indexed journals.
12. The teaching load was roughly allocated as: Professors – 1 Theory course with administrative load and either 1 Theory and 2 lab Courses or 2 Theory and 1 lab Course for all other cadre, taking a compassionate view of individual circumstances.

13. The minimum period of service of a faculty in the department was seven years.
14. The last resignation of a faculty was in May 2021 – an Assoc. Professor left, citing family reasons.
15. There is no exit policy / interview in place. No department of Human Resources.
16. Feedback from the parents indicate that they would like extra value-added courses, which will better placement prospects.
17. Good placement record.
18. 71 out of eligible 90 already placed (eligibility is nil arrears).
19. Typical recruiters are the software majors. Core companies like Robert Bosch and Vedaanta are also regulars.
20. August to October is the usual recruitment season.
21. Placement training in the form of Soft Skills sessions are given, along with training in programming like C, Python, Data Structures and Java.

Lab Visits

The meeting with the Head of the Department was followed by a visit to the laboratories. The audit team was accompanied by the HoD and other faculty members, who were not otherwise engaged.

1. Advanced Instrumentation Laboratory:
 - Primarily meant as an undergraduate lab, also catering to the course Control and Simulation Laboratory for the PG students.
 - It is also used for the project work of the BE students
 - There are two faculties-in-charge and 1 technical assistant
 - Neat, spacious and uncluttered.
 - Equipped with PLCs from ABB, Omron and Siemens; Proximity and Capacitive Sensors as well as relays, Oscilloscopes, Function Generators and Power supplies.
2. Sensors Laboratory
 - Courses conducted here are the III Sem Linear Circuits Lab and the Industrial Automation Lab for the V Sem.
 - Equipped with RTDs, Thermocouples, Hall Effect Sensors, etc.
3. Computer Centre
 - 36 computers, with i3 and i5 processors and 1 server
 - MatLab R15 for Control and Simulation Laboratory
 - Software for DSP and VI labs
 - Facility for conducting Data Structures Lab

- Used for projects
 - 1 Gbps Internet link
 - Lab was set up in 2001 and last upgrade was in 2018-2019
 - Has an annual budget of approx. INR 4.2 lakhs.
 - Kept open from 0830 to 1900hrs.
4. Distributed Control Systems Laboratory
- Could not interact with the staff as the DCS lab was used for arranging all the course-related files.
 - Appeared a bit congested with all the equipment
 - Spent quite a bit of time in the DCS lab going over the course files and discussing with the faculty.
5. Measurements and Instrumentation Laboratory
- Visited after lunch.
 - A laboratory session was going on.
 - Interacted with two of the students.
 - Checked the observation / record notebooks of the students.
6. Biomedical Instrumentation Laboratory
- A part of a larger laboratory
 - A number of generic biomedical equipment like SpO_2 meter, BP meter, etc. available in the lab.
 - Looked at the experiments being done in the lab

Teaching – Learning Process (TLP)

The time in the DCS lab was spent in going over the records of the various theory and lab courses being offered to the students. Further details and explanations were sought from and provided by the faculty concerned. The data collected, on the TLP for a couple of the courses was analysed and discussed in detail. Ms. R. Subasri and U S Ragupathy helped the audit team in understanding the details.

Interaction with Faculty, Non-Teaching Staff and Students

The external auditor interacted with the students, non-teaching staff and faculty members in the auditorium / seminar room. A representative group of eleven students, with two from the second year and the others from the final year, were present. There were five boys and six girls in the group. The interaction which lasted for about 45 minutes, was brisk. While the students were generally happy and satisfied with the institution and the facilities provided, there were a few interesting points brought out:

1. The choice of electives offered in the course is very limited / nil.
2. While a lot of emphasis is placed on soft-skills related training for placement, there is no such training for core / engineering-related subjects.

3. The timetable for the present post-lockdown classes are very hectic, with more than 6 hours per week, for some subjects.

The interaction with the students had to be cut short as they had to leave by the college buses, which were scheduled to depart at 1630 hrs. This was followed by a meeting with the non-teaching staff, about eight in number. The issues raised by them were as given below:

1. There is no transparent promotion policy for the non-teaching staff. People have been stagnating in the same post / designation for years.
2. There has been no significant improvement in salary conditions.
3. The earlier provision for higher studies has been removed.
4. Exposure provided earlier by permitting them to accompany students on Industrial visits has been taken away.
5. Charges are being levied now for using college transport, which are relatively substantial.

The external auditor also had discussions with the faculty, across cadres. Some of the points raised by them were:

1. Need for increased interaction with industry.
2. Require advise and help for taking up Consultancy.
3. More than teaching, there is too much of clerical work and data entry.
4. The same data is being required in multiple formats, leaving less time for actual teaching and research.
5. Need for senior faculty / Professor Emeritus with connections to industry to help with research and industrial collaboration.
6. Need for training faculty on new subjects – to ensure quality and uniformity. This can be done by senior faculty themselves who might have handled the subject for many years.

The auditors then, proceeded for an interaction with the Principal. They were accompanied by Prof. R. Subasri. The Principal enquired about the initial impressions from the audit as well as outlined some of the initiatives being taken by the Management and Administration of the institution. He also pointed out some of the difficulties faced by them, especially during the pandemic.

The visit ended at 1930 hrs.

Observations

Infrastructure

1. Except perhaps for the DCS Lab, all the laboratories appeared to be very spacious and airy.
2. All laboratories and equipment seemed to be well-maintained.
3. Modern equipment like Digital Storage Oscilloscopes, Arbitrary Waveform Generators and Programmable Power Supplies were not visible in any of the labs visited.
4. Most of the labs seem to be underutilized, at least on paper.
5. There appears to be no clear cut procedure / provision for budget allocation.
6. There seems to be no long term planning or budgeting for the laboratories.
7. No proper records are maintained of the utilization of the various labs. In those labs where utilization registers were produced, the data was from 2017 / 2018.
8. For example, a Spectrum Analyser, costing more than Rs. 1 lakh twenty years ago, has been barely used. There was no evidence of it being utilized for any projects / research.
9. There does not seem to be any policy of asset management or tracking.
10. Purchase records of the various equipment / assets in the laboratories are not being maintained properly, in an organized fashion. In some of the labs visited, the technical staff seemed to be unaware of the procedures and processes in place, with the faculty needing to help them out, in answering the auditors' questions.
11. A proper audit of the resources in the Computer Centre and their utilization needs to be carried out.
12. Logging of entry and usage does not seem to be implemented in any of the labs.
13. No registers for the movement of equipment between labs and for issue of equipment to students, were seen.
14. There does not seem to be any system in place for maintaining some sample records of the students as well as a properly prepared and presented laboratory manual.

Teaching and Learning Process

1. An elaborate system of data entry for the teaching process is in place, with the faculty being required to keep a detailed log of individual lectures.
2. A system of three CA tests, with the best two being chosen for grading, along with a centrally administered Semester examination, with other class tests and assignments, being used for grading the student.
3. Tutorial Sheets are given out, which are also used for evaluation and part of the internal assessment.

4. The OBE system is followed, with each question in every exam / test being mapped to the Course Outcomes and BTL.
5. In one of the courses analysed, ILOs were defined, which were then mapped to the COs. But the number of ILOs seemed to be very large (more than 45) which perhaps defeats the purpose of such mapping.
6. Meticulous records have been maintained of the attainment scores obtained, after every exam. But no attempt seems to have been made to analyse or understand these scores or their significance. For example, in one particular course that was taken up, there was a marked difference in the attainment levels of the two sections for CA1 and CA2, which suddenly disappeared for the Semester examination, where both sections recorded 100% attainment. No attempt was seen to understand the reasons for this remarkable improvement in performance or to determine why one section was consistently being worse than the other.
7. Since the semester examination was being conducted centrally by the Examination Cell, the department had no information on whether any kind of normalization was being done across sections / different tests, before grading, in order to ensure uniformity.
8. There was no evidence of normalization for any of the internal examinations either.
9. Evidence of rubric-based evaluation was provided for only one of the lab courses.
10. While formal feedback is taken from the students after every course and final number given in the form of a percentage, the questions asked seemed to be too broad, to elicit any kind of useful information. No rubric has been provided to determine on how the students are asked to evaluate the questions.
11. The results of the feedback have been filed carefully. No follow-up action seems to have been taken.
12. There is no record of the Course Coordinator analysing and using the comments / feedback from the previous time when the course was offered, in modulating his course plan. This defeats the entire purpose of such feedback. This is particularly relevant for Criterion 7.1 for the NBA Accreditation process.
13. Though each question has been mapped to a BTL as part of the OBE requirements, there has been no effort at determining the overall difficulty level of the question paper / exam. There seems to be no attempt at correlating the performance in an examination with the degree of difficulty of the question paper.
14. No record was provided, of any one-on-one counselling / mentoring sessions with the students.
15. The last step of closing the loop for 360° feedback seems to be missing.
16. Feedback from the students is taken only for assessing the performance of the concerned faculty and not for the courses themselves.
17. No records were shown of the way in which the BoS is constituted or of its deliberations.
18. No evidence was seen either of the way the curriculum was revised or on the basis of which it was done.

19. In the one lab, where we were fortunate to observe a session in progress, we found the students being ill-prepared to attend the lab. The observation book was not properly maintained and the students do not seem to have read the manual before coming to do their experiment.
20. The students were not following proper electrical safety protocols in the laboratory, like wearing improper footwear, loose fitting and flowing clothes, loose hair, etc.
21. In the Biomedical Instrumentation Laboratory, the experiments being conducted seem to have no relevance in so far as demonstrating engineering principles or access to data acquisition is concerned.

Faculty, Non-Teaching Staff and Students

1. Most of the faculty have been with KEC for quite a long time.
2. The faculty, in general, seem to be happy with the conditions of employment at KEC.
3. The teaching load appears appropriate, at least on paper.
4. The research output is low and more worryingly, there are very few SCI-indexed publications. There are no Transactions publications.
5. The culture of publishing for numbers seems to have crept in.
6. The faculty we interacted with have all registered internally with KEC. While this may be good from the perspective of retaining the teachers, I am not sure that it is a healthy trend, both in terms of the career progress of such faculty who would be working in the same department as their mentors / supervisors, as well as in terms of the quality of the research output – in the long run, KEC will need to focus not only on teaching but also on the kind and quality of the research, for which diversity is required.
7. No evidence of collaboration with faculty from other reputed national and international institutions was presented. This lack is likely to have consequences in the future, when such collaborations would be considered essential in ranking the institution. Such relationships cannot be built overnight.
8. While no information has been given / obtained on the ranking / previous performance of the student intake, the limited interaction with the students, indicates a high degree of positivity amongst them, once a certain comfort level has been reached. They seem to be spirited, with their own opinions.
9. No information has been provided on the number of students going in for higher studies or having qualified in the examinations for higher studies, like GATE and GRE. Those numbers would be a better indication of the quality of the teaching – learning process than any marks / grades.
10. The placement process seems to be vibrant with a large number of the students getting placed, with decent pay packages. This could have a negative aspect too, as it would lead to an over-emphasis on placement and less on learning.
11. The conversation with the students seems to indicate that as much importance is not being given to the core engineering aspect of the program as to the development of soft skills required for getting placed.

12. The non-teaching / Lab staff seem to have some genuine grievances, in terms of service conditions and opportunities for growth.
13. Some of them appear to be unfamiliar with the procedures to be followed for maintenance of records pertaining to the facilities in their charge.

Recommendations

Based on our observations listed above and on our perceptions of the same, we would like to offer the following recommendations:

Infrastructure

1. Each lab be asked to generate a plan for the next five years, with a clear vision of where the lab is sought to be positioned at the end of the period and a realistic budget for the activities proposed. The budget is to be thoroughly justified.
2. A proper procedure for gauging the utilization of each laboratory / equipment be put in place. Any further increase in budget will have to be justified on the basis of utilization of already sanctioned / purchased equipment.
3. A regular internal audit – at least, on an annual basis – of resource utilization be carried out.
4. The maintenance of lab equipment be carried out on a regular basis and records of the same to be kept and inspected. This will also increase the trouble-shooting skills of the laboratory technical staff as well as faculty.
5. A similar utilization audit of the classrooms allotted to the department should be carried out.
6. While it is not known how the classrooms are allotted at present, the idea of allotting lecture halls for courses / subjects, rather than to batches of students (first year, second year and so on) can be thought of. This will lead to better utilization of classroom resources.
7. One or two faculty members at the level of Assistant Professor (Sel. Gr.) be given the responsibility of such audits
8. A faculty member at the level of Associate Professor be made the IQAC Coordinator for the department.

Teaching - Learning Process

1. There should be an Academic Coordinator for the department, who should be fairly senior, at the Associate Professor or Assistant Professor (Sel. Gr.) level.
2. While this is a decision that should be taken at the institution level, it is earnestly recommended that the College invest in a good Learning Management System (LMS) and that the department strongly push for it. Going forward, such a software would become essential.

3. There should be a clear and transparent procedure by which a course is rolled out to the students.
 - a. The process should start well before the beginning of the semester (preferably two months), when the faculty offering the course are identified, along with Course Coordinator (CC).
 - b. The CC will obtain the recommendations from the previous batch when the same course was offered and study them.
 - c. With the help of his colleagues offering the course, the CC will first finalise the course plan, adding or modifying material, so as to accommodate the recommendations of the previous batch, if possible.
 - d. A proper lecture plan should be prepared, for about 40 – 45 lecture hours (excluding exam days), including the topics mentioned in the course plan in (c) above.
 - e. The material required for delivering the course as outlined by the lecture plan is to be gathered – this might be notes, videos, online lectures, datasheets, one's own lectures and presentations, homework questions, assignments, tutorial sheets, sample questions, MCQs, etc.
 - f. The CC should then organize an FDP of about two weeks, with about 1 hour each day, just before the beginning of the semester. During this period, the CC should explain in detail, how the course is to be delivered as per the lecture plan. This will be the outline to be followed by the other faculty member(s) offering the same course.
 - g. A schedule of the exams (Class Tests, Assignments, Tutorials, etc – in short, all assessment procedures) is to be prepared and given to the students.
 - h. Except for those exams which are centrally administered by the Examination Cell, it is recommended that all assessment procedures be conducted online or after regular class hours or during a period so designated in the time table, so that regular lectures are not affected.
 - i. Every question is to be mapped to a CO, through an ILO and an appropriate BTL.
 - j. Each question paper / assessment to have a weighted BTL score, which will indicate the degree of difficulty / level of the examination.
 - k. For every written (offline) exam, the CC will have a sheet in the course file containing the following table:

BTL	Score (S_i)	No. of Questions (n_i)	Total Score
Remember	1		$S_i n_i$
Understand	2		
Apply	3		
Analyse	4		
Evaluate	5		
Create	6		
Overall BTL			$\frac{\sum_i S_i n_i}{\sum_i n_i}$

- I. All questions mapped to BTL 4 and above, should be justified.
 - m. The question paper should be such that 40 % of the score should be at BTL 1 or 2, 40 % at level 3 and only a maximum of 20 % should be at the level of 4 and above.
 - n. One of the CAT question papers and the Semester question paper (after the exam is over) should be audited, preferably by a faculty from another department (say, ECE).
 - o. If there are different sections / batches taking the course (with different faculty), the scores are to be normalized across exams as well as faculty, before being finalized.
 - p. The CO attainment after every CAT exam should be determined and carefully analysed by the CC.
 - q. Good practices leading to betterment in performance should be emphasized, while reasons for poor performance should be addressed.
 - r. Any variation in performance between sections / classes should be taken serious note of and steps taken to determine the reasons thereof, including inefficiency / inability of the concerned faculty. It is to be noted that this is not a fault-finding exercise – rather, it should be seen as an opportunity to deliver better results, with necessary corrective action.
 - s. Any action recommended should be followed up by the CC as well as the Head of the Department, and noted in the Course File.
 - t. The details of the meetings should be filed course wise and not semester-wise, as is being done presently. This will make it easier to keep track of the delivery of a course over a period of time, noting its improvements and failures, and the attempts made to improve delivery and to address the problems. This will be of great help when the next revision of the curriculum is taken up.
 - u. The CC / HoD should check at random intervals, the log maintained by individual faculty to see if the course is progressing as per the lecture plan finalized. If it is not, any issues are to be addressed.
 - v. At the end of the course, after the grades are finalized, the Course Committee should meet to discuss the performance of the students in that particular course, in terms of the CO attainment and to analyse the reasons for any lacunae. The Committee will finalise its recommendations and record them in writing, to be handed over to the CC, when the course is offered next. The Committee should also seriously consider the formal and informal feedback provided by the students about the course, and incorporate their suggestions / grievances in its' recommendations.
4. Encourage the faculty to attend regular FDPs being organized by the AICTE on the Swayam platform.
 5. Senior faculty should also be encouraged to organize FDPs on their own, for their own faculty colleagues or on a wider basis.
 6. Bright students could be identified and mentored, either through experiments in the lab or through one-on-one discussions.

7. Laboratory sessions could be streamlined and made more effective, so that the students can make the time spent there more productive.
8. Students should be provided the material for the lab, with instructions on what is to be done, well in advance.
9. Students should be required to come to the lab well prepared, with the circuits analysed, simulated and verified, so that they can easily implement them in the time given.
10. A rigorous viva voce examination should be conducted for each student, to ensure that the experiment has been thoroughly understood.
11. Faculty, Staff and Students should be sensitized about the safety protocols to be followed in the lab, which are to be strictly followed.
12. Every lab is to be equipped with a fire extinguisher and first aid kit. Ideally, the technical staff / faculty should have had some training in providing CPR or at the least, in handling cases of electric shock.

Research

1. One of the Professors / Associate Professors should take the responsibility of being the Research Coordinator for the Department.
2. The Research Coordinator in consultation with other colleagues, should prepare a list of conferences and journals, for possible publication. Care should be taken to ensure that Tier-III / paid publications are not included in this list. The reputation of the publishers should be one of the criteria for selection.
3. The faculty should be sensitized to the nature and consequences of plagiarism, by conducting workshops on avoiding such pitfalls.
4. A regular course on Research methodology, either conducted in-house or utilizing the ones on the Internet, should be made mandatory for all faculty who have not taken up such a course.
5. Faculty and Research Scholars should be encouraged to make regular use of citation managers in their work.
6. A workshop on good writing practices should be conducted.
7. Faculty and Research Scholars should be able to distinguish between 'good' and 'bad' publications.
8. Faculty and research scholars publishing in high-quality journals should be suitably recognised, so that it will encourage others.
9. Possibilities of tie-ups and research collaborations with neighbouring institutions could be explored.
10. Faculty with PhD should be encouraged to write grant proposals to various funding agencies and at least one a year should be made mandatory.
11. Formation of Research groups as Thrust Areas can be considered.

12. Seed Grants from the Institution can be applied for, with a maximum of Rs. 5 lakhs, per faculty, to be used for buying small but essential equipment, not part of the normal purchases for the laboratories. Faculty could also join together to apply for such grants, so that some more expensive equipment could be purchased, which could be used by all of them. The data obtained from such grants could be used for submitting much larger proposals.

Faculty, Non-Teaching Staff and Students

1. The faculty and the staff of the department seem to be its biggest strength. Hence, steps need to be taken to keep them happy and satisfied.
2. Regular meetings of the faculty and staff with the HoD and the Principal could be arranged, so that any simmering discontent could be assuaged and nipped in the bud.
3. Criteria that need to be met in order to be eligible for promotions / increments need to be made public and transparent.
4. A system with senior faculty mentoring the juniors could be considered.
5. The genuine grievances of the non-teaching staff of the department can be favourably considered.
6. They may be provided opportunities for higher learning.
7. Students can be provided with opportunities for learning, beyond the classroom. Online lectures could be curated by the faculty, and offered to the students.
8. Talks / Seminars involving Eminent researchers and academicians from outside the institution can be organized on a regular basis, to provide more exposure to the students.
9. The academic time table for the present semester, with Saturdays as working days, with more than six hours for each subject, is neither practical in the long term nor desirable. It is suggested that the time table be re-scheduled, with at least one non-instructional hour everyday, so that the students are not unduly stressed out. They require time everyday to recoup their energy and mental faculties.

Conclusion

The Department of Electronics and Instrumentation Engineering at the Kongu Engineering College is fairly well-equipped and staffed. The faculty, non-teaching staff and students of the department seem to be content, which could be a sign of complacency. The teaching and learning process needs to be made more responsive and inclusive. The lessons offered by the process need to be learnt and incorporated into the system, going forward. Research seems to be a sore point, with no clear plan seen to encourage and develop research, as would be required of an institution of this stature. This is not in keeping with the vision of the institution.

The auditors wish to thank the Head of the Department, senior faculty and other members of the staff who accompanied them on the visits and made every effort to provide the information asked for, and stayed back far later than their usual clocking-off time, to accommodate the schedule of meetings. The external auditor also wishes to express his gratitude to all the students who he interacted with.

The interactions with the Faculty, Non-Teaching and Staff were with the external auditor and the comments in the relevant sections above, are his alone. Since the format was not available to the external auditor, the report has been prepared in two sections – the first being the free-flowing one given above, by the external auditor and the second, in the given format, by the internal auditor and appended as Annexure -1. The two may be read together. The report prepared by the Internal Auditor is also being submitted separately.

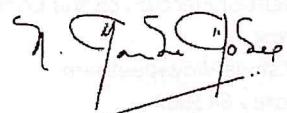
This report contains twenty (20) pages, including the cover, the page containing the Table of Contents and Annexure – 1. Both of us have gone through the entire report and testify to its contents.

Dr. P. Nirmala Devi

(Internal Auditor)

Dr. N. Madhu Mohan

(External Auditor)



Annexure - 1**KONGU ENGINEERING COLLEGE**

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department:

2. Programme & Branch (UG and PG):

3. Date of Audit: 29.9.21

4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. N. Madhu Mohan, Associate Professor, Department of Electronics and Communication Engineering, Amrita Vishwa Vidyapeetham, Coimbatore - 641004	Dr. P. Nirmala Devi Professor, Department of ECE

5. Course availability based on Specialized area (as per 2020R)

7 specialized areas have been identified and new courses in Biomedical instrumentation, IoT and wearable devices have been introduced in 2020R

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

Adequate [UG : 1 :18 & PG- 1:12]

ii) Competency level

Satisfactory. Faculty have expertise in the identified specialized areas

7. Availability of Non-teaching staff

6 Non teaching staff available and recruitment for DEO and one non teaching staff is completed. All the available staff possess knowledge in their area and able to help the students

8. Emerging areas identified and its Global relevance

4 emerging areas are identified and have been included in 2020R curriculum as electives. These are found to be useful for industry.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

The thrust areas identified are:

- Artificial Intelligence
- IoT
- Robotics
- 3D Printing
- Applied instrumentation and Industry 4.0
- Neuro Imaging data Analysis
- Industry Automation
- Machine learning

The above are some of the subjects including interdisciplinary subjects under emerging thrust areas.

There are 6 employability courses identified

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

OBE based curriculum, Professional skills and training, life skill based courses and emphasis for project and internship are introduced.

11. Details of student support mechanism

- a. Soft skill Development
12 Programmes (centrally conducted)
- b. Coding Skill Development
25 programmes conducted
- c. Learning beyond the curriculum
18 Non Formal Courses and 4 NPTEL courses were studied by the students
- d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)
650 students participated in paper and project presentation inside KEC and 735 students outside KEC. Also 192 students took part in Sports activities and won prizes
- e. Placement
78% average placement for the last three years verified
- f. Higher studies
Around 21 students have gone for higher studies and 6 abroad universities
- g. Coaching for competitive examinations
Centrally organized by HEC, KEC programmes. But the no. of students participation from EIE is only three in the last three years. This may be improved
- h. Innovation and Entrepreneurship and usage of TBI

Students participation in Entrepreneurship Camp was good. Motivation and participation for innovation contests to be improved

i. Internship

61 students have gone for internship from 2018-19 to 2020-21

12. Efforts made by the Department for tracking the holistic progression of the student

Curriculum, Yoga and Value based education, foreign language coaching, new equipments in Lab supports for the holistic development of the students in the department

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Totally 140 publications made in SCI/SCOPUS and WOSjournals

b. Student projects converted into publications

38 projects are published as papers

c. Patents

No Patents got/applied so far

d. Funded R & D projects

Two ongoing projects worth Rs. 3,73,000/- is verified

Motivation for improving the funding is required. Faculty needs assistance is getting contacts with the industry and central government laboratories

e. Utilization of R & D facility

Some specialized labs have the research facility available. Latest softwares along with relevant equipment is available in laboratories. Publications have been done in these areas. Utilization to be improved for enhancing the R&D

f. Centre of Excellence

No COE has been established so far

g. FDPs organized

One sponsored and 4 self supported FDPs were completed in the last 3 years

h. Faculty participated in FDPs/STTPs

All faculty have attended in FDPs/ STTPs

i. Workshops/conferences organized

7 sponsored seminars were conducted by the department in the last three years

j. Any other significant activity

Totally 10 PhD scholars have completed under the EIE research centre.

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

No sponsored labs in the department

b. Consultancy works done for industry/Organization

One consultancy work completed in 2019-20

c. Industry executive training programmes organized

No such programmed organized

d. Any other significant activity, Please mention

Activities with MO companies : (i) Internship and placement activity (ii) Upgradation of lab equipment done

15. List of Equipment / Instrument not in working condition

4 items have been listed under 2 laboratories. Other equipments are working in good condition

16. Name of the Equipment / Instrument / software not available as per curriculum

NIL

17. Licensed Software Details:

Verified

18. Infrastructure facility in the Department

Class room and tutorial halls are adequate. LCD Projectors 6Nos. available. Sufficient no. of PCS are also available. Request for additional PCS with latest configuration have also been given already.

19. Augmentation of infrastructure facilities during the last 5 years

Labs are augmented with new equipments and softwares in the recent years

20. Development plan / infrastructure facilities for next 5 years

MODROB project is to be completed

Smart classroom facility is to be created

21. Non conformities listed in the last IQAC audit and its action-taken report

checked and verified

22. SWOT analysis of the Department

SWOT analysis of the department was provided and discussion done

23. Observation by the Audit Team

- Infrastructure facilities are good
- Laboratory maintenance is good
- The rearrangement of the laboratories is to be done with the newly sanctioned MODROB grant.
- Proposal for latest configuration PCs required and proposals sent
- Research facilities are available with latest equipments and softwares. More publications to be done using the facilities
- Consultancy activities needs to be strengthened
- Motivation for students for high education needs improvement
- Patent activities need improvement
- Core placement needs to be improved

Overall, the department has shown a positive growth in all areas. There is a need to improve in some areas.

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MBA



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KONGUENGINEERINGCOLLEGE

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TAMILNADU

MBA

ACADEMIC AUDIT REPORT

ACADEMIC YEAR 2020-21

SEPTEMBER – 2021

KONGU
Assuring the Best

KONGU ENGINEERING COLLEGE

ACADEMIC AUDIT REPORT:2020-21

(Observation by the Audit Team)

1. Name of the Department: MBA
2. Programme & Branch (UG and PG): MBA
3. Date of Audit: 16.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.N.Thamaraiselvan Professor Department of Management Studies National Institute of Technology Tiruchirappalli - 620015.	Dr.P.Navaneethakrishnan Professor & CCO-Planning Department of Mechanical Engineering Kongu Engineering College

5. Course availability based on Specialized area (as per 2020R)

Sl.N o	List of Specialized area Identified under each Branch	List of Core Theory Courses under each Specialized area	List of Core Laboratory Courses under each Specialized area	List of Theory Elective Courses under each Specialized area	List of Laboratory Elective Courses under each Specialized area
1.	Core Courses	19	6	5	--
2.	Finance	--	8	2	--
3.	Marketing	--	1	1	8
4.	Human Resource	--	11	3	8
5.	Operations	--	--	--	8
6.	Systems	--	--	--	5
7.	Entrepreneurship	--	--	1	3
8.	Banking	--	--	--	3
9.	International Business	--	--	--	4
10.	Alternative Credit Courses	--	--	--	6

6. Availability of Faculty based on Specialized area (September 2021)

- i) Faculty – student Ratio

UG/PG/First year	No. of faculty required as per AICTE norms	Available	FSR
PG/MBA	16	13	1:18 ✓

- ii) Competency level

Sl. No	Specialized area	Number of Faculty
1.	Finance	6
2.	Marketing	7
3.	Human Resource	4
4.	Production	4

Dual S8

7. Availability of Non-teaching staff: 4 ✓

8. Emerging areas identified and its Global relevance

The following courses are related to emerging area related to global relevance

- 20MBE60 National / Global Virtual Team Project
- 20MBE63 International Visit and Environment Study

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

- 32 new courses identified based on emerging thrust areas including interdisciplinary areas, Employability based courses like Social Psychology, Rural Innovation Project, Marketing Analytics etc.

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

Introducing skill enhancement electives and alternative credit courses are significant innovation in curriculum.

Significant Innovation in Teaching Learning

- Real time practical assignment

Innovation in Evaluation

- Assignments, Project Reviews and Laboratory Exercises are evaluated based on rubrics.

Innovation in Research and Extension

- Faculty research groups identified for the purpose of promoting research proposal from various funding agencies, publication and conducting sponsored national/international conferences. The Department should concentrate more on Industry Sponsored Research Project and interdisciplinary area for research.

Innovation in Academic and Administrative Governance

- It is planned to include students in all administrative governance, in the form of class committee, guest lecture committee, finance committee, alumni committee etc.

11. Details of student support mechanism (last 3 academic years).

a. Soft skill Development

- Business communication and Managerial Skills for Effectiveness lab courses are specifically designed to develop the soft skills of the students.

b. Coding Skill Development:

- Data Visualization with R course identified for the purpose of data analytics.

c. Learning beyond the curriculum

- IIBF, NISM and foundation course on Data Analytics conducted as non formal courses to the students for the purpose of employability.

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

Particulars	2020-2021	2019-2020	2018-2019
No of Students Paper Presentation	4	41	35
No of Students Participation in Co Curricular & Extra Curricular activities	119	37	202 ✓

e. Placement

S. No	Year	No. of Students Placed
1	2020-2021	28
2	2019-2020	58
3	2018-2019	47 ✓

f. Higher studies

S. No	Year	No. of Students
1	2020-2021	2
2	2019-2020	1
3	2018-2019	0 ✓

g. Coaching for competitive examinations

- The department encourage student to appear for various competitive exam like UPSC, TNPSC, SSC, RRB to the students.

h. Innovation and Entrepreneurship and usage of TBI

- Industry linkage to the students happening through various guest lecture arranged by TBI. Students are take participation in idea contest programs organised by TBI and entrepreneurship cell.

i. Internship

S. No	Year	No. of Internships
1	2018-2019	115
2	2019-2020	13
3	2020-2021	12 ✓

12. Efforts made by the Department for tracking the holistic progression of the student (20-21)

Academic Progression			
Particulars	2020-2021	2019-2020	2018-2019
No of Students Passed in III Semester	95.58%	90.27%	88.70%
No of Students Passed in IV Semester		98.23%	93.71%
No of Students Passed in I Semester	--	78.63%	77.78%
No of Students Passed in II Semester	--	100%	78.45%
No of Students Passed in I Trimester (2020-2021)	96.91	--	--

Non Academic Progression			
Particulars	2018-2019	2019-2020	2020-2021
No of Association Activities	4	3	3
No of Inter College Management Meet Conducted (REPOWIS)	1	1	1
No of Guest Lectures, Workshop etc Organized	19	20	23 ✓

13. R & D (Year-wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others) :

S. No	Year	No. of Publications
1	2018-2019	16
2	2019-2020	50
3	2020-2021	41 ✓

b. Student projects converted into publications :

S. No	Year	No. of Publications
1	2020-2021	7
2	2019-2020	10
3	2018-2019	10 ✓

c. Patents Applied (Through KEC) : Nil
 Published : Nil
 Granted : Nil

d. Funded R & D projects :

Sl. No.	Year	Name of the funding Agency	Amount sanctioned	Period
1.	2019	ICSSR - IMPRESS	4,00,000	2019-2021
2.	2019	ICSSR (MRP)	7,30,000	2019-2021
3.	2019	ICSSR - IMPRESS	12,60,000	2019-2021

e. Utilization of R & D facility: Nil

f. Centre of Excellence : Nil

g. FDPs organized :

S. No	Year	No of Programmes Organized (Sponsored)	No of Programmes Organized (Self Supported)
1	2020-2021	Nil	Nil
2	2019-2020	1	Nil
3	2018-2019	Nil	Nil

h. Faculty participated in FDPs/STTPs :

S. No	Year	
1	2020-2021	63
2	2019-2020	59
3	2018-2019	23

i. Workshops/conferences organized:

S. No	Year	No of Conference / Workshop (Institutional)	No of Conference / Workshop (National)	No of Conference / Workshop (International)
1	2020-2021	0	10	0
2	2019-2020	0	6	1
3	2018-2019	1	4	0

j. Any other significant activity, Please mention : Nil

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

: Nil ✓

b. Consultancy works done for industry/Organization :

S. No	Year	No of Consultancy
1	2020-2021	3
2	2019-2020	5
3	2018-2019	4

c. Industry executive training programmes organized : Nil ✓

d. Any other significant activity, Please mention :

➤ 6 MoUs signed in last three years. ✓

15. List of Equipment / Instrument not in working condition (September 2021): Nil ✓

16. Name of the Equipment / Instrument / software not available as per curriculum

(R2020) (September 2021): Nil

17. Licensed Software Details: (September 2021)

Sl.No	Name of the software	Name of the Laboratory	Validity period/Perpetual
1	PROWEES IQ (CMIE)	MBA CC1	08.01.2021 to 07.01.2022
2	IBM SPSS Amos v27.0	MBA CC1	25.01.2021 to 24.01.2022
3	E-Views Single User Latest Version	MBA CC1	25.01.2021 to 24.01.2022
4	Smart PLS3	MBA CC1	25.01.2021 to 24.01.2022
5	Tally ERP 9	MBA CC1	Perpetual ✓

18. Infrastructure facility in the Department (September 2021)

Sl. No	List of Facility required / identified	Required as per norms	Available	Deficiency	Verified (Yes/No)
1.	No. of class rooms including furniture and fixture	4	4 class rooms with Audio & Video Equipment	--	Yes
2.	No. of laboratories (including Furniture, fixtures)	1	1 lab with Projector & Audio Systems	--	Yes
3.	No. of computers	60 (1:2) Printers : 6	62	--	Yes
4.	Library facility	Volume: 1000 Titles: 200 Journals: 48 Reading room seats: 30	Volume: 11599 Titles: 3213 Journals: 36 Online Sources: 72 Reading room seats: 40	--	Yes
5.	No. of faculty rooms	Adequate	Separate Faculty room - 8 Faculty cubicles - 10	--	Yes
6.	Canteen facility	--	No	--	Yes
7.	Drinking Water facility	Adequate	Yes (4 water cooler)	--	Yes
8.	Adequate toilet facility for boys and Girls	Adequate	Yes	--	Yes
9.	Add any other available infrastructure facility	Adequate	120 seating capacity mini seminar hall - 1 415 seating capacity seminar hall - 1 30 capacity discussion hall - 2 Faculty lunch room - 1	--	Yes ✓

19. Augmentation of infrastructure facilities during the last 5 years: Nil ✓

20. Development plan / infrastructure facilities for next 5 years:

- Up gradation of existing system in the computer centre. ✓
- Smart Board for four class rooms and 120 hall.

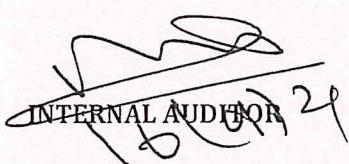
21. Non conformities listed in the last IQAC audit and its action-taken report: Nil ✓

22. SWOT analysis of the Department (September 2021)

Strengths	Weakness
<ul style="list-style-type: none"> ❖ Brand name of the college ❖ 100% admission ❖ Consistent academic performance by students. ❖ Disciplined and hardworking students ❖ Low faculty turnover. ❖ Peer relationships and team spirit among faculty and students. ❖ Curriculum - More emphasis on practical Exposure. ❖ 90% of the faculty members have Ph.D. ❖ Domain knowledge of the faculty members. ❖ Organizing research workshops. ❖ Infrastructure facilities ❖ Research funding by government agencies. 	<ul style="list-style-type: none"> ❖ Low tapping of industrial consultancy. ❖ Students are from rural background. So English communication of the student is poor ❖ Weak alumni Network ❖ Lack of International exposure ❖ Lack of Competitive admission process ❖ Lack of Diversity of students / faculty.
Opportunity	Challenges
<ul style="list-style-type: none"> ❖ Industry collaboration for academic and consultancy activities ❖ Student / faculty exchange program with foreign university. ❖ Growth prospects In terms of new programmes. 	<ul style="list-style-type: none"> ❖ Capturing of market by foreign and premier institutions by offering specialized management programmes through online. ❖ Frequent changes in government policies regarding MBA. ❖ Less preference for PG programmes by ✓ students

23. Details to be filled by Audit Team

- ① Placement to be improved
- ② Data analytics - more courses may be offered with 'R' and Python
- ③ More Industry guest Lecture may be conducted
- ④ Student Project to poster making improved
- ⑤ Industrial Interaction should be improved


INTERNAL AUDITOR 24


N. Omkar

EXTERNAL AUDITOR

24. Outcome of the meeting with faculty

- ① Data collection by system make improved
- ② Journal subscription may be expanded
- ③ Press Reader - maybe purchased

25. Outcome of the meeting with Students

- ① more Effective for PPT make offlined
- ② Teaching methodology should be changed
- ③ Reduce PPT usage
- ④ more exposure in Data analytics need
- ⑤ Toilet Cleaning - very poor
- ⑥ Parking problem ⑦ Triangular system implementation
(PTO)

26. Outcome of the meeting with Non-Teaching Staff

- ⑧ System may be upgraded

N. Mohan

EXTERNAL AUDITOR

- ② Bridge courses may be offered
in Finance, Accounting, Data Science
- a) Assignment should be given with
all faculty coordination (single day
3 or more courses are given)

Details to be filled by Audit Team

1. Placement to be improved
2. Data Analytics – more courses maybe offered with ‘R’ and Python
3. More Industry Guest Lecture maybe conducted
4. Student Project to paper maybe improved
5. Industry Interaction should be improved

Outcome of the meeting with faculty

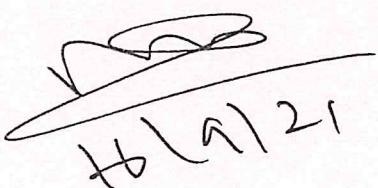
1. Data collection by system maybe improved
2. Journal subscription maybe expanded
3. Press Reader- maybe purchased

Outcome of the meeting with students

1. More elective paper maybe offered
2. Teaching methodology should be changed
3. Reduce PPT usage
4. More exposure in Data analytics need
5. Toilet Cleaning – very poor
6. Parking Problem
7. Trimester system implementation
8. Bridge courses maybe offered in finance, Accounting, Data science
9. Assignment should be given with an faculty coordination (single day 3 or more courses are given)

Outcome of the meeting with Non-Teaching staff

1. System maybe upgrade



A handwritten signature consisting of stylized initials and the date "H(A)21".

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department : Computer Applications
2. Programme & Branch (UG and PG) : Master of Computer Applications
3. Date of Audit : 11.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.C.Chellappan Former Professor Department of Computer Science College of Engineering Anna University, Chennai	Dr.P.Priakanth Professor Department of Computer Science and Engineering Kongu Engineering College

5. Course availability based on Specialized area (as per 2020R)

All the important specialized areas are available in the 2020R curriculum.

6. Availability of Faculty based on Specialized area

- i) Faculty – student Ratio

1:18

- ii) Competency level

Competency is good, for few courses additional faculty need to be trained.

7. Availability of Non-teaching staff

Technical staff : 2

Data Entry operator :1

Office assistant :1

8. Emerging areas identified and its Global relevance

Emerging technologies and global relevance are available.

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

Available.

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- Online courses are encouraged.
- Case studies are given for analytical courses.
- Real time projects have been given in some laboratory courses.
- Others like coding skill, national level participation and non-credit courses are planned but yet to implement.

11. Details of student support mechanism

a. Soft skill Development

Provided but activity needs to be increased.

b. Coding Skill Development

Provided.

c. Learning beyond the curriculum

Value added and one credit courses are offered.

d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)

Participation is good.

e. Placement

Average number of students placed every year is 45 can be improved.

f. Higher studies

Need to be improved.

g. Coaching for competitive examinations

Coaching were provided in the 2020-21 is very less.

h. Innovation and Entrepreneurship and usage of TBI

Participation in IIC/EMDC is good.

i. Internship

Number of internship is very good.

12. Efforts made by the Department for tracking the holistic progression of the student

Bridge courses are given for non computer science students.

Projects, cultural diversity, soft skills and placement trainings are provided.

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Good, at an average of 30 publications per year.

b. Student projects converted into publications

Can be improved.

c. Patents

Need focus in patenting.

d. Funded R & D projects

Currently one project is in progress.

e. Utilization of R & D facility

Utilized.

f. Centre of Excellence

NIL.

g. FDPs organized

2 programs organized.

h. Faculty participated in FDPs/STTPs

Very good. 105 programmes participated.

i. Workshops/conferences organized

Good. 15 programmes were organized at national level.

j. Any other significant activity

NIL

14. Industry Linkage Activities (Last 3 years)

a. Sponsored labs established

NIL

b. Consultancy works done for industry/Organization
Excellent. 54 Consultancy work in the year 2020-21

c. Industry executive training programmes organized

NIL

d. Any other significant activity, Please mention

NIL

15. List of Equipment / Instrument not in working condition

2 computer systems mother board problem.

16. Name of the Equipment / Instrument / software not available as per curriculum

NIL

17. Licensed Software Details:

Available. Microsoft campus license.

18. Infrastructure facility in the Department

Adequate.

19. Augmentation of infrastructure facilities during the last 5 years

Digi-board for online classes.

219 book titles were purchased for library.

20. Development plan / infrastructure facilities for next 5 years

Centre of Excellence in Data science planned.

NBA Accreditation.

21. Non conformities listed in the last IQAC audit and its action-taken report

Non conformities: NIL

22. SWOT analysis of the Department

Analyzed and it is realistic.

23. Observation by the Audit Team

- a.) Hurdle in handling the first year students as they join the first year by the delay of 4 months. Also the bridge courses along with the regular course make the students to learn the core knowledge with difficult.

Suggestion: i) To reduce the burden of learning the bridge courses, for the non-computer science students, Tri-semester system may be introduced. For the computer science students instead of the bridge course laboratory based elective courses may be introduced as core. Accordingly the work load of the faculty may be accounted.

- b.) For few courses the laboratory experiment has real life oriented problems. Need to modify the lab experiments with the model based experiment and can be showcased in the department to change the attitude towards the betterment of PG students. For laboratory experiments more test cases and use cases to be incorporated.
- c.) Laboratory Computer systems may be upgraded.
- d.) Continuous self learning and self development based grooming to be done to tag as the PG students.
- e.) For each course, more than one faculty expertise may be ensured, by having the policy of taking new subject every year by the faculty.
- f.) Special interest group may be formed with the faculty to improve domain skill set for research and consultancy. Periodic seminar by the team shall be given.
- g.) Relevant documents pertaining to the Academic audit was evident and good.
- h.) Interaction between the student peers can be improved by forming groups for solving real life problems and coding challenges.



INTERNAL AUDITOR



EXTERNAL AUDITOR

24. Outcome of meeting with faculty

- a.) Faculties are expertise in their field still the current trends in their domain may be updated to enhance the teaching with recent developments.
- b.) Demonstration based teaching is adopted.
- c.) Consultancy by faculty can be improved.
- d.) Documentation work consuming more time, need to be reduced.
- e.) Faculty members need to be trained for motivating the students.
- f.) Cloud platform paid version may be provided for better skill development.
- g.) Focus and future area of improvement is lacking with the faculty members for individual growth.
- h.) Faculty skill sets need to be improved.
- i.) Clarity in research areas is lacking.
- j.) Need to transform the conventional teaching to skill/demo based teaching to the current students trends.

25. Outcome of the meeting with Students

- a.) Senior and junior interaction is good.
- b.) Contact with the alumni is also good.
- c.) Student lack in the awareness of the latest developments in various areas.
- d.) Placement opportunities are satisfactory.
- e.) Infrastructure facility is satisfactory.
- f.) Preferred to go for job rather than higher education.

26. Outcome of meeting with Non Teaching faculty

- a.) Relationship with the teaching and Non-teaching is good.
- b.) The interaction with the students and their correspondence is good.
- c.) Lab technicians shall be trained with the latest tools and packages.



EXTERNAL AUDITOR

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department: COMPUTER TECHNOLOGY - UG

2. Programme & Branch (UG and PG): B.SC ., (CSD , IS & SS)

3. Date of Audit: 18.09.2021

4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr.C.Chellappan Former Professor Department of Computer Science College of Engineering Anna University, Chennai Mobile: 9841053123	Dr.R.R.Rajalaxmi Professor Department of Computer Science and Engineering Kongu Engineering College

5. Course availability based on Specialized area (as per 2020R)

- Verified

6. Availability of Faculty based on Specialized area

i) Faculty – student Ratio

- FSR - 1 : 20

May be improved to 1 : 18 to further strengthen the diversification of faculty in specialized areas relevant to the curriculum

ii) Competency level

Availability of faculty in specialized areas is minimum. Hence training may be given in specialized areas like Cyber Security, Artificial Intelligence, Data Science and Agile methodologies

7. Availability of Non-teaching staff

- 6 Members

8. Emerging areas identified and its Global relevance

- Four areas (Data science, IoT, AI and Blockchain technology) identified.
- Cybersecurity/network security to be included

9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses

- Data Analytics using R – 2019 -2020 – verified
- Programming with Golang – 2020 -2021 – Verified

10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department

- OBE

1.18BCT41 - Computer Networks – Packet Tracer Tool used to demonstrate network concepts

2.18BCT52 – Software Project Management – Ms Project tool is used.

3.18BCC11 – Communicative English – Reading & Writeup practice given

- Tutorial for the following courses verified

1. 20BCC21 – Communicative English

- 2. 18BCO01 – Data Mining
- 3. 20BCT23 – Python Programming
- 4. 18BCT21 - Mathematics II
- 5. 20BCT12 – Digital Principles and Logic Design
- Research and Extension
 - 1. 2020 – 2021 – (Odd & Even Semester)
 - No.of Projects – 56
 - Submitted for publications – 44
 - Published in Scopus – 11
 - Published in non Scopus – 12
- NPTEL
 - Social Networks and Data Science courses are verified
- Industrial Training
 - 2018 -2019 – J.S.Logit – 3 days – verified
 - 2020 -2021 - Nivethitha – 5 days - verified

11. Details of student support mechanism

- a. Soft skill Development
 - 2018 -2019 : 30.7.18 to 04.08.18 - verified
 - 2019 – 2020 : 20.01.20 to 31.01.20 - verified
- b. Coding Skill Development
 - 2019 – 2020 – C Test – 14.08.19 - verified
 - 2020 – 2021 – C Training – 17.03.21 to 20.9.21 (Daily Training)- verified
- c. Learning beyond the curriculum
 - Non Formal Course – Web designing with Photoshop – 2018 -2019 – Odd Semester- verified
- d. Learning beyond the class (Participation in co-curricular and extra-curricular activities)
 - 18BCR01 - N.Indhumathi – Sports - verified
 - 18BIR059 – Yogeshwaran – Paper Presentation - verified
- e. Placement
 - 2018 -2019 : 77 (57 proof available, 20-to be collected)
 - 2019 – 2020 : 66 (55 proof available, 11-to be collected)
 - 2020 – 2021 : 62 (41 proof available, 21-to be collected)
- f. Higher studies
 - 2019 – 2020 : Praveen Raj – Christ University, Bangalore – MCA - verified
 - 2018 – 2019 – Mohana Prakash J – Kumaraguru college of Technology, CBE – MCA- verified
- g. Coaching for competitive examinations
 - 2018 – 2019 – Haritha – TANCET – MBA - verified
 - 2019 – 2020 – AKASHAYA – TANCET MCA - verified
- h. Innovation and Entrepreneurship and usage of TBI
 - Nil

i. Internship

2019 -2020 – 17BIR058 – Tamilselvan - verified

2020 -2021 – 18BIR045 – M.Santhosh - verified

12. Efforts made by the Department for tracking the holistic progression of the student

- Association file - 2019 -2020 – 05.10.2019 – Guest Lecture– verified
- Following online open-source tools are used to augment the teaching learning process of various courses.

S.No	Name of the Tool	Course Name
1	Colab	Python Programming
2	Online GDP Compiler	Java Programming
3	Decoder Mobile App	Software
4	Selenium Tool	Software testing
5	Webminal	Operating System
6	Packet Analyzer & Tracer	Computer Networks
7	W3School Platform	Web Technology
8	Amrita Virtual Lab	Database Management Systems
9	Weka Tool	Data Mining
10	Study Skill Success Tens buster Issue in English	Communicative English
11	Logic Gates Simulator	Digital Principles
12	Code Repository	Github
13	Kaggle	Project
14	Tinker CAD	Internet Of Things
15	R studio	Project
16	Unity , Sparc	Augmented Reality & Virtual reality
17	Django	Web Application Development
18	Pspice simulator	Basics of Electrical and Electronics Engineering

13. R & D (Year wise details for last 3 years)

a. Publications (SCI/SCOPUS/Others)

Following faculty members publication verified in the respective academic years

- 2018 -2019 – SCI – Dr.M.Thangamani
- 2018 -2019 – SCOPUS – Ms.S.Poorani
- 2019 - 2020 – SCI – Dr.S.Karunakaran
- 2019 -2020 – SCOPUS – Ms.S.Malathy
- 2020 -2021 – SCI – Ms.K.Sathya
- 2020 -2021 – SCOPUS – Ms.S.Poorani

b. Student projects converted into publications

Following projects verified in the respective academic years

- 2019 -2020 – Review of e-Payment system guided by Dr.S.Karunakaran and published in SCOPUS
- 2020 – 2021 – Diseases detection in fruit using Image Processing guided by Ms.S.Malathy and published in SCOPUS
- c. Patents
2020 -2021 – 5 Patents applied (not obtained through KEC)
- d. Funded R & D projects
NIL
- e. Utilization of R & D facility
NIL
- f. Centre of Excellence
 - Purchase Order Issued to establish centre of Excellence in Computer Science Cluster Department.
- g. FDPs organized
Nil
- h. Faculty participated in FDPs/STTPs
2018 -2019 – D.Hemalatha- Machine Learning using Python - verified
2019 -2020 - D.Deepa - Introduction to ML – NPTEL - verified
2020 -2021 – S.S.Saranya – Block Chain – ATAL – FDP - verified
- i. Workshops/conferences organized : NIL
- j. Any other significant activity :NIL

14. Industry Linkage Activities (Last 3 years)

- a. Sponsored labs established
NIL
- b. Consultancy works done for industry/Organization
Following consultancy works verified

S.No	Year	Organization	Amount (Rs)	Remarks
1.	2018-2019	Vinayaga Traders,Erode	1,180	Inventory Management
2.	2019-2020	Sorakod, Chennai	20,000	Website Development
3.	2020-2021	Ganapathy Textiles, Nammakkal	5,900	Website & inventory Managemnet

- c. Industry executive training programmes organized: NIL
- d. Any other significant activity, Please mention
Activities done through MOU
 1. CISCO – included CISCO relevant content in curriculum
 2. ACME- Organized Guest Lecture in “IOT on real time Projects”
 3. ACCENT – Offered Internship to Mr.Vigneshwaran (18BCR057) in 2020-2021

15. List of Equipment / Instrument not in working condition: NIL

16. Name of the Equipment / Instrument / software not available as per curriculum NIL

17. Licensed Software Details:

- i. Microsoft Campus Agrement
- ii. Symantec antivirus
- iii. Tens buster
- iv. Oracle 10G

18. Infrastructure facility in the Department :

Available as per Norms

19. Augmentation of infrastructure facilities during the last 5 years :

Upgradation of PC, Switch, Projector and IoT components

20. Development plan / infrastructure facilities for next 5 years

Old computer system replacement (CC4 and 5), IoT related lab setup equipment proposal submitted.

21. Non conformities listed in the last IQAC audit and its action-taken report

- Action taken report for the R and D project submission has to be updated

22. SWOT analysis of the Department

SWOT analysis is done periodically. Weaknesses identified.

- Additional Hands-on training may be conducted to improve the programming skill of students to participate in competitions
- Advanced level programming in C, Java, Python training may be conducted to strengthen the problem solving ability of students.
- R and D related activities to be improved

23. Observation by the Audit Team

- Distribution of areas of specialization of faculty in the department to be uniform. Each faculty should be specialized in atleast two core/elective subjects.
- Research areas may be identified, and Special Interest Group may be formed to collaborate with inter/intra departments
- Display of configuration/topology/networks in each lab is required
- Showcasing the application of digital components (flip flop, counters etc.,) in the real life control systems is needed.
- Appropriate training/demo materials to enhance programming skill of the students must be prepared.
- Project work format and content to be improved to reflect the real work with a set of use cases and testing.

R.R.Dajal
20/9/21

INTERNAL AUDITOR

EXTERNAL AUDITOR

24. Outcome of meeting with faculty

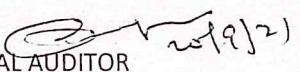
- Distribution of area of subject's specialization among faculty is highly skewed. Many are in Data mining and Deep Learning.
- Programming skill of students especially first year needs more effort
- Statistical tools and training needed in Mathematics subject to impart demo/hands on training to the students to bring relevance of the subject to solve real life problems.
- Placement training activity participation is good.
- Some faculty involved in offering CISCO academy training and DST project.
- Many faculty interested in doing Ph.D.
- In teaching learning, NPTEL courses can be identified for augmenting the regular course content delivery.
- Faculty members handle the courses as per syllabus. They can highlight its usefulness with the skill set expected for employment so that the students can understand the importance of studying the course.
- Charts may be prepared to depict the hierarchy of courses in the curriculum and to map the curriculum with the skill set for placement/higher studies and showcase in prominent locations to inspire the students
- Frequently Asked Questions (FAQs) asked in the competitive examinations in the respective core/elective courses can be collected as a Question bank and use it for practicing by the students to improve their employability skills.
- In laboratories, charts/flex boards can be displayed/showcased to highlight the relevance of experiments with real world application systems.

25. Outcome of the meeting with Students

- Satisfied with the curriculum structure
- Teaching learning is good
- Lab facility and functions are good
- Contact with alumni is good
- Students equally interested in Placement and Higher studies.
- Express difficulty in wi-fi coverage. Number of access points can be increased to improve wi-fi connectivity in the department.
- Students suggested team projects in the lab to solve real life problems in the lab.

26. Outcome of meeting with Non-Teaching faculty

- All of them are well qualified with MCA
- They can be utilized for computerizing daily equipment and maintenance logs and status monitoring of UPS/Battery/Networking.
- Needs awareness on campus networking configurations and working.
- Training on latest software tools is needed and they can be utilized for regular lab sessions.
- Data entry operator may be trained for document format conversion and email security.


EXTERNAL AUDITOR

KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638012

ACADEMIC AUDIT – 2020-21

(Observations by Audit Team)

1. Name of the Department : Computer Technology - PG
2. Programme & Branch (UG and PG) : Integrated – MSc (Software Systems)
3. Date of Audit : 17.09.2021
4. Name of the Auditors:

External Auditor (Name, Designation & Affiliation)	Internal Auditor (Name, Designation & Department)
Dr. C. Chellappan Former Dean College of Engineering, Anna University Guindy, Chennai – 600 025.	Dr. R. Thangarajan Professor Department of Information Technology Kongu Engineering College Perundurai – 638 060, Erode

5. Course availability based on Specialized area (as per 2020R) : Available.
However, under the specialization of Software Systems, more courses may be identified like Devops, etc.
6. Availability of Faculty based on Specialized area
 - i) Faculty – student Ratio: 18: 1
 - ii) Competency level: Faculty competency need to be improved in different areas of specialization. Faculty to focus on continuing Education through online portals.
7. Availability of Non-teaching staff: Available – 3 Nos. (2 – Lab Assistant, 1 - DEO)
8. Emerging areas identified and its Global relevance: Identified – AI, IoT, Design Thinking, Big Data Analytics
9. Curriculum identified based on emerging thrust areas including interdisciplinary areas, Employability based courses: Incorporated in the R2020
10. Any significant innovations in curriculum, teaching, learning and evaluation, research and extension, Academic and Administrative governance introduced by the department
 - Mini-project, Project work I/II – Well received by students and industry
 - Effective use of Google class room and other ICT tools
 - Project to paper conversion – Satisfactory
 - Roles and responsibilities assigned to faculty members for effective governance

11. Details of student support mechanism
 - a. Soft skill Development : Satisfactory – verified Annexure-1
 - b. Coding Skill Development : Satisfactory – Verified Annexure-2
 - c. Learning beyond the curriculum : Student participation in NPTEL courses is satisfactory
 - d. Learning beyond the class (Participation in co-curricular and extra-curricular activities) Good. Verified annexure-3
 - e. Placement : Good. Verified Annexure-4
 - f. Higher studies : Efforts are made by the department but student conversion is low. Students are more inclined to placement and entrepreneurship
 - g. Coaching for competitive examinations : Student participation in competitive examination is poor
 - h. Innovation and Entrepreneurship and usage of TBI : Good. Student participated in all programmes conducted by TBI
 - i. Internship: Good – Verified Annexure-5
12. Efforts made by the Department for tracking the holistic progression of the student

The department has made all efforts for holistic development of students viz. Internships, extra and co-curricular activities, consultancy work, department level training programmes on skill development, value added courses, publications, etc.
13. R & D (Year wise details for last 3 years) – Verified Annexure-6
 - a. Publications (SCI/SCOPUS/Others) : Good
 - b. Student projects converted into publications : Satisfactory
 - c. Patents : NIL (poor)
 - d. Funded R & D projects : 01 - Rs. 3 Lakh
 - e. Utilization of R & D facility : No such facility
 - f. Centre of Excellence : NIL
 - g. FDPs organized : NIL
 - h. Faculty participated in FDPs/STTPs : Good
 - i. Workshops/conferences organized : 2 – self-supported programmes conducted

- j. Any other significant activity : 2 – value added courses conducted
14. Industry Linkage Activities (Last 3 years)
- a. Sponsored labs established : NIL
- b. Consultancy works done for industry/Organization : Available for 2019-20 and 2020-21
Verified Annexure-7
- c. Industry executive training programmes organized : NIL
- d. Any other significant activity, please mention : NIL
15. List of Equipment / Instrument not in working condition : NIL
16. Name of the Equipment / Instrument / software not available as per curriculum:
No deficiency
17. Licensed Software Details : Available (Microsoft, Oracle, Rational Suite)
18. Infrastructure facility in the Department : Adequate – No deficiency
19. Augmentation of infrastructure facilities during the last 5 years
One computer center established in 2017 with 60 computers
20. Development plan / infrastructure facilities for next 5 years
Available.
21. Non conformities listed in the last IQAC audit and its action-taken report
NIL
22. SWOT analysis of the Department:
Available in the department and known to all faculty

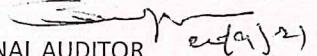
A handwritten signature consisting of stylized initials and the year 2019.

23. Observation by the Audit Team:

- Faculty interest in teaching and research is good but self-improvement is lacking
- a. Good lab infrastructure as per norms.
- b. Lab experiment manuals to be arranged with a set of real-life sub-problems to improve the student skill in real-life problem solving with different scenarios or case-studies.
- Project work format need to be improved with IEEE (SRS) format to be on par with industry.
- In Lab records:
 - a) Flowchart/algorithm steps missing. Just coding lines reproduced.
 - b) Different input/output (testcases) and results need to be Incorporated.
 - c) Team project can be encouraged to solve real-life problem.
- Student programming skill improvement by proper coaching with systematic follow-up with training materials (videos, case-studies, real-life problems)
- Mapping of courses of each semester to skill set for placement/higher education (GATE).

 20.9.2021
INTERNAL AUDITOR

(R. THANGARATNA)

 20.9.2021
EXTERNAL AUDITOR

(Dr. C. CHELLAPPAN)

24. Outcome of meeting with faculty:

- As per revised curriculum, revised manuals and hands-on training needed for effective teaching.
- Students lack in programming and communication skills especially first year and students from commerce background.
- Faculty self-improvement is not effective.
- Faculty research focus and specialized lab setup participation is to be improved.
- Interaction with outside world (including peer departments) needs improvement
- Knowledge on latest technology is poor
- Department level training and placement activity participation is good.
- Membership in professional bodies or societies and to be improved.
- Knowledge on current trends/tools and application areas is lacking in their subject handling.
- Junior faculty interested in doing PhD but need self-learning
- Faculty expressed slight increase in workload.

25. Outcome of the meeting with Students:

- Students expressed their satisfaction in internships, projects and open electives.
- Lab facility is good.
- Majority of students interested in job placement, entrepreneurship, and not in higher education.
- Students happy about auditing NPTEL courses.
- Students have good interaction with alumni and take help for internship and placement coaching.

26. Outcome of meeting with non-Teaching faculty:

- Feel good in working in the department.
- Daily maintenance logbook and preventive maintenance can be computerized.
- May be trained on current tools & software and utilized for lab sessions effectively.
- Data Entry Operator may be trained for document format conversion, ERP, email security, WWW phishing, and other security problems.

EXTERNAL AUDITOR

(Dr. C. CHELLAPPAN)

KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE-638060

AUDIT REPORT

Department: Electrical Maintenance

Date of Audit: 18.9.2021

Audit By: 1. Dr.M.Sundaram, Dept of EEE, PSG Tech, CBE.

2. Dr P Navaneethakrishnan, CCO - Planning

3. Dr P S Raghavendran – EEE, KEC

S.No	Name of the Major Facility/Equipment	Utilization Level	Present Working Status
1	S.C.No: 139, 1000 KVA MD: 700 KVA (11KV/415) SPV : 400 KW (8 INV: 50 KW)	70%	Working
2	S.C.No: 367, 800 KVA MD: 350KVA (11KV/415) SPV : 50 KW	60%	Working
3	S.C.No: 144, 112 KW LT/CT SPV : 100 KW Civil	100%	Working
4	S.C.No: 152, 112 KW LT/CT SPV : 80 KW Vaigai Hostel	100%	Working
5	S.C.No: 169, 112 KW LT/CT SPV : 50KW Kaveri Hostel	100%	Working
6	S.C.No: 689, 112 KW LT/CT SPV : 50KW Bhavani hostel	100%	Working
7	S.C.No: 790, 112 KW LT/CT Alumni Guest House	40%	Working
8	S.C.No: 1968, 80 KW LT/CT B.Arch	80%	Working
9	S.C.No: 656, 112 KW LT/CT SPV : 80 KW KPC	100%	Working
10	S.C.No: 145, 80 KW LT/CT (50 HP -STP Plant – 24X7 Running)	100%	Working
11	S.C.No: 882, 40 KW LT/CT SPV : 20 KW KPC	100%	Working
12	500 KVA X 2 250 KVA X 1 SC : 139	Based on requirement	Working
13	500 KVA X 1 125 KVA X 1 SC : 369	Based on requirement	Working

14	500 KVA X 2 ALL LT/CT 250 KVA X 1 125 KVA X1 SC: 1968 B.Arch	Based on requirement	Working
15	UPS (115, 636 KVA, No of batteries 1665	60%	Working
16	LIFTS (Admin Block, MBA Block and Automobile block)	Based on requirement	Working

General recommendations

1. Planning, BoM preparations, purchase document are found very much good practice.
2. Zero export facility for SPV is under progress, however individual inverter control is to be provided in SPV installed area to improve the solar power utilization.
3. LT services need zero export control device for better SPV utilization.
4. Staff quarters power supply tariff was changed to reduce the energy cost is good.
5. Harmonics is to be tested for LED's, PCs, LCD projector while purchase, to ensure the quality.
6. Block wise energy consumption pattern is needed for further improving solar power utilization and for that smart meter with networking and monitoring system is recommended.
7. A/C unit's temperature setting is to be kept at 25°C to reduce power consumption.
8. Found more number of UPS & battery. These to be removed with big units block wise in phased manner, to reduce energy consumption.
9. All class room ceiling fan maybe connected to regulator (central) to reduce power consumption.
10. UPS, Battery maybe kept in AC room to increase life of battery. (^{TMF} ~~Fameless~~ battery)
11. Electrical store in separate place to ensure safety at Gen.set, and power house norms.
12. Servo transformer for Lighting & fan is recommended to increase the life, reduce the energy.
13. Except UPS & Battery, other equipment loading is optimum.
14. Electrical Maintenance man power verification is good, of course need 5 to 6 ITI category to continue the best practices, which were established earlier. Due to man power shortage, few practices were not continuing, In shift single operator at Power House to be avoided in the aspect of safety.

Internal Auditors 18/9/21

Dinesh DSSH

M. Srinivasan

External Auditor