

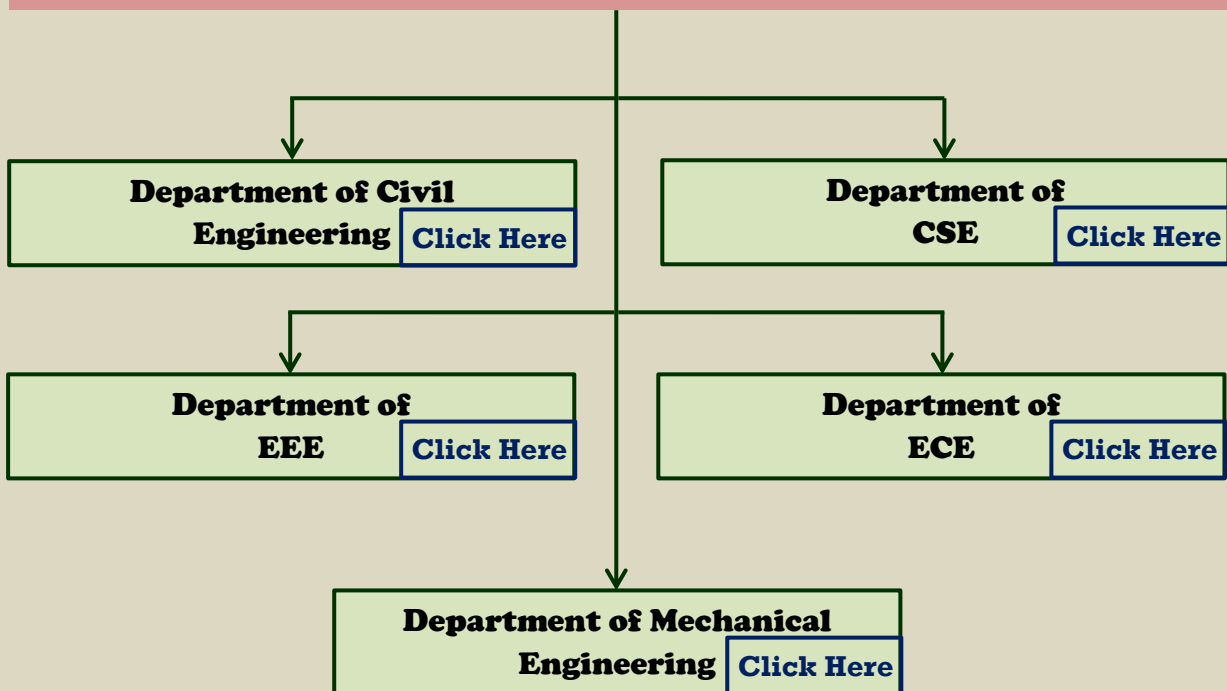


RAMCO INSTITUTE OF TECHNOLOGY

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Communication with the Affiliating University

Departments



**The Department of
Civil Engineering**



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Lr. No. RIT/CIVIL/AU Comm./2023/02

23.02.2023

To

The Director,

Centre for Academic Courses,

Anna University,

Chennai – 600025

Respected Sir/Madam,

Sub: Representation of Curriculum Gap in the existing Curriculum R-2021 of Civil Engineering - Submission of suggestions to be included in curriculum content in the forthcoming Curriculum & Regulations of R-2025 of Civil Engineering- reg.

We wish to submit the following report on the curricular gap analysis and identification carried out by the Department of Civil Engineering for consideration and inclusion in the forthcoming AU R2025 curriculum and syllabus of Civil Engineering.

- a) **Consolidated Report of Curriculum Gap Analysis of the AU R-2021 for Civil Engineering Streams is propounded to fill the Curricular Gaps in the Forthcoming AU R-2025**

We request you to consider our suggestions while framing the regulation of AU R-2025 Curriculum and Syllabus of Civil Engineering.

Thank You,

ul
23/2/23
HOD/Civil

Vice Principal

M
23/2/23
Principal

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

Consolidated Report of Curriculum Gap Analysis of the AU R-2021 for Civil Engineering Streams is put forth to fill the Curricular Gaps in the Forthcoming AU R-2025

The Academic, and Administrative Bodies of Ramco Institute of Technology's Civil Engineering Department analyzed and identified curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future ready Engineers. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2021 Civil Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help of the following (i) inputs from faculty members with specific competency/domain knowledge; (ii) Students' feedback; (iii) Employers feedback; (iv) Alumni feedback; (v) Discussion with Industry/Professional Society Experts, and (vi) Suggestions from Academic peer groups.

In order to address the gaps in the curriculum, the following measures have been proposed in terms of modification/revision of the existing curriculum through the inclusion of the following courses.

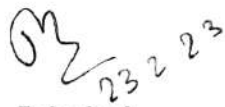
In the new syllabus, the following courses can be considered

- A) To introduce the knowledge on deep energy renovation of buildings and to understand the complex nature of building retrofit, combining various building disciplines and allowing integrated design and cross-craft understanding with a particular focus on practical exercises and demonstrations, **Net Zero Energy Building (NZEB) and Retrofitting** course may kindly be offered.
- B) As a Civil Engineer, one should know the streamlining of building plan approvals, jurisdiction/applicability, and building documentation procedures, **Town and Country Planning Bye Laws** course may kindly be offered.
- C) **Building Information Modeling(BIM)** is a smart 3D model-based approach that provides Architects, Engineers, and Construction (AEC) Professionals with the knowledge and tools needed to plan, design, construct and manage buildings and infrastructure more effectively. So, introducing such course in the curriculum itself as laboratory course will give the confidence to execute Civil Engineering works promptly.

Hence, we request you to consider the above suggestion in the future curriculum design.


HOD/CIVIL


Vice Principal


Principal



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Lr. No. RIT/CIVIL/AU Comm./2021/01

06.08.2021

To
The Director,
Centre for Academic Courses,
Anna University, Chennai – 600025
Respected Madam/Sir,

Sub: Representation of Curriculum Gap in the existing curriculum R-2017 of Civil Engineering- Submission of suggestions to be included in curriculum content in the forthcoming R 2021 of Civil Engineering- reg.

We wish to submit the following report on the curricular gap analysis and identification carried out by the department of Civil Engineering for consideration and inclusion in the forthcoming AU R-2021 curriculum and syllabus of Civil Engineering.

- a) **Consolidated Report of Curriculum Gap Analysis of the AU R-2017 for Civil Engineering Streams is propounded to fill the Curricular Gaps in the Forthcoming AU R-2021.**

We request you to consider our suggestions while framing the regulation of AU R-2021 curriculum and syllabus of Civil Engineering.

Thank You


HoD/Incharge


Vice Principal


Principal



North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

Consolidated Report of Curriculum Gap Analysis of the AU R-2017 for Civil Engineering Streams is put forth to fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Civil Engineering department, analyzed and identify curricular gaps on a regular basis, taking into the account of current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Civil Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by (A) Addition/inclusion of topics suggested in existing units and (B) Introduction of Employability Enhancement courses.

A) Addition/inclusion of topics suggested in existing units for Curriculum R2017.

1.0) The **Structural Design and Drawing CE8703, syllabus** is extensive and the students are finding it difficult to understand advanced concrete and advanced steel design and drafting as a combined subject. The subject can be bifurcated into (i) **Advanced Concrete Design and Detailing** and (ii) **Advanced Steel Design and Detailing**.

1.1) In the new syllabus the following topic can be considered

i. **Advanced Concrete Design and Detailing**

a. Design of RCC Retaining Wall, Water Tank, Flat slabs, Grid Floor, Corbel, Raft Foundation and Pile Cap.

ii. **Advanced Steel Design and Detailing**

b. Design of Built up Column, Column Base Plate, Steel Roof Trusses, Plate Girders, Gantry Girders, Steel Water tank, Steel Chimneys and Wind load calculation for industry structures.

2.0) The **Estimation, Costing and Valuation Engineering CE8701**, shall be provided as theory cum laboratory course for enriched understanding.

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3.0) **Prestressed Concrete Course CE8011** shall be provided as **professional course** instead of **profession elective**. This course enhances the knowledge of the graduates and it was helpful for the students in their industrial career.

B) Introduction of Employability Enhancement courses.

1. As a Civil branch students if they learn **Construction Practices Laboratory**. In this laboratory the students are exposed to live projects which enhances their understanding and make them to be an industry ready products.

In the syllabus for **Construction Practice Laboratory** following topic can be included

Construction models:

- Masonry walls (Brick / Concrete block/Stone Masonary).
- Skeleton models (Basic Structural Elements of Structural Steel & Concrete).
- Live demonstration by skilled personals.
- Site Visit to Live Projects / Industry.
- Video demonstration of special construction techniques.
- Lectures from construction industry experts.

So, we request you to consider this suggestion for the future curriculum design.


HoD/Incharge


Vice Principal


Principal

**The Department of
Computer Science and
Engineering**



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RIT/ACADEMIC/CSE/AC/2021/01

04.08.2021

To

The Director
Centre for Academic Courses
Anna University
Chennai-25

Respected Sir,

Sub: Requisition to consider Suggestions/Enhancements – Future Regulation-
Syllabus - Reg.,

Warm Greetings from the Department of Computer Science and Engineering, Ramco Institute of Technology, Rajapalayam.

We have analyzed the curriculum gap in R2017 based on Industrial Needs and the career settlement of the future budding Engineers. We have examined and investigated the Theory Courses/laboratory Courses of the curriculum that may be enhanced for future regulation framework based on the Suggestions/Opinions from our Students Feedback, Faculty Feedback, Employer Feedback, Industrial/Higher Studies Pursuing Alumni Feedback and Stake holder's perception with their Competency.

1. The following courses can be included in the curriculum as professional core subjects
 - Object Oriented Programming using C++ in III Semester
 - Machine learning techniques using python in V Semester
2. Mini projects can be included right from the III semester onwards as part of exercises for all laboratory courses.
3. In the existing subjects of the present curriculum, the following modifications are suggested.

| Subject Code | Title | Inclusions Recommended |
|--------------|--------------------------------------|---|
| GE8151 | Problem Solving & Python Programming | <ul style="list-style-type: none">• More Focus can be considered in built-in libraries.• Packages and modules concepts like tkinter, NumPy, Pandas can be included. |
| CS8792 | Cryptography and Network Security | <ul style="list-style-type: none">• MD5 and Triple DES algorithm could be included to get more knowledge about the encryption standards.• Topics on Zero Knowledge, Concurrency and protocol security, Cryptographic Game Theory, Symbolic Security Analysis can be added. |

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

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|--------|---|---|
| CS8079 | Human Computer Interaction | <ul style="list-style-type: none"> • Software Tools, Interface Building Tools-Engineering Tools, and GUI Tool Kit Layer can be included. • Topics on Human Technology Symbiosis, Human-Environment Interactions; Ethics, High performance computing solutions using HCI, Privacy and Security may be added. |
| EC8093 | Digital Image Processing | <ul style="list-style-type: none"> • Image Registration and its applications in Computer vision and its application using opencv can be included. • Recent Topics like Biomedical Imaging, Computer Vision, image Segmentation/Classification, Multiresolution Techniques ,Remote Sensing, Scientific Imaging, Stochastic Models, Video Analysis may be added with some applications. |
| CS8493 | Operating Systems | <ul style="list-style-type: none"> • Kernel Structure- Shell structure of different OS like DOS, WINDOWS and Linux OS can be included. • Topics on High-performance disk layout Cooperative caching, Supporting mobile agents, Decentralized storage systems Transparent operating system support for super pages can be added. • Case study : Scheduling - Memory management - File systems - Inter Process Communication can be added. |
| CS8591 | Computer Networks | <ul style="list-style-type: none"> • The topics such as Link layer switches, MPLS, Enterprise Data center networking, Networking Trends. • QoS over Data Networks, basic wireless and mobile networking concepts. • A separate topic on Fundamentals of Heterogeneous Networks and UAV may be added. |
| CS8791 | Cloud Computing | <ul style="list-style-type: none"> • Python for cloud (Python for amazing Web service, Python for Google Cloud Platform, Python for Windows Azure and Python for Map reduce portion) and Zookeeper Programming Architecture may be included. • IoT cloud-based services using the Xively, Nimbits. |
| CS8451 | Design and Analysis of Algorithms | <ul style="list-style-type: none"> • Advance application level topics on NP problems also greedy algorithms may be added which will be very much useful for students. |
| EC8393 | Fundamentals of Data Structures in C (III Semester ECE) | <ul style="list-style-type: none"> • First two units cover the entire C programming concepts and remaining three units include the data structure concepts in the current syllabus. |

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| | | <ul style="list-style-type: none"> • It may consider giving C programming as a separate course to make the students to understand the C concepts clearly, since in first semester, only python programming course is available. |
| CS8492 | Database Management Systems | <ul style="list-style-type: none"> • Unit-4 (Query optimization algorithms) and Unit-5 syllabus can be reduced. • NoSQL databases can be included into the syllabus. |
| CS8392 | Object oriented Programming | <ul style="list-style-type: none"> • In Unit V – Applet may be removed. Instead Java Collections can be included in to the Syllabus to integrate data structures with object oriented concepts. |

4. The existing course order could be changed as the suggested changes given in the table below.

| Semester | Existing Subject Order as per Regulation R2017 | Suggested changes in R2017 & Future |
|----------|---|---|
| II | <ul style="list-style-type: none"> • CS8251 - Programming in C • CS8261 - C Programming Laboratory | <p><u>No Changes:</u></p> <ul style="list-style-type: none"> • Programming in C • C Programming Laboratory <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Data structures • Data Structures Laboratory in Python. <p>The above courses could be shifted from III semester to II and for the Data structure laboratory Python can be considered.</p> |
| III | <ul style="list-style-type: none"> • CS8391 - Data Structures • CS8381 - Data Structure Laboratory • CS8392 - Object Oriented Programming (Java) • CS8383 - Object Oriented Programming Laboratory (Java) | <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Data structures (may be Shifted to II semester). In addition to that Object Oriented Programming (C++) may be introduced instead of OOPS using JAVA. • Object Oriented Programming Laboratory (C++) may be introduced. • Design and Analysis of Algorithm (may be Shifted to III semester from IV semester) • Design and Analysis of Algorithm Laboratory (Python). • Linear Algebra • Linear Algebra Laboratory using Python |
| IV | <ul style="list-style-type: none"> • CS8451- Design and Analysis of Algorithms • CS8493 -Operating System • CS8461- Operating System Laboratory | <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Java Programming • Java Programming Laboratory • Web Design Lab <p>The above courses may be added.</p> <p><u>No Changes:</u></p> <ul style="list-style-type: none"> • Operating System • Operating System Laboratory |

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|---|---|--|
| | | The above courses may be kept as such in the IV semester |
| V | <ul style="list-style-type: none"> • EC8691-Microprocessors and Microcontrollers. • EC8681-Microprocessors and Microcontrollers Laboratory. • CS8581-Networks Laboratory. | <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Internet Programming (Shifted from VI to V semester) • Internet Programming Laboratory (Shifted from VI to V semester) • Machine Learning Techniques • Machine Learning techniques laboratory (Python) <p>The above courses may be added.</p> <p><u>No Changes:</u></p> <ul style="list-style-type: none"> • Microprocessor • Microprocessor Laboratory <p>The above courses may be kept as such in the V semester.</p> |
| VI | <ul style="list-style-type: none"> • CS8651-Internet Programming • CS8661- Internet Programming Laboratory • CS8662 – Mobile Application Laboratory • CS8611 – Mini Project | <p><u>No Changes:</u></p> <ul style="list-style-type: none"> • Mobile App Laboratory • Mini-Project <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Network Laboratory (Shifted from V to VI semester) |
| VII | <ul style="list-style-type: none"> • CS8791 – Cloud Computing • CS8711 – Cloud Computing Laboratory • IT8761 – Security Laboratory | <p><u>No Changes:</u></p> <ul style="list-style-type: none"> • Cloud Computing Laboratory • Security Laboratory <p><u>Changes to be done:</u></p> <ul style="list-style-type: none"> • Big data Analytics Laboratory |
| <p><u>Note:</u> <i>No changes *- Implies the course may be kept in the same semester.</i> <i>Changes to be done*-Implies the course may be preponed / postponed and new courses.</i></p> | | |

5. As far as the elective and open electives subjects are concerned, the following emerging area subjects could be added to meet the vision of Futuristic Technologies.

Electives

- Data Science
- Cloud Computing Services for IOT
- Deep Learning using Tensor Flow
- Cyber Security and Cyber Law
- Block Chain Technology
- Full stack development
- Virtualization from VMWare
- Automation testing with Lab Component Course
- Web Design using Python
- Cyber security with Python

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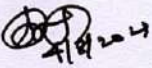
- Data Visualization
- Augmentation with VR
- Finance management and Logistics
- Federated learning / Transfer learning
- Explainable XAI and Trustworthy based security applications
- Natural Language Processing for HCI
- Quantum Computing
- DevNet
- Secure heterogeneous UAV networks

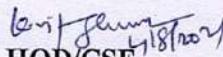
Open electives

- Robot Operating System and Programming
- Python Programming for Biological Data Representation
- Computer Vision
- Computational Genomics
- Electric vehicle security
- IOT Architecture for Smart City Design


The points that have been shared above may please kindly be considered in forthcoming regulation for the inclusion that may be helpful for the student community.

Thanking You,


 14/8/2021
 10/08/2021
 4/8/21
Faculty Coordinator


 14/8/2021
HOD/CSE


 14/8/21
VICE PRINCIPAL


 14/8/21
PRINCIPAL

1. Dr. S. Vimal
2. Ms. P. JothiThilaga
3. Dr. I. Gethzi Ahila Poornima



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23.08.2022

To

The Director,
Centre for Academic Courses,
Anna University,
Chennai-600 025.

Respected Sir/Madam,

Sub: B.E. Electronics and Communication Engineering-CS3351 Data Structure Syllabus and

B.E. Electrical and Electronics Engineering- CS3354-Data structures and OOPS-Reg

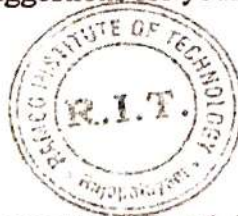
We received the B.E/B.TECH Anna university syllabus for the Regulation-2021. Here we would like to point out the following for your kind consideration.

i)CS3351-Data Structures-ECE (III Semester)

The syllabus of B.E-ECE (III Semester) subject CS3351-Data Structures is fully comprise of Data structures implementation in C Programming Language as it appears from the given Text Books. For this, the students need to know about the C concepts such as Arrays, Functions, Structures and Pointers to study this subject, but the students don't have prior knowledge about C programming at all. In the first semester they studied only Python Programming Language. So it will be very difficult for the second year ECE students to understand the subject without the knowledge of C programming. It is not possible to learn C Programming language as prerequisites for this course, which is the time consuming process.

The second year CSE students also have the same subject (CS3351-Data Structures) in their Third Semester, but the CSE students already studied a subject Programming in C in their Second semester. Now in the Regulation 2021 the result is based on Relative grading process it will create a huge impact on the result of ECE students, as both CSE and ECE are weighted on the same scale as both bear the same subject code.

Herewith we have provided suggestions for your kind consideration.



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23/8/22
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Virudhunagar District, Tamil Nadu. Tel : 04563 233400 Rajapalayam - 626 117.
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



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Fax / Dir.: 22352273

**CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY**



**DR. S. HOSIMIN THILAGAR
DIRECTOR**

Letter No.2313/AU/CAC/2023

To

The Controller of Examinations

Anna University

Chennai – 600 025.

Sir,

Sub: AU – Centre for Academic Courses – B.E. Computer Science and Engineering
Advancement Courses - List of Students – Approval - Reg.

Ref: Letter No.RIT/CSE/2023/02, dated: 07.07.2023.

With reference to the letter cited above, as per clause 4.9 of the Regulations 2017,

"The students satisfying the following conditions shall be permitted to carry out their final semester Project work for six months in industry/research organizations. The student should not have current arrears and shall have CGPA of 7.50 and above. The student shall undergo the eighth semester courses in the sixth and seventh semesters. The Head of Department, in consultation with the faculty handling the said courses shall forward the proposal recommended by the Head of Institution to the Controller of Examinations through the Director, Centre for Academic courses for approval at least 4 weeks before the commencement of the sixth semester of the programme for approval".

Hence, permission is hereby granted to the VII semester student listed in encl:1 to undergo an additional course, "**GE8073 – Fundamentals of Nanoscience**", during the session July 2023 - November 2023 in the Department of Computer Science and Engineering, Ramco Institute of Technology, Virudhunagar - 626 117 under Regulations 2017.

The candidate are permitted to undergo advanced registration of courses in the VI and VII semester provisionally, subject to the condition that their course advancement registration stands cancelled, if the candidate are found to have arrears in the V and VI semester and also if they fail to meet CGPA of 7.50 and above, after the declaration of examination results. Such student are instructed to undergo those provisionally registered elective courses in their VIII semester. In this regard an undertaking shall be obtained from the students whoever is eligible for provisional registration of courses in advancement.

Yoursfaithfully,

U. A. T. / 7 / 23
DIRECTOR

Encl 1: List of students

Copy to:

1. The Principal, Ramco Institute of Technology, North Venganallur, Ayyanarkovil Road, Rajapalayam, Virudhunagar - 626 117.
2. The Stock File CAC.



RAMCO INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR - 2022-2023

ADVANCEMENT COURSE STUDENTS LIST

07.07.2023

The following students are interested to undergo the VIII Semester course in VII Semester. The course code and course title is "GE8073 Fundamentals of Nanoscience".

| Sl. No. | Reg. No. | Name of the Student | CGPA upto V Semester |
|---------|--------------|-----------------------|----------------------|
| 1. | 953620104001 | AANANDA GANESAN R | 8.25 |
| 2. | 953620104004 | BALAMURALIKRISHNA R N | 8.26 |
| 3. | 953620104005 | BHUVANESHWARI S | 8.46 |
| 4. | 953620104006 | BOWYAA L | 8.32 |
| 5. | 953620104007 | DHARANI RAJ V | 8.1 |
| 6. | 953620104008 | DHIRAJ N | 8.44 |
| 7. | 953620104009 | DIVYA M K | 8.62 |
| 8. | 953620104010 | GAYATHRI DEVI S | 9.01 |
| 9. | 953620104012 | GOPIY K J | 8.16 |
| 10. | 953620104013 | GOWTHAM KARTHIKEYAN M | 7.91 |
| 11. | 953620104014 | HARINISRIVALLI V | 8.34 |
| 12. | 953620104015 | HARSHA R | 8.8 |
| 13. | 953620104016 | IJAAS AHAMAD M | 7.89 |
| 14. | 953620104018 | JELENA JOPHIN J | 8.02 |
| 15. | 953620104021 | JOTHI LINGAPANDIAN M | 8.65 |
| 16. | 953620104022 | KAMINI K | 8.63 |
| 17. | 953620104024 | KARUNYA V | 8.09 |
| 18. | 953620104025 | KEERTHANA V | 8.17 |
| 19. | 953620104026 | K SYED ASLAM | 7.84 |
| 20. | 953620104030 | MUTHU BRIJESH R | 8.09 |
| 21. | 953620104031 | MUTHU KUMAR K | 8.93 |
| 22. | 953620104032 | NISHASHREE M | 8.3 |
| 23. | 953620104033 | PARANTHAMAN J | 8.83 |
| 24. | 953620104034 | PAVITHRA K | 8.89 |
| 25. | 953620104035 | POOJALAKSHMI T | 8.41 |
| 26. | 953620104036 | P PREETHA | 8.34 |



07/07/23

| | | | |
|-----|--------------|--------------------|------|
| 27. | 953620104037 | PRAVEEN S | 7.8 |
| 28. | 953620104038 | RAGAVI V G | 8.7 |
| 29. | 953620104039 | RAJADHARSHINI S | 8.64 |
| 30. | 953620104040 | RAJALAKSHMI R U | 8.98 |
| 31. | 953620104041 | RAJASEKARAN T | 7.75 |
| 32. | 953620104042 | SARAVANA JOTHI G | 9.11 |
| 33. | 953620104043 | SARUMATHI M | 8.57 |
| 34. | 953620104047 | SHAKTHI S | 8.31 |
| 35. | 953620104048 | SHRI DHEIVA R | 9.05 |
| 36. | 953620104050 | SIVAKUMAR M | 8.6 |
| 37. | 953620104051 | SIVAKUMAR P | 9.11 |
| 38. | 953620104052 | SOWMIYA V | 8.26 |
| 39. | 953620104053 | SRINIDHI R | 8.8 |
| 40. | 953620104054 | S SHANMUGAPRIYA | 8.91 |
| 41. | 953620104057 | THARANI M N | 8.66 |
| 42. | 953620104058 | VENESHA L | 8.94 |
| 43. | 953620104059 | VINO A | 7.91 |
| 44. | 953620104060 | VISHNUPRIYA S | 8.66 |
| 45. | 953620104301 | BALA MURUGAN K | 8.27 |
| 46. | 953620104304 | SATHYA NARAYANAN B | 8.03 |

Ms. G. Sakthi Priya
Class Advisor
(Ms. G. Sakthi Priya)

SAM 7/7/23
Course Handling Faculty

Antony A 7/7/23
HOD/CSE **CoE** *7/7/23*

ST 7/12/23
Vice Principal

7/7/23
Principal



PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.



RAMCO INSTITUTE OF TECHNOLOGY

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NAAC Accredited and An ISO 9001:2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE, MECH



RIT/CSE/2023/02

01.07.2023

To
The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600 025.

Sir,

Sub: Requesting approval – Undergo Eighth Semester Courses in Seventh Semester – Fulfilling the Anna University Regulations - Reg.

Ref: Affiliated Institutions - Anna University Regulations 2017 – Clause 4.9

As per Anna University Regulation 2017 (Clause 4.9), the student shall undergo eighth semester courses in the sixth and seventh semesters. In our department, the eligible students (who got 7.5 CGPA and above as per 4th semester result) in VII Semester B.E. CSE are interested to study the eighth semester courses in advance.

The subjects are listed below

| Sl. No. | Course Code | Course Name | Semester of Study | Credits |
|---------|-------------|-----------------------------|-------------------|---------|
| 1. | GE8073 | Fundamentals of Nanoscience | VII | 3 |

Hereby, we request your kind approval.

Encl: 1. Proof for CGPA upto 4th semester

2. Requisition letter signed by course handling faculty, recommended by Head of the Department and Head of the Institution

Thanking you,

Yours faithfully,

K. J. Jeyaraj
17/7/2023

HOD/CSE

- DD -
Vice Principal

M. J. Jeyaraj
Principal 17/7/23

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in





RAMCO INSTITUTE OF TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University
Accredited by NAAC & An ISO 9001:2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR - 2022-2023

ADVANCEMENT COURSE STUDENTS LIST

01.07.2023

The following students are interested to undergo the VIII Semester course in VII Semester. The course code and course title is "GE8073 Fundamentals of Nanoscience".

| Sl. No. | Reg. No. | Name of the Student | CGPA upto IV Semester |
|---------|--------------|-----------------------|-----------------------|
| 1. | 953620104001 | AANANDA GANESAN R | 8.43 |
| 2. | 953620104004 | BALAMURALIKRISHNA R N | 8.54 |
| 3. | 953620104005 | BHUVANESHWARI S | 8.63 |
| 4. | 953620104006 | BOWYAA L | 8.58 |
| 5. | 953620104007 | DHARANI RAJ V | 8.51 |
| 6. | 953620104008 | DHIRAJ N | 8.57 |
| 7. | 953620104009 | DIVYA M K | 9.01 |
| 8. | 953620104010 | GAYATHRI DEVI S | 9.22 |
| 9. | 953620104012 | GOPIY K J | 8.44 |
| 10. | 953620104013 | GOWTHAM KARTHIKEYAN M | 8.09 |
| 11. | 953620104014 | HARINISRIVALLI V | 8.51 |
| 12. | 953620104015 | HARSHA R | 9.08 |
| 13. | 953620104016 | IJAAS AHAMAD M | 8.18 |
| 14. | 953620104018 | JELENA JOPHIN J | 8.3 |
| 15. | 953620104021 | JOTHI LINGAPANDIAN M | 8.93 |
| 16. | 953620104022 | KAMINI K | 8.85 |
| 17. | 953620104024 | KARUNYA V | 8.47 |
| 18. | 953620104025 | KEERTHANA V | 8.55 |
| 19. | 953620104026 | K SYED ASLAM | 8.16 |
| 20. | 953620104030 | MUTHU BRIJESH R | 8.26 |
| 21. | 953620104031 | MUTHU KUMAR K | 9 |
| 22. | 953620104032 | NISHASHREE M | 8.60 |
| 23. | 953620104033 | PARANTHAMAN J | 8.92 |
| 24. | 953620104034 | PAVITHRA K | 9.08 |
| 25. | 953620104035 | POOJALAKSHMI T | 8.57 |
| 26. | 953620104036 | P PREETHA | 8.67 |



| | | | |
|-----|--------------|--------------------|------|
| 27. | 953620104037 | PRAVEEN S | 8.11 |
| 28. | 953620104038 | RAGAVI V G | 8.91 |
| 29. | 953620104039 | RAJADHARSHINI S | 8.67 |
| 30. | 953620104040 | RAJALAKSHMI R U | 9.13 |
| 31. | 953620104041 | RAJASEKARAN T | 8.02 |
| 32. | 953620104042 | SARAVANA JOTHI G | 9.27 |
| 33. | 953620104043 | SARUMATHI M | 8.65 |
| 34. | 953620104047 | SHAKTHI S | 8.58 |
| 35. | 953620104048 | SHRI DHEIVA R | 9.16 |
| 36. | 953620104050 | SIVAKUMAR M | 8.93 |
| 37. | 953620104051 | SIVAKUMAR P | 9.25 |
| 38. | 953620104052 | SOWMIYA V | 8.42 |
| 39. | 953620104053 | SRINIDHI R | 9.08 |
| 40. | 953620104054 | S SHANMUGAPRIYA | 9.14 |
| 41. | 953620104058 | VENESHA L | 9.06 |
| 42. | 953620104059 | VINO A | 8.16 |
| 43. | 953620104060 | VISHNUPRIYA S | 8.95 |
| 44. | 953620104301 | BALA MURUGAN K | 8.52 |
| 45. | 953620104304 | SATHYA NARAYANAN B | 8.35 |

(Signature)
Class Advisor
 (Ms. G. Sakthi Priya)

(Signature)
Course Handling Faculty

(Signature)
HOD/CSE
(Signature)
CoE
 1/7/23

- 01 -
Vice Principal

(Signature)
Principal
 1/7/23





RAMCO INSTITUTE OF TECHNOLOGY

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NAAC Accredited and An ISO 9001:2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE, MECH



RIT/CSE/2023/01

13.06.2023

To

The Director,

Centre for Academic Courses,

Anna University,

Chennai – 600 025.

Sir,

Sub: Requisition for doing Online course in lieu of courses in honors with specialization- Reg.

Ref: Non- Autonomous Affiliated Colleges – Amendments to Regulations 2021 – Clause 4.10

As per Anna University Amendments to Regulation 2021 (Clause 4.10), the student shall earn a maximum of six credits through online course. In this regard, the following students are willing to do the NPTEL online course “Ethical Hacking” (https://onlinecourses.nptel.ac.in/noc23_cs75/preview) for their honors degree course in B.E. / B. Tech. (Hons) Specialization in Cyber Security and Data Privacy vertical.

| Sl. No. | Register Number | Name of the Student | Semester of Study | Credits |
|---------|-----------------|---------------------|-------------------|---------|
| 1. | 953621104032 | Pranav Kumar S | V | 3 |
| 2. | 953621104042 | Shanmugapriya M | V | 3 |
| 3. | 953621104053 | Thilothamai K | V | 3 |

Furthermore, this course begins on July 24, 2023, and registration expires on July 31, 2023. Hereby, we request your permission to do the above-mentioned online course for their honour degree courses so that the students can join on time.

Encl:

1. Requisition letter from concerned students
2. Committee Constituent letter
3. Confirmation letter signed by the committee members, students and the head of the institution to ensure that the student had not studied the same course and would not repeat it again in future.

Thanking you,
Yours faithfully,

b.n.jayaram
13/6/2023
HOD/CSE

[Signature]
13/6/23
Principal

RAMCO INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering

Academic Year: 2023- 2024. (Odd Semester)

Date: 13.06.2023

As per Anna University Amendments to Regulation 2021 (Clause 4.10), the following students are willing to do NPTEL online course "Ethical Hacking" (https://onlinecourses.nptel.ac.in/noc22_cs13/preview) for their honors course in B.E. / B. Tech. (Hons) Specialization in Cyber Security and Data Privacy vertical.

| Sl. No. | Register Number | Name of the Student | Semester of Study | Credits |
|---------|-----------------|---------------------|-------------------|---------|
| 1. | 953621104032 | Pranav Kumar S | V | 3 |
| 2. | 953621104042 | Shanmugapriya M | V | 3 |
| 3. | 953621104053 | Thilothamai K | V | 3 |

It is hereby assured that the aforementioned students will not take this course as either professional elective or an open elective.

Student Members

| Sl. No. | Register Number | Name of the Student | Signature |
|---------|-----------------|---------------------|-------------------------|
| 1. | 953621104032 | Pranav Kumar S | <i>S. Pranav Kumar</i> |
| 2. | 953621104042 | Shanmugapriya M | <i>M. Shanmugapriya</i> |
| 3. | 953621104053 | Thilothamai K | <i>K. Thilothamai</i> |

Committee Members

| Sl. No. | Name of the Committee Member | Designation/Department | Signature |
|---------|------------------------------|------------------------|---------------------------------|
| 1. | Dr.K.Vijayalakshmi | Professor & Head/CSE | <i>K. Vijayalakshmi 13/6/23</i> |
| 2. | Mr.C.A.Yogaraja | Asst Prof(SG)/CSE | <i>C.A. Yogaraja 13/6/23</i> |
| 3. | Dr.S.Kannan | Professor & Head/EEE | <i>S. Kannan 13/06/23</i> |


Principal
13/6/23

RAMCO INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering

Academic Year: 2023- 2024. (Odd Semester)

Committee for Online Course

Class: III Semester B.E.

Date: 10.06.2023

Head of the Committee: Dr.L.Ganesan, Principal, Ramco Institute of Technology

Faculty members:

1. Dr. K. Vijayalakshmi. Professor & Head/CSE
2. Mr.C.A.Yogaraja, AP(SG)/CSE
3. Dr.S.Kannan, Professor & Head/EEE

Student members:

1. Pranav Kumar S (Reg.No: 953621104032)
2. ShanmugPriya M (Reg.No: 953621104042)
3. Thilothamai K (Reg.No: 953621104053)

P. V. J. Kumar
HOD /CSE 10/6/2023

Dr. L. Ganesan
Principal
10/6/23

From

Pranav Kumar S (Reg.No: 953621104032),
Shanmugapriya M (Reg.No: 953621104042) &
Thilothamai K (Reg.No: 953621104053),
II Year B.E. CSE,
Ramco Institute of Technology,
Rajapalayam.

To

The Principal,
Ramco Institute of Technology,
Rajapalayam.


13 6 23

Through

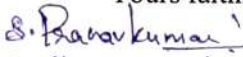
The Head of the Department,
Department of CSE,
Ramco Institute of Technology,
Rajapalayam

Respected Sir,

Sub: Requisition for doing online course in lieu of B.E honours courses- Reg.,

As per Anna University regulation R2021, the students can earn maximum of 6 credits in online mode (SWAYAM platform), out of the 18 credits required to earn B.E honours degree as approved by Centre for Academic Courses. We are willing in enrolling in the NPTEL online course "Ethical Hacking" (https://onlinecourses.nptel.ac.in/noc23_cs75/preview) for our honours degree course in B.E. / B. Tech. (Hons) Specialization in Cyber Security and Data Privacy vertical. Registration for this course closes on 31.07.2023, and the course begins on 24.07.2023. Kindly give us permission to register and carry out the aforementioned course. We assure that we will not take this course in future either as professional Elective or Open Elective.

Yours faithfully,


M. Shanmugapriya
K. Thilothamai

Date: 10.06.2023

Place: Rajapalayam

[Pranav Kumar S (Reg.No: 953621104032),
Shanmugapriya M (Reg.No: 953621104042)
Thilothamai K (Reg.No: 953621104053)]



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The Suggestions are

- a) AD3251 Data Structures Design- (II Semester Artificial Intelligence and Data Science)

In this course, Data structures concepts are implemented in python. In the same way we request you to kindly modify the syllabus of Data Structures in Python for ECE and a separate subject code may be assigned.

(or)

- b) Kindly include two units for C programming in the present subject for ECE and delete last two units and a separate subject code may be assigned.

ii) CS3354 Data Structures and OOPS (III Semester EEE)

The course title is Data structures and OOPS but the Object oriented programming concepts is not at all included in the syllabus. It covers procedural oriented concepts and Data Structures. Here also it emphasizes the implementation part is only by C language.

The suggestions are

- a) Kindly change the course title as "C Programming and Data structures"

(or)

- b) Kindly reframe the syllabus including OOPS concept.

These are some of the subjects we are handling (CSE Department) for ECE and EEE students. Since we handled them python during their first semester, we know very well about their subject knowledge in C of all branch students.

It is requested that the points mentioned above and the suggestion given by us may please be considered favorably and all the affiliated colleges may face the same problems. We hope you might have received similar feedback from other colleges too.

Hence we request you to revise the syllabus for the betterment of students, at the earliest. Since the classes commenced already, as per our academic schedule.

Thanking you,



Yours faithfully,

M
23/8/22
PRINCIPAL

Enclosures:

- i) Syllabus:CS3351 Data Structure (III Semester ECE)
- ii) Syllabus:CS3354 Data Structures and OOPS (III Semester EEE)

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



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RIT/CSE/2022/02

14.06.2022

To

The Director,

Centre for Academic Courses,

Anna University,

Chennai – 600 025.

Sir,

Sub: Requesting approval – Undergo Eighth Semester Courses in Seventh Semester – Fulfilling the Anna University Regulations - Reg.

Ref: Affiliated Institutions - Anna University Regulations 2017 – Clause 4.9

As per Anna University Regulation 2017 (Clause 4.9), the student shall undergo eighth semester courses in the sixth and seventh semesters. In our department, the eligible students (who got 7.5 CGPA and above as per 4th semester result) in VII Semester B.E. CSE are interested to study the eighth semester courses in advance.

The subjects are listed below

| Sl. No. | Course Code | Course Name | Semester of Study | Credits |
|---------|-------------|-----------------------------|-------------------|---------|
| 1. | GE8073 | Fundamentals of Nanoscience | VII | 3 |

Hereby, we request your kind approval.

Encl: 1. Proof for CGPA upto 4th semester

2. Requisition letter signed by course handling faculty, recommended by Head of the Department and Head of the Institution

Thanking you,

Yours faithfully,


HOD/CSE


Vice Principal


Principal

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

RAMCO INSTITUTE OF TECHNOLOGY
ADVANCEMENT COURSE STUDENTS LIST

14.06.2022

The following students are interested to undergo the VIII Semester course in VII Semester. The course code and course title is "GE8073 Fundamentals of Nanoscience".

| Sl. No. | Reg. No. | Name of the Student | CGPA upto IV Semester |
|---------|--------------|---------------------|-----------------------|
| 1. | 953619104002 | AJITHA R | 8.73 |
| 2. | 953619104003 | AKILA G | 7.85 |
| 3. | 953619104004 | ANNLYN SARAH J P | 8.22 |
| 4. | 953619104006 | ATHIVIGNESHKUMAR N | 8.91 |
| 5. | 953619104007 | BHUJA SHRI R | 8.25 |
| 6. | 953619104009 | DHARINI B | 8.03 |
| 7. | 953619104010 | DHARSANA R | 8.02 |
| 8. | 953619104011 | DINESH KUMAR M | 8.41 |
| 9. | 953619104012 | GIFTY SHARON K | 8.72 |
| 10. | 953619104013 | GOPI SANKAR P | 8.89 |
| 11. | 953619104014 | HARIHARAN M | 8.07 |
| 12. | 953619104015 | HARINI M | 8.85 |
| 13. | 953619104016 | IVARAJ C | 7.73 |
| 14. | 953619104017 | JAYA DHARSHINI G | 9.5 |
| 15. | 953619104018 | JAYARANI M | 8.43 |
| 16. | 953619104019 | JAYA SHRI K K | 8.2 |
| 17. | 953619104020 | KANTHIMATHINATHAN A | 8.08 |
| 18. | 953619104021 | KAVITHANJALI K | 8.03 |
| 19. | 953619104022 | KISHORE KUMAR S | 8.38 |
| 20. | 953619104023 | KRISHNA K | 8.45 |
| 21. | 953619104025 | LAVANYADEVI K | 8.11 |
| 22. | 953619104026 | LOKESH IYYAPPAN A | 8.01 |
| 23. | 953619104027 | MALINI M | 8.18 |
| 24. | 953619104028 | MATHESHWARAN N | 7.95 |
| 25. | 953619104029 | MOHAMED SHEHIN S | 7.67 |
| 26. | 953619104030 | MUTHUARUNA C | 8.47 |
| 27. | 953619104032 | RATHESH PRAVEEN P | 7.89 |
| 28. | 953619104033 | SAHANA SRI R | 8.13 |

Handwritten signature and date
14.06.22

| | | | |
|-----|---------------|--------------------------------|------|
| 29. | 953619104034 | SAKTHISWATHI A | 9.21 |
| 30. | 953619104035 | SANGEETHA P | 8.91 |
| 31. | 953619104036 | SARAVANAKUMAR K | 7.73 |
| 32. | 953619104037 | SHRIYA R | 8.41 |
| 33. | 953619104038 | SOPHIASREE K | 9.41 |
| 34. | 953619104039 | SRIRAM K | 8.12 |
| 35. | 953619104040 | SRI RAMAKRISHNAN J | 7.67 |
| 36. | 953619104041 | SWATHIKA B | 8.75 |
| 37. | 953619104042 | SWATHY SANTHOSH | 7.72 |
| 38. | 953619104043 | THARINI K | 8.51 |
| 39. | 953619104044 | THARUNKUMAR B | 8.08 |
| 40. | 953619104045 | ULAGESWARAN T | 7.74 |
| 41. | 953619104046 | VAISHNAVI V S | 8.59 |
| 42. | 953619104047 | VAISHNAVIRAJAM R | 8.3 |
| 43. | 953619104048 | VIDHYA V | 8.77 |
| 44. | 953619104049 | VIGNESH A | 8.37 |
| 45. | 953619104050 | VIJAIBALAJI N | 7.76 |
| 46. | 953619104051 | VIJAY AADHITHYA M | 8.72 |
| 47. | 9536191 04052 | VIJAYALAKSHMI R | 8.54 |
| 48. | 9536191 04053 | VISWAJITH SAAIRAM S K | 8.1 |
| 49. | 9536191 04054 | VITHYA THARANI M | 8.13 |
| 50. | 9536191 04055 | YUVAASR I R K | 8.23 |
| 51. | 953619104301 | JAYA RAMA SANKARA MOORTHY J | 8 |
| 52. | 953619104302 | KOWSHIK R | 8.02 |

S. S. Lakshmi
14/16/22
Class Advisor

J. R. A.
14/16/22
Course Handling Faculty

K. J. S.
14/16/22
HOD

A. S. A.
14/16/22
Exam cell Coordinator

K. J. S.
14/16/22
Professor In-charge
(Exam Cell)

J. R. A.
14/16/22
Vice Principal

J. R. A.
14/16/22
Principal

PRINCIPAL
Ramco Institute of Techno
Rajapalayam - 626 117.



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 Certified Institution
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29.12.2022

RIT/CSE/VAC/2022/03

To
The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600 025.

Sir,

Sub: Requesting conduction – Value Added Courses – Schedule – Reg.
Ref: Affiliated Institution – Guidelines for conducting Value Added Courses – Anna
University Regulations 2017
Letter No. 5633/AU/VA/CAC/FICE/2022 dated 07.12.2022

With reference to the above, we had proposed to offer the value added course “Android Development- IVA097” with the schedule and got the approval for the same to our V Semester B.E Computer Science and Engineering Students for the academic year 2022 – 2023 on 10.12.2022. Due to time constraints, we could not conduct the same in V semester. Our III year CSE students have completed V semester theory examinations on 29.12.2022 and the laboratory schedule starts from 21.01.2023. In the meantime, (06.01.2023 to 19.01.2023) we have planned to conduct the value added course (under the starting of VI semester). The updated schedule (contains the details of course handling faculty, sessions of theory and practical, assessment procedure and evaluation team) of the proposed value added courses are submitted for your reference.

Hereby, we request your kind approval to conduct this value added course to our VI semester students as per the schedule attached.

Thanking you,

Yours faithfully,

[Signature]
30/12/22
HOD/CSE

[Signature]
30/12/22
Vice Principal

[Signature]
30/12/22
Principal

List of Encl:

1. Requisition Letter for VAC
2. Approval letter for VAC
3. Name list of the students
4. New schedule for both theory and practical sessions
5. Previous Schedule for both theory and practical sessions.

Cc:

The Chairman,
Faculty of Information and Communication Engineering,
Center for Academic Courses,
Anna University

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

RAMCO INSTITUTE OF TECHNOLOGY**Name List - III Year Computer Science and Engineering**

| Sl.No | Register Number | Name of the student |
|-------|-----------------|-----------------------|
| 1 | 953620104001 | AANANDA GANESAN R |
| 2 | 953620104002 | ABINAYA M |
| 3 | 953620104003 | AKHASH ARAVIND P |
| 4 | 953620104004 | BALAMURALIKRISHNA R N |
| 5 | 953620104005 | BHUVANESHWARI S |
| 6 | 953620104006 | BOWYAA L |
| 7 | 953620104007 | DHARANI RAJ V |
| 8 | 953620104008 | DHIRAJ N |
| 9 | 953620104009 | DIVYA M K |
| 10 | 953620104010 | GAYATHRI DEVI S |
| 11 | 953620104011 | GNANAGURU VIGNESH J |
| 12 | 953620104012 | GOPIY K J |
| 13 | 953620104013 | GOWTHAM KARTHIKEYAN M |
| 14 | 953620104014 | HARINISRIVALLI V |
| 15 | 953620104015 | HARSHA R |
| 16 | 953620104016 | IJAAS AHAMAD M |
| 17 | 953620104017 | JEGADESH B |
| 18 | 953620104018 | JELENA JOPHIN J |
| 19 | 953620104019 | JOE ALAN R S |
| 20 | 953620104021 | JOTHI LINGAPANDIAN M |
| 21 | 953620104022 | KAMINI K |
| 22 | 953620104023 | KARTHIKEYAN B |
| 23 | 953620104024 | KARUNYA V |
| 24 | 953620104025 | KEERTHANA V |
| 25 | 953620104026 | K SYED ASLAM |
| 26 | 953620104027 | KUMAR M |
| 27 | 953620104028 | LAKSHMI PRIYA G |
| 28 | 953620104029 | MUGESH M |
| 29 | 953620104030 | MUTHU BRIJESH R |
| 30 | 953620104031 | MUTHU KUMAR K |
| 31 | 953620104032 | NISHASHREE M |
| 32 | 953620104033 | PARANTHAMAN J |
| 33 | 953620104034 | PAVITHRA K |
| 34 | 953620104035 | POOJALAKSHMI T |
| 35 | 953620104036 | P PREETHA |

| | | |
|----|--------------|---------------------|
| 36 | 953620104037 | PRAVEEN S |
| 37 | 953620104038 | RAGAVI V G |
| 38 | 953620104039 | RAJA DHARSHINI .S |
| 39 | 953620104040 | RAJALAKSHMI R U |
| 40 | 953620104041 | RAJASEKARAN T |
| 41 | 953620104042 | SARAVANA JOTHI G |
| 42 | 953620104043 | SARUMATHI M |
| 43 | 953620104044 | SATHISH KANNAN M |
| 44 | 953620104045 | SATHISHKUMAR K |
| 45 | 953620104046 | SHAKTHEE SARAVANA M |
| 46 | 953620104047 | SHAKTHI S |
| 47 | 953620104048 | SHRI DHEIVA R |
| 48 | 953620104049 | SIVAGURUNATHAN G |
| 49 | 953620104050 | SIVAKUMAR M |
| 50 | 953620104051 | SIVAKUMAR P |
| 51 | 953620104052 | SOWMIYA V |
| 52 | 953620104053 | SRINIDHI R |
| 53 | 953620104054 | S SHANMUGAPRIYA |
| 54 | 953620104055 | SUBHIKSHA G |
| 55 | 953620104056 | SUKUMARAN G |
| 56 | 953620104057 | THARANI M N |
| 57 | 953620104058 | VENESHA L |
| 58 | 953620104059 | VINO A |
| 59 | 953620104060 | VISHNUPRIYA S |
| 60 | 953620104301 | BALAMURUGAN K |
| 61 | 953620104302 | ILAYA BHARATHI S |
| 62 | 953620104303 | RAAMAKRISHNAN V R |
| 63 | 953620104304 | SATHYA NARAYANAN B |
| 64 | 953620104305 | SHANKAR S K |
| 65 | 953620104306 | SUBRAMANI LOKESH |
| 66 | 953620104701 | HARINI PRIYA S |

A.S.P.
29/12/2021
Class Adviser

P. V. S.
29/12/2021
HOD-CSE

RAMCO INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
VALUE ADDED COURSE DETAILS

Title of the Course: **Android development**

Year / Branch / Semester: **III / Computer Science and Engineering / V**

Course Handling Faculty:

Internal Faculty:

1. **Mr.C.A.Yogaraja, AP/CSE,**
Certified Educator, Android Educator Program by Google
2. **Mr.K.Vignesh Saravanan, AP/CSE,**
Certified Educator, Android Educator Program by Google

| Hour | Date/Day | THEORY (1 Period) | PRACTICAL (2 Periods) |
|---|------------|---|---|
| UNIT I : Kotlin basics | | | |
| 1 – 3 | 24.09.2022 | Operators - Data types - Variables - Conditionals - Lists and arrays | Server Setup - Setting up Kotlin and Android environment. Simple Programs using Kotlin basics |
| 4 – 6 | 25.09.2022 | Null safety - Functions in Kotlin - Compact functions | Kotlin programs using functions. Programs for filtering list |
| 7 – 9 | 01.10.2022 | Lambdas and higher-order functions - List filters | |
| 10 – 12 | 02.10.2022 | Classes – Inheritance- Extension functions - Special classes | Building a basic program using Classes and implementing inheritance |
| Assessment I | 02.10.2022 | Online Quiz | |
| UNIT II : Layouts & Navigation | | | |
| 13 – 15 | 03.10.2022 | Layouts in Android – ConstraintLayout | Building a simple app using basic layout |
| 16 – 18 | 08.10.2022 | Additional topics for ConstraintLayout - Data binding | Enriching the app as an interactive with user customization |
| 19 – 21 | 09.10.2022 | Displaying lists with RecyclerView | Handling RecyclerView with list |
| 22 – 24 | 15.10.2022 | Multiple activities and intents - App bar, navigation drawer, and menus | Building a app to display a list of images using cards |
| 25 - 27 | 16.10.2022 | Fragments - Navigation in an app | Handling of the Navigation UI components and fragments |
| 28 - 30 | 22.10.2022 | More custom navigation behaviour - Navigation UI | |

| | | | |
|------------------------------------|------------|---|---|
| Assessment II | 23.10.2022 | Online Quiz | |
| UNIT III : Data Persistence | | | |
| 31 – 33 | 23.10.2022 | Android permissions - Connect to, and use, network resources - Connect to a web service | Simple program to create and connect to web server |
| 34 – 36 | 29.10.2022 | Introduction to coroutines - Introduction to HTTP/REST | Program to Load and display images/data from the internet |
| 37 – 39 | 30.10.2022 | SQL Basics | Program to access to the SQL database |
| 40 – 42 | 05.11.2022 | Introduction to Room and Flow - Using Room Kotlin APIs | Programs using Room APIs in kotlin |
| 43 - 45 | 06.11.2022 | Persist data with Room - Read and update data with Room | |
| Assessment III | 12.11.2022 | Online Quiz | |
| Assessment IV | 13.11.2022 | Model Exam | |
| Assessment V | 19.11.2022 | Final Exam | |

Note: The assessment for the above course will be conducted by considering all the criteria of rubrics method and will be assessed by Head of the department and senior faculty members.


 A. Yogaraja
 26/10/22
 Course Designer & Coordinator

1. Mr.C.A.Yogaraja, AP/CSE
2. Mr.K.Vignesh Saravanan, AP/CSE


 K-V Saravanan
 26/10/22
 HOD/CSE


 VICE PRINCIPAL


 PRINCIPAL
 26/10/22



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

NAAC Accredited and An ISO 9001:2015 certified institution



RIT/CSE/VAC/2021/02

16.09.2021

To
The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600 025.

Sir,

Sub: Requesting approval – Value Added Courses – Syllabus and Schedule – Reg.
Ref: Affiliated Institutions – Guidelines for conducting Value Added Courses – Anna University Regulations 2017.

With reference to the above, we have proposed to offer the following value added course to our V Semester B.E Computer Science and Engineering Students for the academic year 2021 – 2022 (ODD Semester) by getting the suggestions from faculty members, Industry persons and alumni to improve the employability of the students.

| Sl. No. | Course Code | Course Name | Credits |
|---------|-------------|-------------|---------|
| 1 | CSVAC XXX | MERN Stack | 2 |

The syllabus and schedule (contains the details of course handling faculty, sessions of theory and practical, assessment procedure and evaluation team) of the proposed value added courses are formulated based on the guidelines AU – R2017 and enclosed the same for your kind approval.

Hereby, we request your kind approval and consent to offer this value added course to our V semester students.

Thanking you,

Yours faithfully,

b.v.s. j...
16/9/2021
HOD/CSE

[Signature]
16/9/2021
Vice Principal

[Signature]
16/9/2021
Principal

Cc:
The Chairman,
Faculty of Information and Communication Engineering,
Center for Academic Courses,
Anna University

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
 CHENNAI - 600 025

Off: 22357077 / 73
 22357074
 Fax / Dir : 22352272



Dr. S.HOSIMIN THILAGAR
 DIRECTOR
 Letter No.3814/AU/VA/CAC/FICE/2021



22/10/2021

Handwritten notes:
 e/c
 M
 27/10/21

To
 The Controller of Examinations
 Anna University
 Chennai - 25.

Sir,
 Sub: A.U. - CAC - Affiliated Institutions - Value Added Courses - Reg.
 Ref : Letter No. RIT/CSE/VAC/2021/02, date:16.09.2021.

With references to the letter cited, the following Value Added Course offered by Ramco Institute of Technology, Affiliated Institutions is allotted the course code as detailed below.

| SI. NO. | CODE ALLOTTED | TITLE | CREDITS | | | |
|---------|---------------|------------|---------|---|---|---|
| | | | L | T | P | C |
| 1. | IVA086 | MERN Stack | 1 | 0 | 2 | 2 |

This is for your kind information and necessary action at your end.

Yours faithfully,

Handwritten Signature
 DIRECTOR
 22/10/21
 e/c

Copy to:

1. The Principal, Ramco Institute of Technology, Rajapalayam - 626 117, Virudhunagar District.
2. The Chairperson, Faculty of Information and Communication Engineering, A.U., Chennai -25.
3. The Stock File.



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

NAAC Accredited and An ISO 9001:2015 certified institution



ISO 9001:2015
ID 9108633093

RIT/CSE/VAC/2022/02

01.04.2022

To
The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600 025.

Sir,

Sub: Requesting conduction – Value Added Courses –Schedule – Reg.
Ref: Affiliated Institution –Guidelines for conducting Value Added Courses-Anna University Regulations 2017
Letter No. 3814/AU/VA/CAC/FICE/2021 dated 22.10.2022

With reference to the above, we had proposed to offer the value added course “MERN Stack- IVA086” with the schedule and got the approval for the same to our V Semester B.E Computer Science and Engineering Students for the academic year 2021 – 2022 on 27.10.2021. Due to time constraints, we could not conduct the same in V semester itself. We have planned to conduct in VI Semester. The updated schedule (contains the details of course handling faculty, sessions of theory and practical, assessment procedure and evaluation team) of the proposed value added courses are submitted for your reference.

Hereby, we request your kind approval to conduct this value added course to our VI semester students as per the schedule attached.

Thanking you,

Yours faithfully,


HOD/CSE
01/04/2022


Vice Principal


Principal
1/4/22

List of Encl:

1. Requisition Letter for VAC
2. Approval letter for VAC from Anna University
3. Name list of the students
4. New schedule for both theory and practical sessions
5. Previous Schedule for both theory and practical sessions.

Cc:

The Chairman,
Faculty of Information and Communication Engineering,
Center for Academic Courses,
Anna University

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

RAMCO INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
VALUE ADDED COURSE DETAILS

Title of the Course: **MERN stack**

Year / Branch / Semester: III / Computer Science and Engineering / V

Course Handling Faculty:

Industry:

1. Mr.Vinodh Rajan, Software Engineer, Tech Mahindra
2. Ms. C. Nandhini, MERN Developer, Ramco Systems
3. Mr.G. Ponkumaresan, Team Leader, Infoview Pvt Technologies Ltd.,

Internal Faculty:

1. Mrs. B.Vijayalakshmi , AP(SG)/CSE
2. Mrs.N.Nithya, AP/CSE
3. Mr.C.A Yogaraja, AP/CSE
4. Mr.K.Vignesh Saravanan, AP/CSE

| Hour | Date/Day | THEORY | PRACTICAL |
|--------------------------------------|--|---|--|
| UNIT I : Basics of Full Stack | | | |
| 1 | 15.04.2022 (Friday) | Need for MERN -Server-Less MERN Components - React (1 period) | Server Setup- Setting up MERN environment. (1 period) |
| 3 | | MongoDB- Node.js- Express- npm- Node.js- Npm. (1 period) | Hello World - Simple programs in MERN environment. (2 periods) |
| 5 | 16.04.2022 (Saturday) | - | |
| Assessment I | 16.04.2022 (Saturday) | Online Quiz | |
| UNIT II : React | | | |
| 6 | 17.04.2022 (Sunday) | React Introduction - Components -React Classes (1 period) | REACT based programming (2 period) |
| 9 | 17.04.2022 (Sunday) & 18.04.2022 (Monday) | Composing Components - Passing Data- Dynamic Composition (2 period) | Build Blog using React. Designing components- React Forms- Building a basic Forms using React (2 period) |
| 13 | 23.04.2022 (Saturday) | React state -Setting State - Async State Initialization (1 period) | React CSS - React SaaS Designing components with React CSS and SaaS (3 periods) |
| 15 | | Event Handling Communicating from Child to | |

| | | | |
|--------------------------|--------------------------|--|---|
| | | Parent - Stateless Components (1 period) | |
| Assessment II | 24.04.2022 (Sunday) | Online Quiz | - |
| UNIT III : NodeJs | | | |
| 18 | 24.04.2022 (Sunday) | Node.js basics - Local and Export Modules- Node Package Manager (1 period) | Hands on session on Node.js basics (2 periods) |
| 21 | 25.04.2022 (Monday) | Node.js web server Node.js File system (1 period) | - |
| 22 | 01.05.2022 (Saturday) | Node Inspector- Node.js EventEmitter (1 period) | Hands on session on Frameworks for Node.js (1 period) Handling of various APIs associated with Node.js (2 periods) |
| Assessment III | 01.05.2022 (Sunday) | Online Quiz | |
| UNIT IV : Express | | | |
| 26 | 08.05.2022 (Saturday) | Express.js Web App - Serving Static Resource - Node.js Data Access (1 period) | Node and Express based web development Handling of various APIs associated with Node.js (2 periods) |
| 29 | 09.05.2022 (Sunday) | Express REST APIs – REST- Resource Based - HTTP Methods as Actions - JSON- Routing (1 period) | Programs using JSON- Express -Handler Function Hands on session on Using the List API (1 period) |
| 31 | | Middleware - The List API - Automatic Server Restart – Testing- The Create API - Error Handling Engine – Template (1 period) | Using the Create API (1 period) |
| 33 | 10.05.2022 (Monday) | - | Application backend development with Node.js and Express. (2 periods) |
| Assessment IV | 14.05.2022 (Saturday) | Online Quiz | |
| UNIT V :Database | | | |
| 35 | 14.05.2022 (Saturday) | MongoDB - MongoDB Basics – Documents- Collections - | Installation- The mongo Shell and |

| | | | |
|---------------|-----------------------|--|---|
| 36 | | Query Language - Schema Initialization- MongoDB Node.js Driver | |
| | 15.05.2022 (Sunday) | Reading from MongoDB - Writing to MongoDB - CRUD operations - projections - Indexing | Hands on session on MongoDB basics commands (3 periods) |
| | | Aggregation - Replication - Sharding, Creating backup - Deployment (2 period) | |
| 40 | 22.05.2022 (Sunday) | - | Handling NoSQL data using MongoDB and manipulating data and management. (2 periods) |
| | | | Dice Roller game using React Build Blog using React.(2 periods) |
| 44 | 23.05.2022 (Monday) | - | Add API Authentication to Blog App. (2 periods) |
| 45 | 28.05.2022 (Saturday) | - | |
| Assessment V | 29.05.2022 (Sunday) | Online Quiz | |
| Assessment VI | 29.05.2022 (Sunday) | Final Exam | |

Note: The assessment for the above course will be conducted by considering all the criteria of rubrics method and will be assessed by Head of the department and senior faculty members.

N. Nithya
1/4/22 C.A. *C.A.*
01/4/22
Course Designer & Coordinator

1. Mrs.N.Nithya, AP/CSE
2. Mr.C.A.Yogaraja, AP/CSE
3. Dr.I.Gethzi Ahila Poornima, AP/CSE

K. V. Srinivas
HOD/CSE
01/04/22

[Signature]
1/4/22
VICE PRINCIPAL

[Signature]
PRINCIPAL
1/4/22



OFF: 22357077 / 73
22357074
Fax / Dir : 22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI - 600 025



Dr. S.HOSIMIN THILAGAR
DIRECTOR
Letter No.2066/AU/VA/CAC/FICE/2020

To
The Controller of Examinations
Anna University
Chennai - 25.

Sir,



10.2020
CSE
Excell & ECE
M
16 wds

Sub: A.U. - CAC - Affiliated Institutions - Value Added Courses - Reg.
Ref: (i) Letter No. RIT/ACADEMIC/CSE/VAC/2020/01, dated:11.09.2020
(ii) Mail received from The Head, Dept. of CSE, Ramco Institute of Technology, dated:06.10.2020

With reference to the letter cited, the following Value Added Courses offered by Ramco Institute of Technology, Affiliated Institutions is allotted the course code as detailed below.

| SI. NO. | CODE ALLOTTED | TITLE | CREDITS | | | |
|---------|---------------|--|---------|---|---|---|
| | | | L | T | P | C |
| 1. | IVA068 | End to End Project Implementation using Spring Framework | 0 | 0 | 2 | 1 |
| 2. | IVA069 | Django Web Application Framework | 0 | 0 | 2 | 1 |
| 3. | IVA070 | Model Development using Exploratory Analysis | 0 | 0 | 2 | 1 |
| 4. | IVA071 | Attacks and Vulnerabilities Laboratory | 0 | 0 | 2 | 1 |

This is for your kind information and necessary action at your end.

Yours faithfully,

T. he
01/10

10/10/2020
DIRECTOR

Copy to:

1. The Principal, Ramco Institute of Technology, Ayyanarkovil Road, Rajapalayam, Virudhunagar - 626117.
2. The Chairperson, Faculty of Information and Communication Engineering, A.U., Chennai -25.
3. The Stock File.

CSVAC2003 MODEL DEVELOPMENT USING EXPLORATORY ANALYSIS

LTPC
0021

About the Course:

Data Science has applications in industries such as intelligence, security, healthcare, business, government, energy etc and Python is a nifty, flexible and continuously improving open source tool. The benefits of learning Model Development Using Exploratory Analysis are ease of learning, faster development and processing, powerful packages, better data visualization etc. This course will provide Hands-on experience for students to get familiarized with various python libraries like NumPy, SciPy, Matplotlib and Pandas. Specifically, learners will get acquainted with Data Wrangling, exploratory data analysis, visualization, and model development and evaluation.

Prerequisites:

Working knowledge of Basic Programming in Python, Probability and Statistics

Objectives:

- To Understand the basics of Data Science and study various python libraries including NumPy, SciPy, Matplotlib and Pandas.
- To experiment the use of data wrangling, exploratory data analysis and visualization
- To develop and evaluate models using linear regression to various datasets/real-time applications

Syllabus:

| | | |
|---|--|-----------|
| Unit-I | Understanding Data and Importing Dataset | 6 |
| Understanding the Data - Python Packages for Data Science – NumPy, SciPy, Matplotlib and Pandas - Importing and Exporting Data in Python - Getting Started with Data Analysis with Python - Accessing Databases with Python | | |
| Unit-II | Data Wrangling (Data Munging) and Exploratory Data Analysis | 14 |
| Pre-processing Data in Python - Dealing with Missing Values - Data Formatting - Data Normalization - Binning - Turning categorical variables into quantitative variables - Exploratory Data Analysis - Descriptive Statistics - Visualization - GroupBy – Correlation analysis - Analysis of Variance ANOVA | | |
| Unit-III | Model Development and Evaluation | 10 |
| Model Development using Case Studies – Linear Regression – Multiple linear regression – Model Evaluation – Measures for In-sample Evaluation - Predictions and Decision making | | |

TOTAL: 30

Hands-on Exercises

1. Exposure to Python Environment, NumPy, SciPy, Matplotlib and Pandas libraries

2. Exercise on np.array function, pd.Series() function, pd.DataFrame() function
Hands-on Exercises (Contd..)
3. Exercises on reading and importing datasets in different file formats like csv, json etc using pandas and accessing databases with Python
4. Exercises on getting quick and detailed summary of dataset and identify features (columns) and datatypes of the values using pandas.
5. Exercises on handling duplicate values and missing data for the imported dataset.
6. Exercises on Data formatting and Data Normalization
7. Exercises on Binning and turning categorical variables into quantitative variables
8. Exercises on Exploratory Data Analysis, Descriptive Statistics and Visualization
9. Exercises on GroupBy, Correlation analysis and Analysis of Variance ANOVA
10. Exercises on model development and evaluation using linear regression and multiple linear regression

Outcomes:

After the completion of the course, the learner will be able to

- Apply various python libraries including NumPy, SciPy, Matplotlib and Pandas to data analytics problem.
- Use data wrangling, exploratory data analysis and visualization
- Develop and evaluate models using linear regression.

References:

- Joel Grus, Data Science from Scratch: First Principles with Python, 2nd Edition
- Jake VanderPlas, Python Data Science Handbook – Essential Tools for Working with Data, 1st Edition, 2017.

Suggested Video Lectures:

Coursera

- Data Analysis with Python
- Pandas Python Library for Beginners in Data Science
- Exploratory Data Analysis with Python and Pandas
- Introduction to Data Science in Python

Assessment Methods and Weightage:

| Sl. No. | Assessment Method | Duration and Max. Marks | Weightage |
|---------|---------------------------------|-------------------------|-----------|
| 1. | Online Quiz (one for each unit) | 1 hour 25 marks | 30% |
| 2. | Model Practical Exam | 1 hour 20 Marks | 20% |
| 3. | Final Exam | 1 hour 30 Marks | 50% |

S. S. S. S. S. 17/9/2020
Course Designer & Coordinator

K. V. J. 17/9/2020
HOD/CSE

[Signature] 17/9/2020
VICE PRINCIPAL

[Signature]
PRINCIPAL
18/9

RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
An ISO 9001:2015 certified institution



RIT/ACADEMIC/CSE/VAC/2019/01

22.06.2019

To

The Director
Centre for Academic Courses
Anna University
Chennai-25

Respected Sir,

Sub: V semester B.E Computer Science and Engineering-Value Added Courses-
Syllabus and Schedule-Approval Requested-Reg
Ref: Affiliated Institutions-Guidelines for conducting Value Added Courses-Anna
University Regulations 2017.

With reference cited above, we propose to offer the following value added courses to our V semester B.E Computer Science and Engineering students for the academic year 2019-2020(ODD semester)

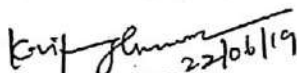
| Sl.No | Course Code | Course Title | Credits |
|-------|-------------|---------------------|---------|
| 1 | CSVAC1901 | iOS APP DEVELOPMENT | 1 |
| 2 | CSVAC1903 | DEEP LEARNING | 1 |

The syllabus and schedule (contains the details of course handling faculty, sessions, assessment procedure and evaluation team) of the proposed value added courses are formulated based on the guidelines AU-R2017 and enclosed the same for your kind approval.

Hereby, we request your kind approval and consent to offer these value added courses to our V semester Computer Science and Engineering students.

Thanking you

Yours faithfully,


HOD/CSE 22/06/19


22/06/19
VICE PRINCIPAL


22/06/19
PRINCIPAL



North Venganallur, Rajapalayam - 626 117,
Tel : 04563 233400, 233410; Fax : 2334199
e-mail : rit.rjpm.office@gmail.com, rit.rjpm@gmail.com, www.ritrjpm.ac.in

COURSE OBJECTIVES

- To describe fundamentals of Swift programming language
- To explain the components of user interface
- To describe the functions of persistence, networking and data communication.

LIST OF EXERCISES**1. Basic Swift programming**

Introduction - Strings & Characters – Collection types – Enumeration – Control Flow
- Function and closure - Class and structure

2. User Interface programming

Storyboard – Xib – Programmatic UI - User Interactivity - Multiple View Controllers
& Navigation

3. Persistence programming

User defaults – Keyed Archiver – Plist – CoreData - SQLite

4. Network programming

Native API (URL Session) - Third party library: Alamofire.

5. Data communication programming

Delegates & Protocols, Closures, Notification Center

T: 15, P: 15, TOTAL: 30 PERIODS

COURSE OUTCOMES

Upon Completion of this course, the students will be able to

CO 1: Describe key programming terms relevant to Swift and iOS programming.

CO 2: Develop iOS apps using persistence, networking and data communication

Assessment Methods and Weightage:

| Sl. No. | Assessment Method | Duration and Max. Marks | Weightage |
|---------|---|--------------------------------------|-----------|
| 1 | Online Quiz | 1 hour 50 marks | 20% |
| 2 | Continuous Assessment of Lab Exercises by Viva-Voce and Performance | 1 hour 10 Marks for each exercise | 30% |
| 4 | Final Exam | 1 hour 30 Marks | 50% |

REFERENCES

1. Vandad Nahavandipoor, "iOS 8 Swift Programming Cookbook Solutions & Examples for iOS Apps", O'Reilly Media, 2014.
2. Boisy G. Pitre, "Swift for Beginners: Design and Development", PEACHPIT PRESS, 2013.
3. Christian Keur and Aaron Hillegass, "iOS Programming: The Big Nerd Ranch Guide -Big Nerd Ranch Guides", 4th Edition, 2011.
4. Jonathan Stark, Building iPhone Apps with HTML, CSS and JavaScript, O'Reilly Media, 2011.
5. App Programming Guide for iOS-Apple developer - 2014 Apple Inc

W. K.
22.6.19

Course designer & Coordinator

K. J. S.
22/06/19
HOD/CSE

J. S.
22/6/19
VICE PRINCIPAL

M.
22/6/19
PRINCIPAL

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.



Department of Computer Science and Engineering,
Ramco Institute of Technology,
Rajapalayam - 626 117.

RAMCO INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
VALUE ADDED COURSE DETAILS

Title of the Course: **iOS APP DEVELOPMENT**

Year / Branch / Semester: **III / Computer Science and Engineering / V**

Course Handling Faculty:

Industrial Experts:

1. Ms.Sinthiya, IOS developer, Poket-technologies, Chennai,Tamil Nadu 600101

Eminent Academicians from other institutions:

1. Mr. J. Manikandan, Assistant Professor, K L Deemed to be University, Guntur District, Andhra Pradesh
2. Mr.S.S.Akilan, Assistant Professor(Sr.Grade), Mepco Schlenk Engineering College, Sivakasi

Internal Faculty Members:

1. Dr.M.Kaliappan, Associate Professor, Ramco Institute of Technology, Rajapalayam
2. Mr.C.A.Yogaraja, Assistant Professor, Ramco Institute of Technology, Rajapalayam
3. Mr.K.Vignesh Saravanan, Assistant Professor, Ramco Institute of Technology, Rajapalayam

Evaluation Team Members:

1. Head of the Department
2. Two senior faculty Members Nominated from Head of the Institution

Time table

| Session | Date/Day | Theory (1 Period) | Practical (1 Period) |
|--------------|--------------------------|---|---|
| I | 13.07.2019 (Saturday) | Introduction to Swift programming | Exercise on Strings and Characters |
| II | | Collection types and Enumeration | Exercise on Collection types and Enumeration |
| III | 20.07.2019 (Saturday) | Control Flow - Function and closure | Exercise on Control Flow - Function and closure |
| Assessment I | 21.07.2019 (Sunday) | Online Quiz – Basics of Swift programming | |

| Session | Date/Day | Theory (1 Period) | Practical (1 Period) |
|----------------|--------------------------|--|---|
| IV | 27.07.2019 (Saturday) | Class and structure | Simple programs on Class and structure |
| V | 28.07.2019 (Sunday) | User Interface programming | Exercise on Storyboard – Xib |
| VI | 04.08.2019 (Sunday) | Programmatic UI | Exercise on User Interactivity, Multiple View Controllers |
| VII | 10.08.2019 (Saturday) | Persistence programming | Exercise on Navigation, User defaults – Keyed Archiver |
| VIII | 11.08.2019 (Sunday) | Introduction to Plist and CoreData | Exercise on Plist and CoreData |
| IX | 17.08.2019 (Saturday) | Introduction to SQLite | Exercise on SQLite |
| X | 18.08.2019 (Sunday) | Network programming | Exercise on Native API (URL Session), |
| Assessment II | 24.08.2019 (Saturday) | Online Quiz – Class, structure and Persistence programming | |
| XI | 25.08.2019 (Sunday) | Types of Protocols | Exercise on Protocols |
| XII | 31.08.2019 (Saturday) | Third party library: Alamofire | Exercise on Alamofire |
| XIII | 08.09.2019 (Sunday) | Data communication programming | Exercise on Delegates |
| XIV | 14.09.2019 (Saturday) | Closures | Exercise on Closures |
| XV | 15.09.2019 (Sunday) | Notification Center | Exercise on Notification Center |
| Assessment III | 21.09.2019 (Saturday) | Online Quiz – Network programming and Data communication programming | |
| Assessment IV | 28.09.2019 (Saturday) | Final Exam | |

Note: The assessment for the above course will be conducted by considering all the criteria of rubrics method and will be assessed by Head of the department and senior faculty members.

M. K. S.
22.6.19
Course designer & Coordinator

K. S. S.
22/06/19
HOD/CSE

J. S.
22/6/19
VICE PRINCIPAL

M. S.
22/6/19
PRINCIPAL

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.



About the Course:

Due to the availability of voluminous data and more pre-trained neural networks over the past few years, transfer learning has become a growing area of research. Transfer learning has been employed successfully by companies like Google, Microsoft, IBM, Facebook, Twitter, Uber etc. to solve a wide range of problems. This course will provide Hands-on experience for students to get familiarized with various neural networks using transfer learning. Specifically, learners will get acquainted with convolutional neural networks, recurrent neural networks with an insight into various pre-trained learning models available for Transfer Learning.

Prerequisites:

Working knowledge of Calculus, Probability Theory, Basic Programming in Python

Objectives:

- To Understand the basics of Transfer Learning
- To study the various Transfer learning libraries including Tensorflow, Keras, PyTorch
- To experiment the use of transfer learning techniques in various real-time applications

Syllabus:

| | | |
|---|---------------------------------|-----------|
| Unit-I | Fundamentals of Learning | 6 |
| Introduction to Tensor Flow, Keras – Tensorboard – Creation of Learning Models –Hyper parameters – Tensors in PyTorch – Vector Operations – GitHub | | |
| Unit-II | Tensor Flow and Keras | 14 |
| Image Dataset creation – Object Detection and Transfer Learning – Metrics – Faster RCNN – mask RCNN - YOLO – Case study – Handwritten Digits MNIST – CIFAR10 - Blood Cell Detection – Tensor Flow GPU | | |
| Unit-III | PyTorch | 10 |
| Functions in PyTorch – Predict Students' Admission – Object Classification - Cat Vs. Dog Challenge – Facial Expression Classification – Multi Object Cascade Classifier – Style Transfer – Exploratory Data Analysis – Time series data scrapping | | |
| THEORY: 15, PRACTICAL: 15, TOTAL: 30 | | |

Hands-on Exercises

1. Exposure to Anaconda Environment, Git Hub/Clone, TensorFlow, Keras, PyTorch SciKit Learn, Pandas, NumPy, Matplotlib libraries
2. Exercise on Activation Functions, Cost Functions, Learning Rate, Dropouts, BatchSize, Epochs
3. Exercise on Dataset Distribution, Cross-validation

Hands-on Exercises (Contd..)

4. Plant Leaf Classification
5. Creation of Augmented Image Dataset
6. Boston House Price Prediction
7. Vehicle Object Detection
8. YOLO for Faster Object Detection
9. Handwritten Digits Classification – NVIDIA DIGITS Lab
10. Whale Face Detection - NVIDIA DIGITS Lab
11. Prediction of Students Admissions
12. ImageNet Dataset – Kaggle Challenge for Cats Vs. Dogs
13. FERG Dataset - Facial Expression Recognition Group Challenge
14. Object Classification, Person Tracking System
15. Scrapping of Live feed data for EDA

Outcomes:

After the completion of the course, the learner will be able to

- Explain about various frameworks available for Transfer Learning
- Demonstrate the various Learning Algorithms using Keras and TensorFlow
- Describe the use of PyTorch Framework for various learning usecases.

References:

- Francois Chollet, Deep Learning with Python, Manning Publications, 2017
- Ian Goodfellow, Yoshua Bengio and Aaron Courville, Deep Learning, MIT Press, 2016
- Adrian Rosebrock, Deep Learning for Computer Vision, 2017 (www.pyimagesearch.com)

Suggested Video Lectures:

Edx.org

- IBM:DL0101EN Deep Learning Fundamentals with Keras
- IBM: DL0110EN Deep Learning with Python and PyTorch
- IBM:DL0120EN Deep Learning with Tensorflow

NPTEL Course on Deep Learning

- https://nptel.ac.in/syllabus/syllabus_pdf/106106184.pdf

Online course sponsored by Google Cloud and Turnitin – March 2019.

- <https://fullstackdeeplearning.com/>

RAMCO INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
VALUE ADDED COURSE DETAILS

Title of the Course: **TRANSFER LEARNING FRAMEWORKS**

Year / Branch / Semester: III / Computer Science and Engineering / V

Course Handling Faculty Members:

Experts from Industry:

1. Dr.Ebenezer Isaac, Data Scientist, Ericsson, Chennai
2. Dr.VK. Mohammed Aksam, Data Scientist, Zetta Labs, Bengaluru

Eminent Academicians from other Institutions:

1. Dr.P.Thangaraju, Professor, Department of Computer Applications, Bishop Heber College, Trichy
2. Mr.Chandran Venkatesan, NVIDIA DLI Ambassador, Assistant Professor, KPR Institute of Engineering and Technology, Coimbatore

Internal Faculty Members:

1. Dr.K.Karthikeyan, Associate Professor, Department of EEE, Ramco Institute of Technology
2. Mr.R.Balaji Ganesh, Assistant Professor (Sr.Gr.), Department of CSE, Ramco Institute of Technology
3. Mrs.B.Vijayalakshmi, Assistant Professor (Sr.Gr.), Department of CSE, Ramco Institute of Technology

Evaluation Team Members:

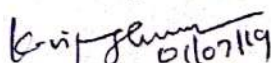
1. Head of the Department
2. Two senior Faculty members as nominated by the Head of the Institution.

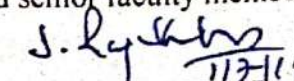
| Session | Date/Day | Theory (1 Period) | Practical (1 Period) |
|--|--------------------------|---|---|
| UNIT-I FUNDAMENTALS OF LEARNING | | | |
| I | 13.07.2019 (Saturday) | Introduction to Tensor Flow, Keras, Tensorboard | Exposure to Anaconda Environment, Git Hub/Clone, TensorFlow, Keras, PyTorch SciKit Learn, Pandas, NumPy, Matplotlib libraries |
| II | | Creation of Learning Models – Hyper parameters | Exercise on Activation Functions, Cost Functions, Learning Rate, Dropouts, BatchSize, Epochs |
| III | 20.07.2019 (Saturday) | Tensors in PyTorch – Vector Operations – GitHub | Exercise on Dataset Distribution, Cross-validation |
| Assessment I | 21.07.2019 (Sunday) | Online Quiz | |

| Session | Date/Day | Theory (1 Period) | Practical (1 Period) |
|--------------------------------------|--------------------------|---|--|
| UNIT-II TENSOR FLOW AND KERAS | | | |
| IV | 27.07.2019 (Saturday) | Image Dataset creation – Tool to create Augmented dataset | Plant Leaf Classification |
| V | 28.07.2019 (Sunday) | Object Detection and Transfer Learning | Creation of Augmented Image Dataset |
| VI | 04.08.2019 (Sunday) | Metrics to validate the model | Boston House Price Prediction |
| VII | 10.08.2019 (Saturday) | Faster RCNN, Mask RCNN | Vehicle Object Detection Multi-Object Detectors |
| VIII | 11.08.2019 (Sunday) | YOLO v3 Object Detectors | YOLO Object Detection Analysis of different object detectors |
| IX | 17.08.2019 (Saturday) | Handwritten Digits – Multi-Object Detectors | Handwritten Character Classification - NVIDIA DIGITS Lab |
| X | 18.08.2019 (Sunday) | Tensor Flow GPUs | Whale Face Detection - NVIDIA DIGITS Lab |
| Assessment II | 24.08.2019 (Saturday) | Online Quiz | |
| UNIT-III PYTORCH | | | |
| XI | 25.08.2019 (Sunday) | Functions in PyTorch | Prediction of Students' Admissions using PyTorch |
| XII | 31.08.2019 (Saturday) | Cat Vs. Dog Object Classification Challenge | ImageNet Dataset – Kaggle Challenge for Cats Vs. Dogs |
| XIII | 08.09.2019 (Sunday) | Facial Expression Classification | FERG Dataset - Facial Expression Recognition Group Challenge |
| XIV | 14.09.2019 (Saturday) | Multi Object Cascade Classifier, Style Transfer | Object Classification, Person Tracking System |
| XV | 15.09.2019 (Sunday) | Exploratory Data Analysis – Time Series data scrapping | Scrapping of live feed data for EDA |
| Assessment III | 21.09.2019 (Saturday) | Online Quiz | |
| Assessment IV | 28.09.2019 (Saturday) | Final Exam | |

Note: The assessment for the above course will be conducted by considering all the criteria of rubrics method and will be assessed by Head of the department and senior faculty members.


Course Designer & Coordinator


HOD/CSE


VICEPRINCIPAL


PRINCIPAL

| Sl. No. | Assessment Method | Duration and Max. Marks | Weightage |
|---------|---|--------------------------------------|-----------|
| 1 | Online Quiz (one for each unit) | 1 hour 50 marks | 20% |
| 2 | Continuous Assessment of Lab Exercises by Viva-Voce and Performance | 1 hour 10 marks for each exercise | 20% |
| 3 | Assignments (2 nos.) – TensorFlow and PyTorch Frameworks | 10 Marks | 10% |
| 4 | Final Exam | 1 hours 30 Marks | 50% |

Mr. Jic
Course Designer & Coordinator
01/07/19

K. V. J. S. S.
HOD/CSE
01/07/19

S. K. S.
VICE PRINCIPAL
11/7/19

S. S.
2019
PRINCIPAL

**The Department of
Electrical and Electronics
Engineering**



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE, MECH



17.08.2022

To

**The Director,
Centre for Academic Courses,
Anna University,
Chennai.**

Respected Sir,

Sub: Representation of Curriculum Gap in the existing Curriculum R-2017 of Electrical and Electronics Engineering – Submission of Suggestions to be included in Curriculum Content in the Forthcoming R 2021 of Electrical and Electronics Engineering – reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Electrical and Electronics Engineering for Consideration and inclusion in the forthcoming AU R-2021 Curriculum and syllabus of Electrical and Electronics Engineering.

1. Consolidated Report of Curriculum Gap Analysis and identification for Power System Engineering and related streams of the AU R-2021 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.
2. Consolidated Report of Curriculum Gap Analysis and identification for Power Electronics and Drives and related streams of the AU R-2021 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.
3. Consolidated Report of Curriculum Gap Analysis and identification for Electronics / Electrical Machines / Embedded System / Other and related streams of the AU R-2021 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.

We kindly request you to consider our suggestions while framing the regulation of AU R-2021 curriculum and syllabus of Electrical and Electronics Engineering.

Thanking You,

S. Kannan
17/08/22
Head of the Department
[S.KANNAN]


Vice – Principal


Principal 17/8/22



North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



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Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Power System Engineering and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 17.08.2022

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Power System Engineering** are given below:

| | |
|---------------------|---|
| Faculty members | 1. Dr.S.Kannan, Professor & Head 2. Mr. A. S. Vigneshwar, Assistant Professor 3. Mr. A. Arun Kumar, Assistant Professor |
| Student Members | 1. Kaliraj R (953619105303) 2. Prem Kumar M (953619105308) |
| Alumni Members | Mr. M. Thangavelpandi, Assistant Manager, The Ramco Cements Limited, Andhra Pradesh. Mr. J. Jeyavigneshkumar, Design Engineer, Ford Motor Company (P) Ltd, Chennai |
| Industry Experts | Mr. KSB. Harishankar, Electrical Designer, Sidel India Private Ltd, Gurgaon |
| Faculty Coordinator | Mr. E. Thangam, Assistant Professor (SG)- EEE |


The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of **Power System Engineering**.

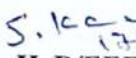
In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of

topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course.

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|--|------|---|
| 1. | EE8402 Transmission and Distribution | III | Transmission Tower Right of Way (RoW) can be included. In design point of view How to choose the Transmission line path while designing can be included in Unit - 3 |
| | | IV | Fault identification methods in UG Cables can be added. As per industry requirement, it is necessary to rectify/identify the fault location |
| 2. | EE8602 Protection and Switchgear | I | Layout of a typical substation, Different types of Fuses and their characteristics, Protections against lightning, Lightning arresters, Types, Lightning arrester selection, Surge absorbers. The knowledge on Practical substation layout and causes of high voltage in transmission is mandatory for electrical engineers |
| | | V | ELCB - Selection - testing of circuit breakers according to IS/IEC codes[60947 Standards for Low voltage Switchgear and Control Gears- Part II] The knowledge on ELCB operation and selection is mandatory for electrical engineers |
| 4. | EE8702 Power System Operation and Control | I | Introduction to restructuring of power systems Upcoming area in power system is restricting of power systems, where security analysis and control is essential part. |
| | | III | MVAR injection of switched capacitors to maintain acceptable voltage profile and to minimize transmission loss |
| | | V | Security analysis and control |
| 6. | Revision / alternation in laboratory course | | The students can be exposed to develop C/C++ programs for performance evaluation of transmission lines, formation of bus admittance and impedance matrices, for solving Economic Dispatch problems and for performing state estimation in Power System Simulation Laboratory |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


17/8/22
Domain Coordinator
E. Thangam


17/08/22
HoD/EEE
(S. KANNAN)


17/8/22
Vice Principal


Principal
17/8/22





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NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Power Electronics and Drives and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum

Date: 17.08.2022

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Power Electronics and Drives** are given below:

| | |
|---------------------|---|
| Faculty members | 1. Mrs. S. Jeyanthi, Assistant Professor 2. Mr. R. Thangasankaran, Assistant Professor |
| Student Members | 1. S. Jeyasuriya (953619105010) 2. S. Tilak (953619105024) 3. M. Prem Kumar (953619105308) |
| Alumni Members | 1. Mr. M. Mariselvam, System Engineer, Data Patterns India (P) Ltd, Chennai. 2. Mr. D. Logesh, Test Engineer - 1, Tessolve Semiconductor Pvt. Ltd, Bengaluru. |
| Industry Experts | 1. Dr. N. Pothirasan, Director, Hashan Medicare and Raj Bioelectronics and Intelligent Private Limited. |
| Academic Members | 1. Dr. R. Karthigaivel, Professor, Department of EEE, PSNA College of Engineering and Technology, Dindigul. 2. Dr. M. Kaliamoorthy, Associate Professor, Dr. Mahalingam College of Engineering and Technology, Pollachi. |
| Faculty Coordinator | Mr. S. Meenakshi Sundaravel, Assistant Professor (SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the **courses which are related to the domain of Power Electronics and Drives.**

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|---------------------------------------|--------------------|---|
| 1. | EE8552 Power Electronics | I | The topic "Switching loss calculation" for power semiconductor devices can be included in addition to their characteristics which helps the students in the converter design. |
| 2. | EE8005 Special Electrical Machines | III | Design considerations, torque and power requirement calculation of BLDC motor for a specific electric vehicle can be included which will make the students to design BLDC motor for EV applications. |
| 3. | Introduction to new course | E-vehicles: | Core course on the recent thrust area "E-vehicles" can be included in the EEE curriculum along with corresponding laboratory course to provide the knowledge and improve the skills on emerging E-Vehicle technology. |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.

S. Meenakshi Senthil
17/8/22
Domain Coordinator
[S. Meenakshi Senthil]
AP(SG)/EEE

S. K. Kanwan
17/08/22
HoD/EEE
[S. KANWAN]

S. K. Kanwan
17/8/22
Vice Principal

S. K. Kanwan
Principal
17/8/22





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Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Electronics / Embedded System / Other and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 17.08.2022

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help of the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Electronics / Electrical Machines / Embedded System / Other** are given below:

| | |
|---------------------|---|
| Faculty members | Dr. S. Kannan, Professor & Head/EEE Dr. K. Karthikeyan, Associate Professor Mr. E. Thangam, Assistant Professor (SG) |
| Student Members | Mr. A. Abishek Bebito (953620105001) Mr. S. Aravind (953619105003) |
| Industry Members | Mr. G. Durairaju, Propertier, GD Electrical Equipments, 223/1, Nethaji Nagar, Nanjundapuram Road, Nanjundapuram Post, Coimbatore, Tamil Nadu 641036 Mr. D. Rajagopal, GD Electrical Equipments, 223/1, Nethaji Nagar, Nanjundapuram Road, Nanjundapuram Post, Coimbatore, Tamil Nadu 641036 |
| Alumni Members | Mr. E. Karunamoorthy, Assistant Manager, The Ramco Cements Ltd, Jeyanthi puram, Andrapradesh. Mr. K. Vijayakumarraja, VIGOS Solutions, Rajapalayam - 626117 |
| Faculty Coordinator | Mr. D. Karthik Prabhu, Assistant Professor (SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of Electronics / Electrical Machines / Embedded System / Other.

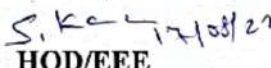
In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course.

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|--|------|--|
| 1. | EE8301 electrical Machines – I | IV | <p>Series generators were used as boosters and later on in DC traction. Presently we do not find much use because even traction motors are also AC commutator motors and linear induction motors.</p> <p>Standard Text and Reference books can be prescribed as follows</p> <p>Text books.</p> <ol style="list-style-type: none"> Advanced electrical technology H.Cotton. Indian publication A.h.Wheeler and company. Performance and design of direct current machines – A.E.Clayton and Hamcock. Third edition Oxford publishing Company. <p>Reference.</p> <ol style="list-style-type: none"> Electrical machinery – Fitzgerald and Kingsley. Second and Sixth Edition Electrical machines-Volume I Kostenco and Protrovsky Foreign language publishing house. Moscow – New Centaury book House. Direct current machinery by Alexander Langsdorf. Electrical machines and power systems – Syed .A.Nasar, Tata McGraw Hill Generalised theory of electrical machines. – G.Kron Electro mechanical energy conversion – Samuel Seely. |
| 2. | EE8311 Electrical Machines Laboratory - I | - | <p>The present electrical laboratory has to be modified as ORIENTATION, SKILL DEVELOPMENT AND INNOVATION CENTRES.</p> <p>Identification of various components should be displayed for physical understanding purpose. General components. Bearings of different types and sizes. Fasteners – Bolts, Nuts, Screws of different types and sizes. Display of working models or display models. DC armature, main pole, interpoles. Commutator, Slip rings, Brush gears, Brush holders, Brushes of different types. Winding wires, different types and sizes. Wire tables. Cables of different types and sizes. Hand tools. A small fitting shop for maintenance work. Familiarization of various national and international standards related to electrical machines. Models of transformers. Methods of assembly of laminations. Auto transformers. Laminations of rotating machines for Different types.</p> |

| | | |
|----|---|--|
| | | <p>OUTCOMES can be modified as following:</p> <p>Skill development.</p> <p>Dismantling and assembly of transformers and rotating machines.</p> <p>Fault location and rectification.</p> <p>- Measurement of insulation resistances.</p> <p>Performance testing: Purpose.</p> <p>Application of tests in actual use.</p> <p>Ability to identify the defects in commutator and rectification.</p> |
| 3. | EE8411 Electrical Machines Laboratory - II | <p>Objectives of the laboratory can be modified as follows:</p> <p>Identification of salient pole and non-salient pole. Rotating field and rotating armature.</p> <p>Identification of damper winding in synchronous machines.</p> <p>Identification of squirrel cage and wound rotor induction machines.</p> <p>- Identification of starters for induction motors.</p> <p>Identification of single phase induction motors.</p> <p>Identification of capacitors for starting and running.</p> <p>Identification of starters for single phase induction motors.</p> <p>Centrifugal switch to disconnect starting capacitor and connect running capacitor.</p> |
| | | <p>Outcomes of the laboratory can be modified as follows:</p> <p>Skill development.</p> <p>Understanding of regulation of alternators.</p> <p>- Synchronization of alternators.</p> <p>Understanding of synchronizing torque.</p> <p>Understanding of torque angle in synchronous motors and power angle in alternators.</p> |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


17/8/2022
Domain Coordinator
D. KARTHIK PRABHU


17/08/22
HOD/EEE
{S. KANNAN}


17/8/22
Vice Principal


Principal
17/8/22





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NAAC Accredited and An ISO 9001:2015 certified institution



17.08.2021

To

**The Director,
Centre for Academic Courses,
Anna University,
Chennai.**

Respected Sir,

Sub: Representation of Curriculum Gap in the existing Curriculum R-2017 of Electrical and Electronics Engineering – Submission of Suggestions to be included in Curriculum Content in the Forthcoming R-2021 of Electrical and Electronics Engineering – reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Electrical and Electronics Engineering for Consideration and inclusion in the forthcoming AU R-2021 Curriculum and syllabus of Electrical and Electronics Engineering.

1. Consolidated Report of Curriculum Gap Analysis and identification for **Power System Engineering** and related streams of the AU R -2021 Electrical and Electronics Engineering curriculum and suggestions to fill the curricular gaps in the Forthcoming AU R -2021.
2. Consolidated Report of Curriculum Gap Analysis and identification for **Power Electronics and Drives** and related streams of the AU R -2021 Electrical and Electronics Engineering curriculum and suggestions to fill the curricular gaps in the Forthcoming AU R -2021.
3. Consolidated Report of Curriculum Gap Analysis and identification for **Electronics / Electrical Machines / Embedded System / Other** and related streams of the AU R -2021 Electrical and Electronics Engineering curriculum and suggestions to fill the curricular gaps in the Forthcoming AU R -2021.

We kindly request you to consider our suggestions while framing the regulation of AU R-2021 curriculum and syllabus of Electrical and Electronics Engineering.

Thanking You,

S. Karan
17/08/21

Head of the Department

[Signature]
17/8/21

Vice – Principal

[Signature]
17/8/21

Principal

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



RAMCO INSTITUTE OF TECHNOLOGY
Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Power System Engineering and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 17.08.2021

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Power System Engineering** are given below:

| | |
|---------------------|---|
| Faculty members | 1. Dr.S.Kannan, Professor & Head 2. Mr. A. S. Vigneshwar, Assistant Professor 3. Mr. A. Arun Kumar, Assistant Professor |
| Student Members | 1. T. Srivarshini (953618105025) 2. N. Hemanth (953618105007) 3. R. Rajkumar (953618105302) |
| Alumni Members | Mr. M. Thangavelpandi, Assistant Manager, The Ramco Cements Limited, Andhra Pradesh. Mr. J. Jeyavigneshkumar, Design Engineer, Ford Motor Company (P) Ltd, Chennai |
| Industry Experts | Mr. KSB. Harishankar, Electrical Designer, Sidel India Private Ltd, Gurgaon |
| Faculty Coordinator | Mr. E. Thangam, Assistant Professor (SG)- EEE |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the **courses which are related to the domain of Power System Engineering**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course.

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|--|------|--|
| 1. | EE8402 Transmission and Distribution | I | Fixation of Transmission Voltage. Electrical Engineering graduates must know how to fix transmission line voltage |
| | | II | Ferranti effect, Impact of HV transmission to the human beings and others /disadvantages of High Voltage transmission. How the high voltage transmission voltage affects the human beings and animals can be included Unit - 2 |
| | | III | Transmission Tower Right of Way (RoW) can be included. In design point of view How to choose the Transmission line path while designing can be included in Unit - 3 |
| | | IV | Fault identification methods in UG Cables can be added. As per industry requirement, it is necessary to rectify/identify the fault location |
| | | V | Different tariff systems adopted/ followed can be included. Methods of Grounding can be removed. Because the same topic is already included in the Protection and Switchgear subject. Introduction to Public and industrial distribution systems. Types of tariff followed in India can be included Unit - 5. |
| 2. | EE8501 Power System Analysis | I | Simple bus building algorithms for the formation of Z-Bus matrix |
| | | II | Comparison of various power flow solution methods. |
| | | III | Short circuit capacity, Selection of circuit breakers. |
| | | IV | Indian Standards for Short Circuit analysis IS-13234 |
| | | V | Importance of stability analysis in power system planning and operation Algorithm and flowchart) for multi-machine stability analysis |
| 3. | EE8602 Protection and Switchgear | I | Layout of a typical substation, Different types of Fuses and their characteristics, Protections against lightning, Lightning arresters, Types, Lightning arrester selection, Surge absorbers. The knowledge on Practical substation layout and causes of high voltage in transmission is mandatory for electrical engineers |
| | | V | ELCB - Selection - testing of circuit breakers according to IS/IEC codes[60947 Standards for Low voltage Switchgear and Control Gears- Part II] The knowledge on ELCB operation and selection is mandatory for electrical engineers |
| 4. | EE8702 Power System Operation and Control | I | Introduction to restructuring of power systems Upcoming area in power system is restructuring of power systems, where security analysis and control is essential part. |
| | | III | MVAR injection of switched capacitors to maintain acceptable voltage profile and to minimize transmission loss |
| | | V | Security analysis and control |
| 5. | EE8703 Renewable Energy Systems | I | Trends in energy consumption, Energy sources and their availability, Yield Energy ratio More number of load parameters like load factor, plant capacity and use factor pertaining to renewable energy systems shall be included in the syllabus. |
| | | III | Modeling of PV Cell, Simulating the of a PV cell, Parameters for Modeling Induction Generator and Fuel cell in MATLAB |

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| | | Design of Solar PV system for specific applications like domestic, industry shall be included in the syllabus. Modelling of DFID and PMSG type of wind generator against fault ride through and stability issues shall be included |
| 6. | Revision / alternation in laboratory course | The students can be exposed to develop C/C++ programs for performance evaluation of transmission lines, formation of bus admittance and impedance matrices, for solving Economic Dispatch problems and for performing state estimation in Power System Simulation Laboratory |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


17/8/2021
Domain Coordinator
E. Thangam


17/08/21
HoD/EEE


17/8/21
Vice Principal




Principal
PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.

RAMCO INSTITUTE OF TECHNOLOGY

Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Power Electronics and Drives and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 17.08.2021

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Power Electronics and Drives** are given below:

| | |
|---------------------|---|
| Faculty members | 1. Mr. S. Meenakshi Sundaravel, Assistant Professor (SG) 2. Mrs. S. Jeyanthi, Assistant Professor |
| Student Members | 1. V. Divyajeyashree (953618105003) 2. S. Muthu Krishnan (953618105015) 3. K. Sathya (953618105022) |
| Alumni Members | 1. Mr.G.Chandru, System Engineer, Data Patterns India (P) Ltd, Chennai 2. Mr.S.Mohamed Amjath, Test Engineer, Tessolve Semiconductors, Bengaluru. |
| Industry Experts | 1. Dr.N.Pothirasan, Director, Hashan Medicare and Raj Bioelectronics and Intelligent Private Limited. |
| Academic Members | 1. Dr.R.Karthigaivel, Professor, Department of EEE, PSNA College of Engineering and Technology, Dindigul. 2. Dr. M. Kaliamoorthy, Associate Professor, |
| Faculty Coordinator | Mr. N. Ganesh, Assistant Professor (SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest

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technological developments in the courses which are related to the domain of Power Electronics and Drives.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course


| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|---|--|--|
| 1. | EE8552 Power Electronics | I | The topic Wide Band gap semiconductor devices: Silicon Carbide (SiC) and Gallium Nitride (GaN) MOSFETs/IGBTs can be included in addition to the power electronic switching devices which imparts the knowledge about latest technology to the students. |
| | | III | The topic Cuk regulator can be included in Switched mode regulators which gives knowledge about the operation and applications of the converter to the students. |
| 2. | EE8601 & Solid State Drives | IV | Trapezoidal SPM machine and Sinusoidal PM Machine can be included in the topic PMSM Drive which gives knowledge about the operation and industrial applications to the students. Operation and control of BLDC motor can be included which will help the student to understand the operation of BLDC motor. Also in the course EE8661 Power Electronics And Drives Laboratory course, the experiment Characteristics of BLDC motor is given in the syllabus. |
| 3. | EE8005 Special Electrical Machines | III | Specific application of BLDC Motor in Electric Vehicles can be included in detail which makes the students to understand the application of BLDC. |
| | | | Design considerations, torque and power requirement calculation of BLDC motor for electric vehicle can be included which will make the students to design BLDC motor for various applications. |
| 4. | Revision / alternation in laboratory course | Power Electronics And Drives Laboratory In the 2017 regulations, the EE8661 Power Electronics And Drives Laboratory course, the experiment Characteristics of BLDC motor is included. In the requirement of equipment list the BLDC motor drive is not included. Also in the upcoming curriculum, Power Electronics and Drives Laboratory can be included in the Semester V so that students can able to understand the concepts through experiments. Cycloconverter experiment can be added, because students have learnt the theoretical concepts. | |
| 5. | Introduction to new course | E-vehicles The elective subject on the recent thrust area "E-vehicles" can be included in the EEE curriculum along with corresponding laboratory course to get better understanding and placement in E-Vehicle Companies | |

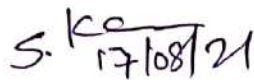
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|-----------------|---|
| Reference Books | EE8552 – Power Electronics |
| | Text book |
| | Erickson RW, Maksimovic D. Fundamentals of power electronics. Springer Science & Business Media; 2007. |
| | Reference books |
| | V.R.Moorthi, 'Power Electronics- Devices, Circuits and Industrial Applications', Oxford University Press, 1st Edition, 2005. Cyril.W.Lander, Power Electronics, McGraw Hill International, Third Edition, 1993 |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


 17/08/2021
Domain Coordinator
 [N.GANESH]


 17/08/21
HoD/EEE


Vice Principal


Principal

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.



RAMCO INSTITUTE OF TECHNOLOGY
Department of Electrical and Electronics Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Electronics / Embedded System / Other and Related Streams of the AU R-2017 Electrical and Electronics Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 16.08.2021

The academic administrative bodies of Ramco Institute of Technology's Electrical and Electronics Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electrical and Electronics Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Electronics / Electrical Machines / Embedded System / Other** are given below:

| | |
|---------------------|---|
| Faculty members | Dr. K. Karthikeyan, Associate Professor Ms. S. Sharmilakumari, Assistant Professor Mrs. G. Sivapriya, Assistant Professor Mr. A. Guna, Assistant Professor |
| Student Members | Mr. A. Abishek Bebito (953620105001) Mr. S. Aravind (953619105003) Ms. M. I. Rohini (953618105020) |
| Industry Members | Mr. M. Kamalakkannan , Principal Engineer, Continental Automotive Pte. Ltd, Singapore. Mr. U. Sarathi , Electrical Engineer, Firstman Management Service Pvt Ltd, Coonoor, The Nilgris – 643103. |
| Alumni Members | Mr. P. Prem Kumar , Test Engineer 2, Tessolve Semiconductor Private Ltd, Bengaluru, India Mr. M. Murali Kumar , Test Engineer, Data Patterns India Pvt Ltd Chennai, India |
| Faculty Coordinator | Mr. D. Karthik Prabhu, Assistant Professor (SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest

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technological developments in the courses which are related to the domain of Electronics / Electrical Machines / Embedded System / Other.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course.


| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|--|------|--|
| 1. | EE8251 Circuit Theory | - | Single phase AC circuits' concepts are important to understand transient, resonance and coupled circuits. Hence the topics such as Sinusoids, Phasors, Inductance and Capacitance, Impedance and admittance, Power triangle can be included in the syllabus. |
| | | - | The power system components and electronic components are analyzed based on the concepts of Two-port Networks. The topics like Impedance, admittance, Hybrid and Transmission parameter can be added to the syllabus. |
| 2. | EE8261 – Electric circuits laboratory | - | In Circuit theory subject students studying all the circuit theorems. But in concerned lab course Verification of Reciprocity and Millman's theorems are missing. So it can be included. |
| 3. | EE8351 Digital Logic Circuits | III | For better understanding the operation of sequential circuits, Clock divider circuits and clock dividing methods could be added. |
| | | V | Helps the students to implement VHDL code for various basic automation systems, a VHDL code to run a simple finite state machine (FSM) can be added. |
| 4. | EE8301 Electrical Machines - I | - | In today's scenario most the industrial application based on AC motors and drives only. Less importance for DC machines. The content of the Electrical Machines – I syllabus can be reduced and more importance can be given for AC machines. |
| 5. | EE8391 – Electromagnetic Theory | - | Simulation will make the students to understand concepts better. So Simulation of Electric Fields and Magnetic Fields using FEM packages can be included in the syllabus |
| 6. | EE8451 Linear Integrated Circuits And Applications | I | Exposure may give to students to understand the recent updated version of transistor like FinFET, GAAFET basics can be included in the syllabus |
| | | IV | To understand the absolute max. ratings, Electrical characteristics, Package information students can be provided with IC datasheet specification basics. |
| 7. | EE8401 Electrical Machine II | V | Submersible motors concepts, construction and applications can be included in the Electrical Machines – II theory |
| | | V | Compressors concepts, construction and applications can be included in the Electrical Machines – II theory |
| 8. | EE8411 Electrical Machines Laboratory - II | - | In all the product based industry speed control plays the vital role with the help of VFD. So, speed control using VFD and PLC can be included in the Electrical Machines laboratory. |
| 9. | EE8591 Digital Signal Processing | IV | To meet the industry expectation in audio and video processing, students can be given an exposure in implementation of FIR filter using MATLAB (FDA tool) and Implementation of N point DFT using MATLAB |
| 10. | EE8551 | IV | To give industrial exposure in MCs interfaces in modern |

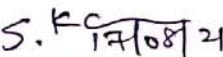
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|-----|---|----|---|
| | Microprocessors and Microcontrollers | | Speakers, stepper motors, LEDs, PWM signals, CAN bus, USB, Bluetooth, Wi-Fi, Video signals such as LVDS can be included |
| | | V | In day today life we are using SoC. So, System on Chips (SoC) Introduction - Comparison of micro controllers and SoC – SoC applications – Example SoC – Renesas R-CAR SoC can be included. Reference may be added: (https://www.renesas.com/us/en/products/automotive-products/automotive-system-chips-socs) |
| 11. | EE8691 Embedded Systems | II | Diagnostics protocol, RTOS and IoT plays a vital role in testing, Product development section of embedded product based company. So, in order to meet the industry expectation Diagnostics protocol, Operating systems in Embedded systems: Linux, Android based and Internet of Things (IoT, connected devices) can be included. Reference may be added: https://en.wikipedia.org/wiki/Unified_Diagnostic_Services |
| | | | In Embedded systems industries, this topic becomes most important and many countries having standards (ex: for Road vehicles: ISO21434 /UNECE ECE/TRANS/WP.29/2020/79) Cyber Security(CS) for Embedded Systems Introduction of Cyber Security – attributes of CS - Types of attacks in Embedded systems – HW Secure modules (HSM) - Secure hardware Extensions (SHE) – Applications of CS in embedded systems - Firmware Over The Air (OTA / FOTA) - Real time example (passenger car CS attack) |
| 12. | Revision / alternation in laboratory course | | EE8461 - Linear and Digital Integrated Circuits Laboratory Clock dividing methods like Divide the clock by 2, by 3 , ...by N and Implementation of VHDL code for FSM of real life examples (washing machine, AC etc) Below experiment statements could be modified to be more generic giving the freedom to choose any suitable IC available in the market rather than sticking to one IC number, Thus giving the opportunity to the students to explore and find the IC for application intended. Experiment 10: Voltage to frequency characteristics of NE/ SE 566 IC. Experiment 11: Variability Voltage Regulator using IC LM317. |
| 13. | Introduction to new course | | 1. We can club machine part 1 and 2 of electrical machine design into single course work as it is more theoretical one and lack application or design aspects from industry perspective. 2. Instead we can think about course work on Computer aided machine design which touches following points a. Electromagnetic Field computation and modeling b. Manufacturing and testing of Transformers and Switchgear |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


17/8/2021
Domain Coordinator
D. KARTHIK PRABHU
AP(SO)/EEE

S. K. 
17/8/21
HOD/EEE


17/8/21
Vice Principal


17/8/21
Principal

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.





RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

An ISO 9001:2015 certified institution



Lr.No.RIT/EEE/AU Comm./01

10.06.2018

To

The Director
Centre for Academic Courses,
Anna University, Chennai – 600 025

Sir/ Madam,

Sub: Suggestion regarding R2017 Syllabus

In our college we have five Bachelor of Engineering courses namely Civil, CSE, EEE, ECE and Mechanical. As per Anna University regulation 2017, all the above said courses have a curriculum with GE8261 Engineering Practices Laboratory in second semester. In the same semester above said departments have Basic Electrical and Electronics Engineering theory subjects. Students felt difficult to understand the basic concepts of the subjects. If the GE8261 Engineering Practices Laboratory is moved to first semester students can learn better about the fundamentals regarding basic Electrical and Electronics Engineering components and their operation.

So, we request you to consider this suggestion for the future curriculum design.

S. Ka
10/06/2018
HoD/EEE



J. P. S.
10/6/18
Principal

North Venganallur Village, Rajapalayam - 626 117. Tamil Nadu.

Tel : 04563 233400, 233410; Fax : 233499

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RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

An ISO 9001:2015 certified institution



Lr.No.RIT/EEE/AU Comm./02

10.06.2018

To

The Director
Centre for Academic Courses,
Anna University, Chennai – 600 025

Sir/ Madam,

Sub: Suggestion regarding R2017 Syllabus

In our college we have five Bachelor of Engineering courses namely Civil, CSE, EEE, ECE and Mechanical. As per Anna University regulation 2017, in EEE department syllabus we have the theory subject IC8451 Control System in fourth semester and the corresponding practical subject EE8511 Control and Instrumentation Laboratory in fifth semester.

Similarly we have the theory subject EE8552 Power Electronics in fifth semester and the corresponding practical subject EE8661 Power Electronics and Drives Laboratory in sixth semester

We felt there is a lack of continuity in that particular subject. If both the theory and corresponding practical subject in the same semester, students can learn practically better and have continuity.

So, we request you to consider this suggestion for the future curriculum design.

S. Karthikeyan
10/06/2018
HoD/EEE



J. Rajkumar
10/06/18
Principal

North Venganallur Village, Rajapalayam - 626 117. Tamil Nadu.

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**The Department of
Electronics and
Communication Engineering**



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 certified institution



Lr. No. RIT/ECE/AU Comm./2021-22/01

06.08.2021

To

The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600025
Respected Sir/Madam,


Sub: Representation of Curriculum Gap in the existing curriculum R-2017 of Electronics and Communication Engineering - Submission of suggestions to be included in curriculum content in the forthcoming R 2021 of Electronics and Communication Engineering - reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Electronics and Communication Engineering for consideration and inclusion in the forthcoming AU R-2021 curriculum and syllabus of Electronics and Communication Engineering.

1. Consolidated Report of Curriculum Gap Analysis and Identification for Embedded Systems and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R-2021.
2. Consolidated Report of Curriculum Gap Analysis and Identification for VLSI Design and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R-2021.
3. Consolidated Report of Curriculum Gap Analysis and Identification for Communication Systems and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R- 2021.

We kindly request you to consider our suggestions while framing the regulation of AU R-2021 curriculum and syllabus of Electronics and Communication Engineering.

Thanking you,


HOD 6/8/2021


Vice-Principal


Principal

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

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RAMCO INSTITUTE OF TECHNOLOGY
Department of Electronics and Communication Engineering

06.08.2021

Consolidated Report of Curriculum Gap Analysis and Identification for Communication Systems and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Electronics and Communication Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify the curricular gaps on regular basis, taking into account current industry needs, Programme Outcomes, Programme Specific Outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electronics and Communication Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help of the following stakeholders i) Inputs from Faculty members with Specific Competency/Domain Knowledge; ii) Student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of Communication Systems and related streams are given below:

| | |
|-----------------|--|
| Faculty members | <ol style="list-style-type: none">1. Dr.S.Periyanyagi, Professor2. Dr.S.Vairaprakash, Assistant Professor3. Mrs.G.Gnana Priya, Assistant Professor (SG)4. Mrs.S.Jeeva, Assistant Professor5. Ms.S.Harini Shriram, Assistant Professor6. Mr.L.K.Balaji Vignesh, Assistant Professor7. Ms.S.A.Radhika, Assistant Professor |
| Student Members | <ol style="list-style-type: none">1. Mr.R.Arunprasanth (953617106015)2. Mr.M.Muthukrishnan (953617106056)3. Ms.J.Shaina Davita (953617106079)4. Ms.Libiya Joseph (953617106051) |


6/8/21

| | |
|--------------------|---|
| Alumni Members | 1. Ms.N.Subashini, Associate Engineer, Ericsson India Global Services (P) Ltd., Bangalore 2. Ms.K.Padmajaya Rekha, Machine Learning Engineer, Optisol Business Solutions (P) Ltd., Chennai |
| Domain Coordinator | Mr. K. Ragavan, Assistant Professor (SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of Communication Systems.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) Addition/Inclusion of topics suggested in existing units; ii) New Courses/ Course Contents that may be added to the curriculum; iii) Course / Course Contents that can be interchanged; iv) Employability Enhancement Course; v) Reference Books.

| Sl.No. | Course Code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|--------|---|------|---|
| 1. | EC8491 - Communication Theory | III | In Unit III (Random Process), most of the topics are common in MA8451- Probability and Random Process. Both the subjects are in IV semester. So, it would be better to remove those topics in EC8491-Communication Theory and applications of Random process related to analog communication can be included. |
| | | V | It could be better to remove Sampling and Reconstruction theorem topic in Communication Theory. Because the same topic is available in Third Semester EC8352-Signals and Systems course |
| 2. | EC8352 - Signals and Systems | I | Static & dynamic systems, Even (symmetry) & Odd (Antisymmetry) Signals can be included |
| 3. | EC8561 - Communication Systems Laboratory | -- | In this Laboratory, the List of Experiments contains both Analog and Digital Communication related experiments. It would be better to remove the Analog Communication Experiments from this |

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| | | | Laboratory. It can be included as an integrated theory and laboratory course in IV semester as the students are studying EC8491- Communication Theory in the same semester. In addition, few experiments may be added related to analog communication. |
| 4. | EC8094 - Satellite Communication | III | Earth Segment topics can be included (Satellite Link Design) to know more about Earth Station Technology, Antenna Systems and Test Equipment Measurement. |
| 5. | EC8553 - Discrete-Time Signal Processing | V | Multirate signal processing (Decimation, Interpolation, Sampling rate conversion) and deep learning applications of signal processing can be included. |
| 6. | EC8562 - Digital Signal Processing Laboratory | V | It would be better to include Simulink Experiments in this laboratory. |
| 7. | EC8652 - Wireless Communication | - | Topics related to 5G Mobile and Wireless Communication Technology can be included |
| 8. | New Courses/ Course Contents that may be added to the Curriculum | | A new laboratory may be introduced in VII Semester related to Digital Image and Video Processing. It will be useful for the students who are working on projects in this area during the VIII semester. |
| 9. | Course / Course Contents that can be interchanged | | <ul style="list-style-type: none"> • In the subject EC8652 Wireless Communication, Unit I (Wireless Channels) and Unit II (Cellular Architecture) can be interchanged as Unit II is related to the basics of Wireless Communication. • EC8093 - Digital Image Processing subject is offered as Professional Elective in VIII semester. It would be better it can be made as professional core subject in VII semester itself. It will help the students doing projects in this domain during VIII Semester. • EC8004 - Wireless Networks subject is offered as Professional Elective. It would be better if it can be made as professional core subject. |

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| 10. | Employability Enhancement Course | Nowadays the modern cars feature autonomous systems like Autonomous Emergency Braking (AEB), Anti-lock breaking system, voice recognition, automatic parking etc., In order to ensure safety, timely communication between the vehicles is very essential. This can be achieved with the help of OBD (On-Board Diagnostics) technology which tracks and regulates a car's performance. So the course related to OBD can be included as Employability Enhancement Course. |
| 11. | Reference Books | <ul style="list-style-type: none"> • M.K.Simon, S.M.Hinedi and W.C.Lindsey, "Digital communication techniques; Signal Design and Detection", Prentice Hall of India, New Delhi, 1995. • Rajiv Ramaswami and Kumar Sivarajan, "Optical Networks – Practical Perspective", 3rd Edition, Morgan - Kaufmann Publishers. • Mischa Dohler, Jose F. Monserrat Afif Osseiran "5G Mobile and Wireless Communication Technology", Cambridge University Press 2016. • Louis J. Ippolito, Jr. "Satellite Communications Systems Engineering: Atmospheric Effects, Satellite Link Design and System Performance", Second Edition, 2017 |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


Domain Coordinator


Faculty Coordinator(s)


HOD/ECE


Vice Principal


Principal

RAMCO INSTITUTE OF TECHNOLOGY
Department of Electronics and Communication Engineering

06.08.2021

Consolidated Report of Curriculum Gap Analysis and Identification for VLSI Design and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Electronics and Communication Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify the curricular gaps on regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electronics and Communication Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help following stakeholders i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of VLSI Design and related streams are given below:

| | |
|--------------------|--|
| Faculty members | 1. Mr. S. Vijayakumar, Assistant Professor 2. Mr. D. Gopinath, Assistant Professor 3. Mr. P. Venketesh, Assistant Professor 4. Mrs.V. SrirengaNachiyar, Assistant Professor(SG) 5. Mrs. R. Ramalakshmi, Assistant Professor 6. Mrs. R. Divya, Assistant Professor |
| Student Members | 1. Mr.S.Bhuvan Akshay (953617106018) 2. P.Kothawari (953617106044) 3. Mr.K.Hariram Sundravel (953617106027) 4. Ms.S.G Udhaya (953617106095) |
| Alumni Members | 1. M.Aravinthan,Electrical Design Engineer, Archetype Group, Chennai 2. A.Sriram, Test Engineer, Tessolve Semiconductor, Bangalore |
| Domain Coordinator | Dr. A. Azhagu jaisudhan Pazhani, Assistant Professor(SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of VLSI Design.


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In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units ii) New Courses/ Course Contents that may be added to the Curriculum iii) Course / Course Contents that can be interchanged (iv) Employability Enhancement Course (v) Reference Books

| Sl.No. | Course Code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|--------|--|------|---|
| 1. | EC8351-Electronic Circuits-I | IV | <ul style="list-style-type: none"> For analysing the notion of high frequency model to low frequency model of circuits, short-circuit current gain and unity-gain frequency of MOSFET and JFET can be incorporated. |
| 2. | EC8651 - Transmission Lines and RF Systems | IV | <ul style="list-style-type: none"> Filter circuits are frequently used in high-performance transmission line systems, where specific frequency bands must be boosted or suppressed for optimal quality and power economy. Filter, as well as its classification, might be included. |
| 3. | EC8452 - Electronic Circuits II | IV | <ul style="list-style-type: none"> Blocking Oscillators topic can be included to know the concept of narrow pulse generation. Time basis circuits can be used to help students comprehend how an electrical circuit generates an output voltage or current waveform that varies linearly with time. |
| 4. | EC8095 - VLSI Design | I | <ul style="list-style-type: none"> Physical layout that can be used to understand how to convert a stick diagram to a physical layout that might be included. |
| 5. | EC8361 - Analog and Digital Circuits Laboratory | - | <ul style="list-style-type: none"> Verilog Codes of logic gates shall be included in the List of Experiments to get better understanding in Coding knowledge |
| 6. | EC8661 VLSI Design Laboratory | - | <ul style="list-style-type: none"> One mini Project can be included in the Laboratory Experiment for better understanding analog CMOS VLSI design. |
| 7. | EC8261 - Circuits and Devices Laboratory | - | <ul style="list-style-type: none"> One mini Project can be included in the Laboratory Experiment related to Electronic Devices and Circuits. |
| 8. | New Courses/ Course Contents that may be added to the Curriculum | | <ul style="list-style-type: none"> RF & Microwave circuits and systems shall be included as a separate course. Analog VLSI Design has more scope compared to digital design. Ultra-high |

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|-----|---|--|
| | | speed blocks of an IC are generally the analog blocks, such as a voltage controlled oscillator, an Operational Amplifier in a data converter, charge pumps in clock multipliers, etc.. Which are also the most challenging ones to design and optimize. Also, analog design engineers are quite handsomely paid in most of the top companies. |
| 9. | Course / Course Contents that can be interchanged | <ul style="list-style-type: none"> In the course EC8651 Transmission Lines and RF Systems, as the syllabus is very vast, S parameters topic can be removed from this course and can be included in Antennas and Microwave Engineering course. |
| 10. | Employability Enhancement Course | <ul style="list-style-type: none"> PCB Design, IC Testing courses can be included to improve employability skills, and core knowledge of the students. |
| 11. | Reference Books | <p>References:</p> <ol style="list-style-type: none"> Sadiq M. Sait, Habib Youssef ·VLSI Physical Design Automation: Theory and Practice, World Scientific Publication, 1999. Muhammad H. Rashid, Microelectronic Circuits: Analysis And Design, Cengage Learning, Third Edition, 2016 Anant Agarwal, Jeffrey Lang , Foundations of Analog and Digital Electronic Circuits, Elsevier, 2005 Joe Carr, Radio Society of Great Britain RF Components and Circuits, Newnes (Elsevier Science), 2002 |


Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


6/8/21
Domain Coordinator


6/8/2021
Faculty Members


6/8/2021
HOD/ECE


6/8/21
Vice Principal


6/8/21
Principal

RAMCO INSTITUTE OF TECHNOLOGY
Department of Electronics and Communication Engineering

06.08.2021

Consolidated Report of Curriculum Gap Analysis and Identification for Embedded Systems and Related Streams of the AU R-2017 Electronics and Communication Engineering Curriculum and Suggestions to fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Electronics and Communication Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify the curricular gaps on regular basis, taking into account current industry needs, Programme Outcomes, Programme Specific Outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Electronics and Communication Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help of following stake holders i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of Embedded Systems and related streams are given below:

| | |
|--------------------|--|
| Faculty members | 1. Dr. B.Deepa Lakshmi, Associate Professor 2. Mr. P.Gunasekaran, Assistant Professor 3. Mr. R.Deiva Nayagam, Assistant Professor 4. Mr. G.Sivakumar, Assistant Professor 5. Mr. A.Rameshbabu, Assistant Professor |
| Student Members | 1. Ms.R.Abirami (953617106002) 2. Ms.A.Adishree Trinetra (953617106004) 3. Ms.R.Priyadharshini (953617106067) 4. Mr.V.Vasanthakumar (953617106101) |
| Alumni Members | 1. Mr.A.Sriram, Test Engineer, Tessolve Semiconductors, Bangalore. 2. Mr.B.Veeramani Viswanathan, Hardware Design Engineer, VVDN Technologies, Chennai. |
| Domain Coordinator | Mr. B.Kannan, Assistant Professor(SG) |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of Embedded Systems.

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In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) Course/Course Contents that can be interchanged, iv) New courses that may be added to the curriculum, and v) Employability enhancement courses.

| Sl. No. | Course Code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap. |
|---------|---|------|---|
| 1. | EC8392 - Digital Electronics | V | Inclusion of logic gates Verilog codes topic provides better practical coding knowledge to the students. |
| 2. | BE8254 - Basic Electrical and Instrumentation Engineering | I | The following topics like Transmission line parameters overhead lines & underground cables: parameters calculations can include which gives basic calculation on cable parameter analysis to the students. |
| | | II | Heating characteristics of the distribution transformer can include as an additional topic will give knowledge about energy loss during transmission to the students. |
| | | III | Permanent Magnet Synchronous Motor (PMSM) and Switched Reluctance Motors (SRM) shall be included, so that students will learn the importance of the motor in automation industries. |
| 3. | EC8391 - Control Systems Engineering | I | Adding MATLAB programs to find the overall transfer function of the systems gives basic knowledge about programming in MATLAB software to the students |
| | | II | The inclusion of Simulink to plot and analysis the responses of a system helps the students to understand the practical implementation of system response analysis. |
| | | III | A MATLAB/Python simulation for frequency response analysis (Bode Plot - Polar Plot) of a system topic can be included for real-time analysis to the students |
| | | IV | The inclusion of MATLAB/Python simulator to the plot root locus of a system to analyze the stability of a system helps the students to choose a suitable compensator. |
| 4. | EC8791 - Embedded and Real-Time System | I | Topics like Memory Protection, Memory Management, and Embedded Security Design will be added to enhance the virtual mode operation of the processor. |
| 5. | | IV | More case studies can be added to get knowledge on Real-Time embedded systems. Topic related to IoT can be included to understand the importance of devices with basic components to develop new devices by the students. |

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| 6. | EC8252 - Electronic Devices | I | Direct and Indirect semiconductors, Electrons and Holes, Intrinsic and Extrinsic materials topics may include to give strong basic knowledge to the students to understand the remaining topics in the subject |
| | | II | Topics like Biasing, Quiescent point and Load line Biasing of the transistor can include, which gives knowledge about types of biasing in transistor to the students. |
| 7. | EC8001 - MEMS and NEMS | V | The Unit title is Nano Devices, but many topics are irrelevant to Nano Devices. It would be better to include Overview and Applications of NEMS in this unit to give basic information to the students for learning remaining topics in the subjects. |
| 8. | EC8711 - Embedded Laboratory | - | RTOS related Experiments may include, which provide more practical knowledge in the RTOS platform. |
| 9. | EC8691 - Microprocessors and Microcontrollers | V | Inclusion of an introduction to AVR ATmega Family will give basic knowledge to the students to design systems. |
| 10. | New Courses that may be added to the Curriculum | | Advanced Microprocessor and Microcontroller course is not available in R-2017 regulation. It would be better to add this course in the R-2021 curriculum which will help the students to do real-time projects in this domain. |
| 11. | Course / Course Contents that can be interchanged | | <ul style="list-style-type: none"> The course EC8391 Control System Engineering in III Semester can be brought to IV Semester as the students are studying the derivative and problematic courses like Linear Algebra and Partial Differential Equations, Electronic Circuits I, Signals and Systems and Digital Electronics in III semester, they feel difficult to understand the fundamentals of all courses in the same semester itself. EC8001- MEMS and NEMS, As the syllabus is very vast, the topic Materials for MEMS and NEMS: Silicon, silicon compounds, polymers, metals can be brought to Unit-II. |
| 12. | Employability Enhancement courses | | <ul style="list-style-type: none"> Nowadays, most of the physical devices around us are now connected to the internet. The Internet of Things (IoT) is making the fabric of the world around us smarter and more responsive, merging digital and physical devices. So, IoT can be included as Value Added Course. Artificial intelligence is a platform for upcoming industries development in automation and to find a solution for real-world problems in |

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| | | data analysis/ augmented reality/ virtual reality/ robotics, So, Artificial Intelligence can be included as Value Added Course. |
| 13. | Reference Books | EC8252 - Electronic Devices Ben. G. Streetman, Sanjay Kumar Banerjee, "Solid State Electronic Devices", 7th Edition, Pearson Education, 2016, ISBN 978-93-325-5508-2 |
| | | EC8391 - Control Systems Engineering Derek Atherton, "Control Engineering - An introduction with the use of MATLAB" 2009 Derek Atherton & Ventus Publication ApS, ISBN 978-87-7681-466-3. |
| | | EC8691 - Microprocessors and Microcontrollers Muhammad Ali Mazidi, Sarmad Naimi, and Sepehr Naimi. "AVR Microcontroller and Embedded Systems: Using Assembly" 1st Edition, Pearson Education India, ISBN: 9789332518407, 9789332518407 |
| | | EC8791 - Embedded and Real-Time System David Atienza Alonso, Stylianos Mamagkakis, Christophe Poucet, Dynamic Memory Management for Embedded Systems, Springer; ISBN-13 : 978-3319362205. |
| | | BE254 - Basic Electrical and Instrumentation Engineering K.Venkataratnam, "Special Electrical Machines", Universities Press (India) Private Limited, 2008. |
| | | |
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| | | |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.


Domain Coordinator


Faculty Coordinator(s)


HOD/ECE


Vice Principal


Principal

**The Department of
Mechanical Engineering**



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

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NBA Accredited UG Programs: CSE, EEE, ECE, MECH



08.09.2023

To
The Director
Centre for Academic Courses
Anna University
Chennai

Respected Sir

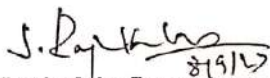
Sub: Representation of Curriculum Gap in the existing curriculum R-2021 of Mechanical Engineering – Submission of suggestions to be included in curriculum content in the forthcoming regulation of Mechanical Engineering – AY2023-2024 - reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Mechanical Engineering for consideration and inclusion in the forthcoming regulation of Mechanical Engineering.


- Consolidated Report of Curriculum Gap Analysis and Identification for **Thermal Engineering** and Related Streams of the AU R-2021 Mechanical Engineering Curriculum and Suggestion to fill the curricular gaps in the forthcoming regulation.

We kindly request you to consider our suggestions while framing the new regulation of Mechanical Engineering.

Thanking you,


Head of the Department


Vice-Principal


Principal



North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



RAMCO INSTITUTE OF TECHNOLOGY

Department of Mechanical Engineering

Academic Year 2023-2024

Consolidated Report of Curriculum Gap Analysis and Identification for Thermal Engineering and Related Streams of the AU R-2021 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming Regulation

Date: 08.09.2023

We are happy to share that the statutory committees, namely the Programme Assessment and Quality Improvement Committee (PA&QIC) and the Department Advisory Committee (DAC), of the Department of Mechanical Engineering at Ramco Institute of Technology are functioning well, and conducting periodic meetings often involves the participation of all the stakeholders. These meetings can provide valuable opportunities for professional development as individuals gain experience in governance, policy-making, and decision-making processes.

In our 7th PA&QIC meeting, which was conducted on 28.08.2023 (Monday), we discussed and derived some valuable input related to academic improvements, i.e., identification of curricular gaps and addressing those as content beyond the syllabus. We wish to bring to your kind notice that i) we have already submitted curricular gaps in the R2017 Mechanical Engineering Syllabus, and a few of them are reflected in R2021. ii) Introducing the performance indicator in our internal assessment question paper as per the AICTE examination reforms of 2018 ensures higher-order learning.

Now, we wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University R2021 Mechanical Engineering Curriculum & Syllabus.

For your kind perusal, the curricular gaps are identified from the stakeholders in the following ways i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Thermal Engineering** are given below:

| | |
|----------------------------|---|
| Faculty members | Mr.M.Ashok Kumar, AP(SG)/Mech. Mr.M.Sivagaminathan alias Balaji, AP(SG)/Mech. Mr.R.Arun Kumar, AP(SG)/Mech. |
| Student Members | Balaji S (953621114004), Gowtham J (953621114012) Subbiah @ Selvam M (953621114051) |
| Faculty Domain Coordinator | Dr.V.Sivakumar, ASP / Mech. |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses that are related to the domain of **Thermal Engineering**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to the new course and (v) Revision / alternation in laboratory course

A. Theory Courses

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|---|------|--|
| 1 | CME385 Refrigeration and Air Conditioning | I | Montreal and Kyoto protocols |
| | | II | Effect of temperature and pressure on COP of the cycle |
| | | V | Working of Window types packaged air conditioners. |

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|--|------|--|
| | | | Central air conditioning system, Round the year air conditioning. Introduction to Building (Energy) Management System (BMS). |
| 2 | CME362 Energy Conservation in Industries | I | 1.Types/Forms of Energy relevant to the course may be included 2. Role of Energy Auditors may be included |
| | | II | Energy Conservation in Heat Exchangers may be added |
| | | V | Conduct of an energy audit with the support of industry / cinema hall / wedding hall. |
| 3 | CME380 Automobile Engineering | I | Vehicle safety and its rating |
| | | II | Advancements in IC Engines and Engine Management system |
| | | IV | Electronic stability control Electronically Controlled Active Suspension System |
| | | V | Progression of EV & Autonomous vehicles |

Note: Certified that the consideration of the above suggestions to address the curricular gap will not increase in the total number of periods for the respective courses.

B. Laboratory Courses

Introducing new additional experiments in laboratories is essential for students to get hands-on experience with current technological developments and enhance the psychomotor skill. The proposed additional experiments in the domain of thermal engineering are listed in the following table.

| Sl. No. | Course code & Title | Additional experiments to be included |
|---------|---------------------------------------|---|
| 1. | ME3451 Thermal Engineering Laboratory | 1. Measure the valve timing diagram by using electric variable valve timing actuator 2. Performance test in heat pipes |
| 2. | ME3682 Heat Transfer Laboratory | 1. Measurement of thermal conductivity of nano fluid 2. Performance test in solar dryer / solar collector |

C. Integrated Courses

Integrated courses always provide an experienced learning that prepares students for the complexities of the modern world and the demands of diverse careers. It is noticed that the integrated courses are included in the R2021 curriculum of other programmes such as CSE, EEE, ECE, etc. The proposed integrated courses in the domain of thermal engineering are listed in the following table.

| S.No. | Existing Theory Course in R2021 | Laboratory Course in R2021 | Proposed Integrated Course in new regulation |
|-------|---------------------------------|---------------------------------------|--|
| 1. | ME3451 Thermal Engineering | ME3461 Thermal Engineering Laboratory | Thermal System Design |
| 2. | ME3691 Heat and Mass Transfer | ME3682 Heat Transfer Laboratory | Heat transfer Technologies |

We are requesting that you consider the above-listed curricular gap in the domain of thermal engineering theory courses, laboratory courses, and proposed integrated courses and include it in the forthcoming regulation.

V. Indran
8/9/23
Domain Coordinator

S. Jagan
8/9/23
HOD/Mech.

Priyanka
8/9/23
Principal



S. Jagan
8/9/23
Principal



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

NAAC Accredited and An ISO 9001:2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE, MECH



11.09.2023

To
The Director
Centre for Academic Courses
Anna University
Chennai

Respected Sir

Sub: Representation of Curriculum Gap in the existing curriculum R-2021 of Mechanical Engineering – Submission of suggestions to be included in curriculum content in the forthcoming regulation of Mechanical Engineering – AY2023-2024 - reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Mechanical Engineering for consideration and inclusion in the forthcoming regulation of Mechanical Engineering.

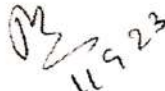
- Consolidated Report of Curriculum Gap Analysis and Identification for **Manufacturing Engineering** and Related Streams of the AU R-2021 Mechanical Engineering Curriculum and Suggestion to fill the curricular gaps in the forthcoming regulation.

We kindly request you to consider our suggestions while framing the new regulation of Mechanical Engineering.

Thanking you,


Head of the Department


Vice-Principal


Principal



North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



RAMCO INSTITUTE OF TECHNOLOGY
Department of Mechanical Engineering

**Consolidated Report of Curriculum Gap Analysis and Identification for Manufacturing .
Engineering and Related Streams of the AU R-2021 Mechanical Engineering Curriculum and
Suggestions to Fill the Curricular Gaps in the Forthcoming Regulation**

Date: 11.09.2023

We are happy to share that the statutory committees, namely the Programme Assessment and Quality Improvement Committee (PA&QIC) and the Department Advisory Committee (DAC), of the Department of Mechanical Engineering at Ramco Institute of Technology are functioning well, and conducting periodic meetings often involves the participation of all the stakeholders. These meetings can provide valuable opportunities for professional development as individuals gain experience in governance, policy-making, and decision-making processes.

In our 7th PA&QIC meeting, which was conducted on 28.08.2023 (Monday), we discussed and derived some valuable input related to academic improvements, i.e., identification of curricular gaps and addressing those as content beyond the syllabus. We wish to bring to your kind notice that i) we have already submitted curricular gaps in the R2017 Mechanical Engineering Syllabus, and a few of them are reflected in R2021. ii) Introducing the performance indicator in our internal assessment question paper as per the AICTE examination reforms of 2018 ensures higher-order learning.

Now, we wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University R2021 Mechanical Engineering Curriculum & Syllabus.

For your kind perusal, the curricular gaps are identified from the stakeholders in the following ways i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Manufacturing Engineering** are given below:

| | |
|---------------------|---|
| Faculty members | Dr.S.Rajakarunakaran, Professor/ Mech, Dr.P.Sureshkumar, ASP/Mech, Dr.M.Lakshmanan, AP(Sr.Gr)/Mech, Mr.M.Ramar, AP/Mech, Mr.S.Kathiravan, AP/Mech |
| Student Members | Ms.P.Sivaharani Priya (953622114024), Mr.N.Gurusankar (953621114028), Mr.R.Ganesh (953620114312) |
| Faculty Coordinator | Dr.S.Maharajan AP(Sr.Gr) / Mechanical Engineering |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses that are related to the domain of **Manufacturing Engineering**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to the new course and (v) Revision / alternation in laboratory course

A. Theory Courses

| S. No | Course Code and Course Name | Units | Topic suggested for the Curriculum gap |
|-------|---|-------|---|
| 1. | ME3393 Manufacturing Processes | I | Calculation on finding Solidification time |
| | | III | Equal Channel Extrusion Process |
| | | V | 3D Printed Plastic Components |
| 2. | CME397 Surface Engineering | II | Solid Particle Erosive Wear |
| | | III | Hot corrosion behavior and its surface coatings |
| 3. | ME3392 Engineering Materials and Metallurgy | I | Unit Cell Characteristics |
| | | V | Corrosion testing of materials |
| 4. | ME3592 – Metrology and Measurements | III | Nano measurements, Tolerance of edges, ISO Geometrical Product Specifications (GPS) |
| | | V | Advanced Probe sensor in CMM |
| 5. | CME387 Non-Traditional Machining Processes | III | Ice jet Machining, Electrical Discharge Grinding, Electrical Discharge Diamond Grinding |

Note: Certified that the consideration of the above suggestions to address the curricular gap will not increase in the total number of periods for the respective courses.

B. Laboratory Courses

Introducing new additional experiments in laboratories is essential for students to get hands-on experience with current technological developments and enhance the psychomotor skill. The proposed additional experiments in the domain of thermal engineering are listed in the following table.

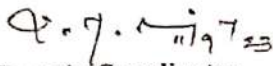
| S. No | Course Code and Course Name | Additional experiments to be included |
|-------|--|--|
| 1. | ME3382 Manufacturing Technology Laboratory | Perform various machining operations using Capstan and Turret Lathe. |
| 2. | ME3581 Metrology and Dynamics Laboratory | Inspect the small parts machined to close limits using mechanical comparator/Dial Gauge. |

C. Integrated Courses

Integrated courses always provide an experienced learning that prepares students for the complexities of the modern world and the demands of diverse careers. It is noticed that the integrated courses are included in the R2021 curriculum of other programmes such as CSE, EEE, ECE, etc. The proposed integrated courses in the domain of **Manufacturing Engineering** are listed in the following table.

| S.No. | Existing Theory Course in R2021 | Laboratory Course in R2021 | Proposed Integrated Course in new regulation |
|-------|---------------------------------|--|--|
| 1. | ME3493 Manufacturing Technology | ME3382 Manufacturing Technology Laboratory | Manufacturing Processes and Technology |

We are requesting that you consider the above-listed curricular gap in the domain of thermal engineering theory courses, laboratory courses, and proposed integrated courses and include it in the forthcoming regulation.


Domain Coordinator


HOD/Mech.


Vice Principal


Principal
11/9/23





RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

NAAC Accredited and An ISO 9001:2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE, MECH



11.09.2023

To
The Director
Centre for Academic Courses
Anna University
Chennai

Respected Sir

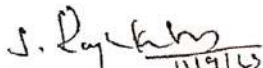
Sub: Representation of Curriculum Gap in the existing curriculum R-2021 of Mechanical Engineering – Submission of suggestions to be included in curriculum content in the forthcoming regulation of Mechanical Engineering – AY2023-2024 - reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Mechanical Engineering for consideration and inclusion in the forthcoming regulation of Mechanical Engineering.

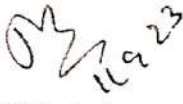
- Consolidated Report of Curriculum Gap Analysis and Identification for **Design and Allied Engineering** Streams of the AU R-2021 Mechanical Engineering Curriculum and Suggestion to fill the curricular gaps in the forthcoming regulation.

We kindly request you to consider our suggestions while framing the new regulation of Mechanical Engineering.

Thanking you,


11/9/23
Head of the Department


11/9/23
Vice-Principal


11/9/23
Principal



North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



RAMCO INSTITUTE OF TECHNOLOGY

Department of Mechanical Engineering
Academic Year 2023-2024

Consolidated Report of Curriculum Gap Analysis and Identification for Design and Allied Engineering Streams of the AU R-2021 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming Regulation

Date: 11.09.2023

We are happy to share that the statutory committees, namely the Programme Assessment and Quality Improvement Committee (PA&QIC) and the Department Advisory Committee (DAC), of the Department of Mechanical Engineering at Ramco Institute of Technology are functioning well, and conducting periodic meetings often involves the participation of all the stakeholders. These meetings can provide valuable opportunities for professional development as individuals gain experience in governance, policy-making, and decision-making processes.

In our 7th PA&QIC meeting, which was conducted on 28.08.2023 (Monday), we discussed and derived some valuable input related to academic improvements, i.e., identification of curricular gaps and addressing those as content beyond the syllabus. We wish to bring to your kind notice that i) we have already submitted curricular gaps in the R2017 Mechanical Engineering Syllabus, and a few of them are reflected in R2021. ii) Introducing the performance indicator in our internal assessment question paper as per the AICTE examination reforms of 2018 ensures higher-order learning.

Now, we wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University R2021 Mechanical Engineering Curriculum & Syllabus.

For your kind perusal, the curricular gaps are identified from the stakeholders in the following ways i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Design** are given below:

| | |
|----------------------------|--|
| Faculty members | Mr.C.Gururaj, AP(SG)/ Mech Mr.G.Prabu Ram, AP(SG)/ Mech Mr.S.Valai Ganesh, AP(SG)/ Mech Mr.L.Karthikeyan, AP(SG)/ Mech Mr.R.Venkatesh, AP/ Mech Mr.R.Prabhakaran AP/ Mech |
| Student Members | Thiyanesh Sakthi R (953620114342), Harish Krishnan R, (953621114033), Ayyanar M (953622114005) |
| Faculty Domain Coordinator | Dr.J.Jerold John Britto, AP(SG)/ Mech. |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses that are related to the domain of **Design**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to the new course and (v) Revision / alternation in laboratory course

A. Theory Courses

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|-----------------------------------|------|---|
| 1 | CME340 CAD/CAM | I | Lack of comprehensive instruction on interpreting and applying customer-specific requirements in engineering drawings. |
| | | II | Exploring 3D Projection Techniques for Enhanced Engineering Visualization |
| | | III | Advanced techniques for generating realistic textures and materials in 3D models for enhanced visualization |
| | | IV | Analysis of Dynamic Interactions: Exploring how assembled components behave under various motion scenarios and identifying potential issues beyond static clearances and interferences. |
| | | V | Advanced Techniques in CNC Machining: Multi-axis Simultaneous Machining for Complex Geometries and Advanced Toolpath Optimization. |
| 2 | ME3591 Design of Machine Elements | I | lack of emphasis on incorporating sustainability and environmental considerations into the machine design process, such as material selection based on eco-friendliness and life cycle analysis |
| | | IV | Insufficient coverage of advanced materials and their applications in spring design, such as composites or shape memory alloys |
| | | V | A laboratory exercise could involve students measuring the friction and wear characteristics of different types of bearings. |
| 3 | ME3351 Engineering Mechanics | I | Limited exploration of real-world applications and practical problem-solving skills in the context of statics of particles. |
| | | III | Practical aspects of centroid and moment of inertia calculations, potentially leaving students ill-equipped to apply these concepts in design and analysis tasks. |
| | | V | Modern computational tools and software used in solving complex statics and dynamics problems, hindering students' preparedness for contemporary engineering practices |
| 4 | ME3691 Robotics | I | Limited exploration of the ethical and societal implications related to the implementation of robotics and the application of the 'Laws of Robotics' in real-world scenarios |
| | | II | Practical exercises or projects that integrate forward and inverse kinematics concepts for complex robotic systems beyond 3 DOF, limiting real-world application understanding |
| | | V | Limited exploration of emerging sensor technologies and their integration with advanced robotic systems in diverse application domains. |

Note: Certified that the consideration of the above suggestions to address the curricular gap will not increase in the total number of periods for the respective courses.

B. Laboratory Courses

Introducing new additional experiments in laboratories is essential for students to get hands-on experience with current technological developments and enhance the psychomotor skill. The proposed additional experiments in the domain of design and allied engineering are listed in the following table.

| Sl. No. | Course code & Title | Additional experiments to be included |
|---------|---------------------------------------|--|
| 1. | ME3381 Computer Aided Machine Drawing | <ol style="list-style-type: none"> 1. Experimentation with tolerance stack-up analysis to understand the impact of tolerances on the assembly of mechanical components. 2. Application of GD&T principles through practical examples and measurements to understand how geometric tolerances are implemented. 3. Hands-on assembly and disassembly of mechanical systems to understand the importance of proper fits and clearances in real-world applications. |

C. Integrated Courses

Integrated courses always provide an experienced learning that prepares students for the complexities of the modern world and the demands of diverse careers. It is noticed that the integrated courses are included in the R2021 curriculum of other programmes such as CSE, EEE, ECE, etc. The proposed integrated courses in the domain of design and allied engineering are listed in the following table.

| S.No. | Existing Theory Course in R2021 | Laboratory Course in R2021 | Proposed Integrated Course in new regulation |
|-------|-----------------------------------|---|--|
| 1. | CE3493 Strength of Materials | CE3481 Strength of Materials and Fluid Machinery Laboratory | Materials Testing and Analysis Laboratory |
| 2. | ME3592 Metrology and Measurements | ME3581 Metrology and Dynamics Laboratory | Advanced Metrology and Experimental Dynamics |
| 3. | ME3791 Mechatronics and IoT | ME3781 Mechatronics and IoT Laboratory | Integrated Systems in Mechatronics and IoT |
| 4. | CME340 CAD/CAM | ME3681 CAD/CAM Laboratory | Integrated CAD/CAM Design and Practice |

We are requesting that you consider the above-listed curricular gap in the domain of Design and allied engineering theory courses, laboratory courses, and proposed integrated courses and include it in the forthcoming regulation.


Domain Coordinator


HOD/Mech.


Vice Principal


Principal



Fwd: R-2021 regulation B.E. Mech. Engg. – Representation from Affiliated institutions – Mismatch of list of experiments and equipments required for ME3461 Thermal Engineering Laboratory – Reg.

Wed, Mar 8, 2023 at 7:02 PM

Rajakarunakaran S <rajakarunakaran@ritrjpm.ac.in>
To: Azhagujaisudhan pazhani <azhagujaisudhan@ritrjpm.ac.in>, Arunkumar <arunr@ritrjpm.ac.in>

For your information

----- Forwarded message -----

From: RIT HOD MECH <hodmech@ritrjpm.ac.in>
Date: Wed, Mar 8, 2023 at 5:32 PM
Subject: R-2021 regulation B.E. Mech. Engg. – Representation from Affiliated institutions – Mismatch of list of experiments and equipments required for ME3461 Thermal Engineering Laboratory – Reg.
To: <dac@annauniv.edu>
Cc: Principal <principal@ritrjpm.ac.in>, Rajakarunakaran S <rajakarunakaran@ritrjpm.ac.in>, Ashok Kumar <ashokkumar@ritrjpm.ac.in>

Respected Sir/Madam,

Ref: R-2021 – Non Autonomous Affiliated colleges - B.E Mechanical Engineering and Laboratory requirement for UG courses – B.E Mechanical Engineering.

With the above reference in ME3461 Thermal Engineering Laboratory – Part I IC Engines Laboratory, 9th and 10th experiments are (i) Performance test on a two stage Reciprocating Air compressor and (ii) Determination of COP of a Refrigeration system. The equipments need for conducting these experiments are (i) Single / two stage reciprocating air compressor and (ii) Refrigeration test rig, but these equipments were given as equipments requirements of ME3682 Heat Transfer Laboratory instead of ME3461 Thermal Engineering Laboratory.

So we kindly request you to do the needful corrections and publish the revised list of equipments for the course ME3461 Thermal Engineering Laboratory.

Thanking you,

Note:

In R-2021 laboratory requirements for Affiliated colleges – Faculty of Mechanical Engineering – B.E. Mechanical Engineering, Heat transfer laboratory subject code is printed as ME3611 but the subject code given in “Non-Autonomous Affiliated Colleges – Regulations 2021 – B.E. Mechanical Engineering is ME3682 – Heat Transfer Laboratory.

In addition to that we have attached the respective laboratories syllabus and required equipments for your kind perusal.

with kind regards
Dr.S.Rajakarunakaran
Professor and Head
Department of Mechanical Engineering
Ramco Institute of Technology
Rajapalayam-626117
E-mail: rajakarunakaran@ritrjpm.ac.in; hodmech@ritrjpm.ac.in
Phone: +91 4563-233415, Mobile:9865312352 (WhatsApp)

Dr.S.Rajakarunakaran
Professor and Head
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Virudhunagar District, Tamilnadu
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srajakarunakaran@yahoo.com
Fax: 04563233499; Web: www.ritrjpm.ac.in

5 attachments

-  RIT - Mech - Anna University - Academics - 1.pdf
499K
-  ME3461 Thermal Engineering Lab.pdf
158K
-  ME3461 Thermal Engg Lab equipments.pdf
199K
-  ME3682 HEAT TRANSFER LABORATORY.pdf
161K
-  ME3682 Heat transfer lab equipments.pdf
199K



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)

NAAC Accredited and An ISO 9001:2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE, MECH



Lt. No.: RIT/Mech./Anna University/Academics/1

08.03.2023

To
The Director
Centre for Academic Courses
Anna University
Chennai

Respected Sir

Sub: R-2021 regulation – Affiliated institutions – B.E. Mechanical Engineering - Mismatch of list of experiments and equipments required for ME3461 Thermal Engineering Laboratory – Reg.

Ref: R-2021 – Non Autonomous Affiliated colleges - B.E Mechanical Engineering and Laboratory requirement for UG courses – B.E Mechanical Engineering.

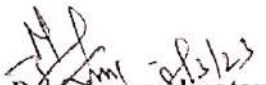
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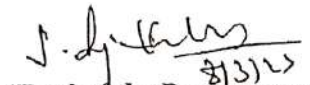
So we kindly request you to do the needful corrections and publish the revised list of equipments for the course ME3461 Thermal Engineering Laboratory.

Thanking you,

Note:

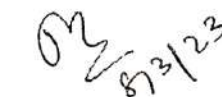
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Domain coordinator


Head of the Department


Vice-Principal




Principal

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.

Virudhunagar District, Tamil Nadu. Tel : 04563 233400

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Faculty of Mechanical Engineering

B.E. Mechanical Engineering

(R 2021) Semester – IV

ME3461 THERMAL ENGINEERING LABORATORY

| Sl. No. | Name of the Equipment | Required Numbers |
|---------|---|------------------|
| 1 | I.C Engine – 2 stroke and 4 stroke model | 1 set |
| 2 | Apparatus for Flash and Fire point | 1 No. |
| 3 | 4-stroke Diesel Engine with mechanical loading | 1 No. |
| 4 | 4-stroke Diesel Engine with hydraulic loading | 1 No. |
| 5 | 4-stroke Diesel Engine with electrical loading | 1 No. |
| 6 | Multi-Cylinder Petrol Engine | 1 No. |
| 7 | Single Cylinder Petrol Engine | 1 No. |
| 8 | Data Acquisition system with any one of the above engines | 1 No. |
| 9 | Steam Boiler with turbine setup | 1 No. |

ME3461

THERMAL ENGINEERING LABORATORY

L T P C
0 0 4 2

COURSE OBJECTIVES

- 1 To study the valve and port timing diagram and performance characteristics of IC engines
- 2 To study the Performance of refrigeration cycle / components
- 3 To study the Performance and Energy Balance Test on a Steam Generator.

45

PART I IC ENGINES LABORATORY

List of Experiments

1. Valve Timing and Port Timing diagrams.
2. Actual p-v diagrams of IC engines.
3. Performance Test on four – stroke Diesel Engine.
4. Heat Balance Test on 4 – stroke Diesel Engine.
5. Morse Test on Multi-Cylinder Petrol Engine.
6. Retardation Test on a Diesel Engine.
7. Determination of p-θ diagram and heat release characteristics of an IC engine.
8. Determination of Flash Point and Fire Point of various fuels / lubricants
9. Performance test on a two stage Reciprocating Air compressor
10. Determination of COP of a Refrigeration system

15

PART II STEAM LABORATORY

List of Experiments:

1. Study of Steam Generators and Turbines.
2. Performance and Energy Balance Test on a Steam Generator.
3. Performance and Energy Balance Test on Steam Turbine.

TOTAL:60 PERIODS

OUTCOMES:

At the end of the course the students would be able to

1. Conduct tests to evaluate performance characteristics of IC engines
2. Conduct tests to evaluate the performance of refrigeration cycle
3. Conduct tests to evaluate Performance and Energy Balance on a Steam Generator.

| CO | PO | | | | | | | | | | | | PSO | | |
|---------------------------------|----|---|---|---|---|---|---|---|---|----|----|----|-----|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| 1 | 2 | 2 | 1 | 1 | | | | | 1 | | | 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 1 | 1 | | | | | 1 | | | 1 | 1 | 1 | 1 |
| 3 | 2 | 2 | 1 | 1 | | | | | 1 | | | 1 | 1 | 1 | 1 |
| Low (1) ; Medium (2) ; High (3) | | | | | | | | | | | | | | | |



RAMCO INSTITUTE OF TECHNOLOGY

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NBA Accredited UG Programs. CSE, EEE, ECE, MECH



21:10.2022

To

**The Director
Centre for Academic Courses
Anna University
Chennai**

Respected Sir

Sub: Representation of Curriculum Gap in the existing curriculum R-2017 of Mechanical Engineering (III and IV Year) – Submission of gap identified for inclusion in R-2021 of Mechanical Engineering – reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Mechanical Engineering for consideration and inclusion in the forthcoming AU R-2021 curriculum and syllabus of Mechanical Engineering.

Enclosure: Consolidated report of curriculum gap analysis and identification for the following domains in Mechanical Engineering curriculum (III and IV Year) of the AU R-2017 and suggestion to fill the curricular gaps in the AU R-2021.

- Design domain
- Manufacturing domain
- Thermal domain
- Management domain


We kindly request you to consider our suggestions while framing the syllabus for III year and IV-year courses in the AU -2021 regulation of Mechanical Engineering.

Thanking you,


21/10/22
Head of the Department


21/10/22
Vice-Principal




21/10/22
Principal

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in



RAMCO INSTITUTE OF TECHNOLOGY

Department of Mechanical Engineering

Consolidated report of curriculum gap analysis and identification for Mechanical Engineering curriculum (III and IV Year) of the AU R-2017 and suggestion to fill the curricular gaps in the AU R-2021

Date: 21.10.2022

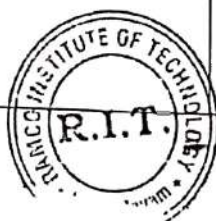
The academic administrative bodies of Ramco Institute of Technology's Mechanical Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing AU R-2017 III- and IV-year Mechanical Engineering course syllabus and for incorporation of the same in AU R-2021.

Curricular gaps are identified through feedbacks received from various stake holders as follows:

- i) faculty members with specific competency/domain knowledge
- ii) students who had pursued the courses
- iii) potential employers
- iv) Alumni of the department
- v) Industry/Professional Society Experts and
- vi) Academic peer groups from other Universities / Institutes

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the four identified domains of **Mechanical Engineering** are given below:

| Sl. No. | Domain | Domain Coordinator | Faculty members involved | Student members involved |
|---------|---------------|--------------------------------------|--|--|
| 1. | Design | Mr.J.Jerold John Britto, AP(SG)/Mech | Mr.C.Gururaj, AP(SG)/Mech Mr.G.Prabu ram, AP(SG)/Mech Mr.S.Valai Ganesh, AP/Mech Dr.J.Jabinth, AP/Mech Mr.L.Karthikeyan, AP/Mech Mr.R.Venkatesh, AP/Mech Mr.R.Prabhakaran, AP/Mech | Mr.K.Bharath, IV Year Mr.S.Rahul, IV Year Mr.A.Murali Krishnan, IV Year |
| 2. | Manufacturing | Mr.S.Maharajan, AP/Mech | Dr.S.Rajakarunakaran, HoD/Mech Dr.P.Suresh Kumar, ASP/Mech Dr.S.Godwin Barnabas, ASP/Mech Dr.M.Lakshmanan, AP(SG)/Mech Mr.S.Maharajan, AP/Mech Mr.M.Santhana Maruthu Pandian, AP/Mech Mr.M.Ramar, AP/Mech Mr.S.Kathiravan, AP/Mech Mr.P.Pavithran, AP/Mech | Mr.R.Dinesh, IV Year Mr.Soumya Souvik Khuntia, IV Year Mr.Bharath, IV Year Mr.S.P.Cheran, III Year Mr.C.Mariselvam, III Year |



| Sl. No. | Domain | Domain Coordinator | Faculty members involved | Student members involved |
|---------|------------|-------------------------------|---|--|
| 3. | Thermal | Mr.M.Ashok Kumar, AP(SO)/Mech | Dr.V.Sivakumar, ASP/Mech Mr.M.Sivagaminathan alias Baluji, AP(SO)/Mech Mr.R.Arun Kumar, AP/Mech | Mr.Anith Rajaseelan D, IV Year Mr.Dev Prasath S S, IV Year Mr.Vijay Jaganath PR, IV Year |
| 4. | Management | Mr.G.Praburam, AP(SO)/Mech | Dr.S.Rajakarunakaran, HoD/Mech Dr.S.Godwin Barnabas, ASP/Mech | Mr.Soumya Souvik Khuntia, IV Year Mr.Bharath, IV Year |

The identified curricular gaps are given below:

- Inadequate content in the syllabus to meet industry needs/expectations
- Lack of exposure to the latest technological developments.
- Lag in meeting the knowledge exposure to AICTE identified thrust areas
- Insufficiency in the content to meet the skill requirement as specified in National Education Policy

In order to address the above gaps in curriculum, the following measures are proposed in terms of modification/revision of existing curriculum by:

- addition/inclusion of topics suggested in existing units
- introduction of advanced topics in various courses
- introduction of new reference books for learning
- Introduction to new course
- Introduction of integrated courses (theory + laboratory)
- Revision / alternation in laboratory course

DESIGN DOMAIN COURSES

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|---|------|--|
| 1. | ME8791- Mechanics | IV | Study of PLC Applications |
| | | V | Industrial Stepper and Servo motor study with application |
| 2. | ME8099 - Robotics | I | Laws of Robotics, Different types of robots (Wheeled, legged, Work envelope-based system) |
| 3. | ME8692-Finite Element Analysis | II | 1D Geometry Creation, Editing and Meshing |
| | | III | CAE software demonstration |
| | | IV | 3D Geometry Creation, Editing and Meshing |
| 4. | ME8593 - Design of Machine Elements | II | Design based on combined torsion-Bending and axial loads |
| | | IV | Engine components design can be included in a separate course like the design of transmission systems. |
| 5. | ME8594 - Dynamics of Machines | III | Logarithmic Decrement |
| | | IV | Free vibration - Magnification factor |



MANUFACTURING DOMAIN COURSES

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|--|------|---|
| 1. | ME8501 Metrology and Measurements | III | Advanced probe sensor used in CMM |
| | | IV | Measurement statistics in roughness measurement. |
| 2. | ME8073 Unconventional Machining Process | II | Micro machining operations in Micro EDM. |
| | | V | Laser materials processing. |
| 3. | PR8592 Welding Technology | I | Modified waveform GMAW processes, Tandem MIG & TIG, Orbital GTAW & GMAW, Interpulse GTAW, VPPAW, WAA |
| | | II | MFDC process |
| | | III | MIAB welding, Magnetic Pulse Welding |
| | | IV | LASER hybrid Welding. Overlay, surfacing and cladding |
| | | V | Weldability of Magnesium, Titanium, Metal Matrix Composites; Weldability tests, Distortion and its control, Fatigue and Fracture Toughness Tests, Simulation and Modelling. |
| 4. | IE8693 Production Planning and Control | I | Case study of new product development |
| | | IV | Various priority rules in production scheduling |
| | | V | Inputs and Outputs of ERP |
| 5. | ME8094 Computer Integrated Manufacturing Systems | I | CAE concepts |
| | | II | Case of study in ERP |
| | | III | D Class in part classification & Coding |
| | | V | Industry 4.0 |
| | | V | Case study in Pandemics and endemics (COVID 19) |
| 6. | MF8071 Additive Manufacturing | II | Reverse Engineering, CAD |
| | | III | Slicing of 3D model |
| 7. | ME8097 Non Destructive Testing and Evaluation | I | Codes standards and specifications (ASME, ASTM, AWS, etc.) |
| | | II | Selection of Penetrant method – applicable codes and standards Selection of Method of Magnetization - applicable codes and standards |
| | | III | Basic Instrument calibration – calibration blocks, testing/evaluation/ interpretation, testing procedure, applicable codes and standards, specifications. |



THERMAL DOMAIN COURSES

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---|--|--|--|
| 1 | ME8693 Heat and Mass Transfer | I | Introduction to Numerical Method in heat transfer, Critical radius of insulation and thickness |
| | | II | Flow through Bank of tubes |
| | | The course can be integrated with Heat Transfer Laboratory and can be introduced as an integrated course | |
| Reference may be added: Mahesh M Rathore "Engineering Heat and Mass Transfer", 3 rd edition, University Science Press (An imprint of Laxmi Publications Pvt. Ltd.), Chennai, 2015. | | | |
| 2 | ME8091 Automobile Engineering | I | Vehicle safety and its rating |
| | | IV | Wheel and Tyre |
| | | V | Advancement in e-mobility vehicle, Introduction to Autonomous vehicle. |
| 3 | ME8792 Power Plant Engineering | I | Coal combustion, Introduction to quality circle |
| | | II | Gas combustion |
| | | V | Energy audit |
| Reference may be added: R K Rajput "A Text book of Power Plant Engineering", 5 th edition, Laxmi Publications Pvt. Ltd., New Delhi, 2016. | | | |
| 4 | ME8071 Refrigeration and Air conditioning | II | Variable refrigerant flow compressor Refrigeration system and its advantages |
| | | III | Brine Chiller – needs and applications, Thermal storage in part load condition. |
| | | V | Difference between DX and Chilled Water Coil, Load Diversity |



MANAGEMENT DOMAIN COURSES

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|---|------|---|
| 1 | GE8076 Professional Ethics in Engineering | I | Principle of behavior of an individual or group in the organization to enhance globally. |
| | | III | Awareness on socio- economic development |
| | | IV | Safety and Hazard management |
| 2 | GE8071 Disaster Management | I | Equity issues in disasters, Relationship between Disasters and Development and vulnerabilities |
| | | II | Survey of Activities before Disasters Strike, Survey of Activities during Disasters, DRR Master Planning for the Future |
| | | IV | National Disaster Response Force (NDRF) National Disaster Management Authority |
| | | V | Case studies: Heat waves of AP & Orissa, Cold waves in UP |
| 3. | GE8077 Total Quality Management | I | Case study of customer retentions |
| | | II | Seven S |
| | | IV | Case study in Quality Function Deployment (QFD) |
| | | V | Risk Management & Assessment |

Note: The consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.

Design *[Signature]*
21/10/22

Manufacturing *[Signature]*
21/10/22

Thermal *[Signature]*
21/10/22

Management *[Signature]*
21/10/22

Domain Coordinator(s)

[Signature]
21/10/22

Department Academic Coordinator

[Signature]
21/10/22
HOD

[Signature]
21/10/22
Vice Principal



[Signature]
Principal 2022
PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 certified institution



Date: 01.02.2022

To
The Vice Chancellor
Anna University
Chennai - 600 025.

Respected Sir,

Sub: Requesting to clarify the updates in the lab requirements of GE3271-
Engineering Practices Laboratory in Regulation 2021 - Reg.

We wish to inform you that, we have noticed the lab requirements of GE3271-
Engineering Practices Laboratory in Regulation 2021, have been changed abruptly. There are
significant differential hikes in the number of equipment between the current regulation
R-2021 and the previous regulation R-2017. For instance, in R-2017, two lathe machines are
required, while in R-2021, fifteen are required. Other equipment, such as Arc welding,
Drilling machine, Die holder with die set, Pipe vice, and so on, are also abundant in R2021.


We would like to inform you that, the batch format is followed while handling this
laboratory course based on the guidelines of Anna University. There are three batches of
students working at a time in each sector namely Plumbing, Welding, Carpentry, and
Machining sections. Furthermore, this revised list of requirements for this lab which are
given in R- 2021 is too high to handle the course. If we fulfil the lab requirement of R-2021,
accommodating all the equipment in the existing lab is very difficult and It will create
inconveniences to the students while working in the lab. So we believe that the previous
regulation's lab requirement is sufficient for handling this course. That was working fine for
all the previous batches of students.

As a result, we respectfully request that you to consider our representations and to
retain the requirements which was given in previous regulation R-2017 for GE3271-
Engineering Practices Laboratory. It will be helpful to meet the affiliation requirements for
the forthcoming academic years.

Kindly we request you to take necessary actions in this regard.

Thanking you


HOD/Mech.


Vice Principal


Principal

Encl: Comparative Statement of Lab Requirements between R-2017 & R-2021

Copy to:

- The Registrar, Anna University, Chennai
- The Director, Centre for Affiliation, Anna University, Chennai
- The Chairman, Board of Studies, Faculty of Mechanical Engineering, Anna University, Chennai

PRINCIPAL
Ramco Institute of Technology
Rajapalayam - 626 117.

North Vengimallur - Ayyanarkovil Road, Rajapalayam - 626 117
Vandhavur District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@nitjpm.ac.in Web : www.nitjpm.ac.in



Comparative Statement of Lab Requirements between R-2017 & R-2021 , Anna University, Chennai

| GE6261 & GE3271 Engineering Practices Laboratory – Civil Engineering and Mechanical Engineering | | | | |
|---|------------------------------|--|---------|-------------|
| Sl. No. | Description of Equipment | Required Numbers (forbatch of 30 students) | | |
| | | R-2017 | R-2021 | Differences |
| Part I: Civil Engineering Practices | | | | |
| 1) | Pipe Vice | Assorted components for plumbing Consisting of metallic pipes, plastic pipes, flexible pipes, couplings, unions, elbows, plugs and other fittings. 15 Nos. | 15 Nos. | - |
| 2) | Die Holder with Die set | | 15 Nos. | - |
| (b) | Wood Work | | | |
| 1) | Tri Square | 15 Nos. | 15 Nos. | NIL |
| 2) | Hand Saw | 15 Nos. | 30 Nos. | 15 Nos. |
| 3) | Carpentry bench wise | 15 Nos. | 15 Nos. | NIL |
| 4) | Firmer Chisel | 15 Nos. | 30 Nos. | 15 Nos. |
| 5) | Motrn Chisel | 15 Nos. | 30 Nos. | 15 Nos. |
| 6) | Iron Jack | 15 Nos. | 30 Nos. | 15 Nos. |
| 7) | Mallet | 15 Nos. | 30 Nos. | 15 Nos. |
| 8) | Bench hold fastens | 15 Nos. | 30 Nos. | 15 Nos. |
| 9) | Wooden Bench Hook | 15 Nos. | 30 Nos. | 15 Nos. |
| 10) | Wood Cutting Machine | 02 Nos. | 2 Nos. | NIL |
| Part III: Mechanical Engineering Practices | | | | |
| (a) | Welding Work: | | | |
| 1) | Arc welding unit | 05 Nos. | 15 Nos. | 10 Nos. |
| 2) | Gas welding unit | 02 Nos. | 2 Nos. | NIL |
| (b) | Basic Machining Work: | | | |
| 1) | Lathe Machines | 02 Nos. | 15 Nos. | 13 Nos. |
| 2) | Drilling Machines | Hand drilling machines 02 Nos. | 10 Nos. | 08 Nos. |
| (c) | Assembly Work: | | | |
| 1) | Centrifugal pump | 01 Nos. | 2 Nos. | 01 No. |
| 2) | Air-conditioner unit | 01 Nos. | 2 Nos. | 01 No. |
| 3) | Household mixer | - | 2 Nos. | - |
| (d) | Sheet Metal Work: | | | |
| 1) | Bending Machine | - | 2 Nos. | - |
| 2) | Shear cutter | 15 Nos. | 15 Nos. | NIL |
| 3) | Mallet | 15 Nos. | 15 Nos. | NIL |
| (e) | Foundry Work | | | |
| 1) | Cope and Drag Box | 02 Nos. | 15 Nos. | 13 Nos. |
| 2) | Pattern | 02 Nos. | 15 Nos. | 13 Nos. |
| 3) | Solid pattern | 02 Nos. | 15 Nos. | 13 Nos. |
| 4) | Split pattern | 02 Nos. | 15 Nos. | 13 Nos. |
| 5) | Runner | 02 Nos. | 15 Nos. | 13 Nos. |
| 6) | Riser | 02 Nos. | 15 Nos. | 13 Nos. |
| 7) | Sprue | 02 Nos. | 15 Nos. | 13 Nos. |
| 8) | Sand reamer | 02 Nos. | 15 Nos. | 13 Nos. |
| 9) | Trowel | 02 Nos. | 15 Nos. | 13 Nos. |





CENTRE for AFFILIATION of INSTITUTIONS
ANNA UNIVERSITY, CHENNAI-600025

Prof. Dr.A.ELAYAPERUMAL
DIRECTOR

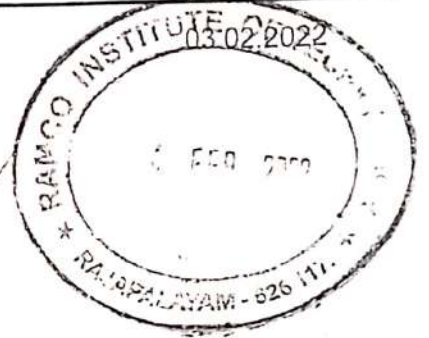
Phone : 044 - 2235 7100
Fax : 044 - 2230 0916
Email : directorcai@annauniv.edu

Lr.No.685 / CAI / AU / 2022

To

The Director,
Centre for Academic Courses,
Anna University,
Chennai- 600 025.

P.M.E
02/4/22



Sir,

Sub: AU- CAI - Clarification on laboratory requirement for the GE3271 –
Engineering Practices Laboratory -Reg.
Ref: RAMCO Institute of Technology Lr. dated:01.02.2022

Your attention is invited to the reference cited (1). You are requested to offer your remarks proposed by RAMCO Institute of Technology for GE3271 – Engineering Practices Laboratory on the reduced requirement as given in previous regulation R2017.

The matter may kindly be treated as MOST URGENT and request to send your reply immediately.

Encl: Ref.(1)

Copy to: ✓ The Principal ,
RAMCO Institute of Technology,
North Venganallur Village,
Krishnapuram Panchayat,
Rajapalayam, Virudhunagar-626117.

for information

[Handwritten Signature]
DIRECTOR
DIRECTOR

Centre for Affiliation of Institutions
Anna University, Chennai-600 025.



RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 certified institution



27.07.2021

To
The Director
Centre for Academic Courses
Anna University
Chennai

Respected Sir,

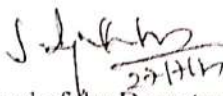
Sub: Representation of Curriculum Gap in the existing curriculum R-2017 of Mechanical Engineering- Submission of suggestions to be included in curriculum content in the forthcoming R 2021 of Mechanical Engineering- reg.

We wish to submit the following reports on the curricular gap analysis and identification carried out by the department of Mechanical Engineering for consideration and inclusion in the forthcoming AU R-2021 curriculum and syllabus of Mechanical Engineering.

1. Consolidated Report of Curriculum Gap Analysis and Identification for **Manufacturing Engineering** and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.
2. Consolidated Report of Curriculum Gap Analysis and Identification for **Design Engineering** and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.
3. Consolidated Report of Curriculum Gap Analysis and Identification for **Thermal Engineering** and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021.

We kindly request you to consider our suggestions while framing the regulation of AU R-2021 curriculum and syllabus of Mechanical Engineering.

Thanking you,


Head of the Department


Vice-Principal


Principal



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Ramco Institute of Technology
Rajapalayam - 626 117.

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 0456 221100
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RAMCO INSTITUTE OF TECHNOLOGY
Department of Mechanical Engineering

27.07-2021

Consolidated Report of Curriculum Gap Analysis and Identification for Manufacturing Engineering and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Mechanical Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Mechanical Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

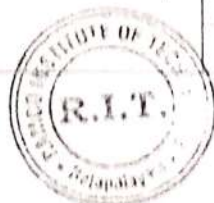
The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Manufacturing Engineering** are given below:

| | |
|---------------------|---|
| Faculty members | Prof.S.Rajakarunakaran, Dr.P.SureshKumar, Dr.S.Godwin Barnabas, Mr.M.Lakshmanan, Mr.M.Santhana Maruthu Pandian, Mr.M.Ramar, Mr.S. Kathiravan, Mr.P.Pavithran |
| Student Members | Mr.N.Thiruvisan (953617114101), Mr.V.R.Aswin (953617114012), Mr.K.Chandru (953618114017), Mr.S.Santhosh (953618114059) and Mr.M.Thojesh Nandha (953618114076) |
| Faculty Coordinator | Mr.S.Maharajan, AP/Mech |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of **Manufacturing Engineering**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning.

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|--------------------------------------|------|--|
| 1 | ME8351 Manufacturing Technology I | I | Squeeze Casting, Calculation of Solidification time, Solidification and microstructural analysis in casting, Gating Design |
| | | III | Foam Technology for light weight Structural material, Equal Channel Angular Extrusion process |
| | | IV | Incremental Forming Processes |
| | | V | 3D printing |



| | | References may be added | J.P.Kaushish, "Manufacturing process" PHI Learning Private Limited, New Delhi, 2020 |
|-----|--|-------------------------|---|
| 2 | ME8451 Manufacturing Technology II | III | Planer machine, Work / Tool holding device for heavy machinery. |
| | | V | DNC machine function, Comparison of CNC and DNC |
| 3 | ME8491 Engineering Metallurgy | II | Influence of different Quenching media on Microstructure |
| | | III | Different Strengthening Mechanism on Metals |
| | | V | ASTM Standard testing procedure for mechanical testing. |
| 4. | ME8501 Metrology and Measurements | III | Advanced probe sensor used in CMM |
| | | IV | Measurement statistics in roughness measurement. |
| 5. | ME8073 Unconventional Machining Process | II | Micro machining operations in Micro EDM. |
| | | V | Laser materials processing. |
| 6. | PR8592 Welding Technology | I | Modified waveform GMAW processes, Tandem MIG & TIG, Orbital GTAW & GMAW, Interpulse GTAW, VPPAW, WAAM |
| | | II | MFDC process |
| | | III | MIAB welding, Magnetic Pulse Welding |
| | | IV | LASER hybrid Welding, Overlay, surfacing and cladding |
| | | V | Weldability of Magnesium, Titanium, Metal Matrix Composites, Weldability tests, Distortion and its control, Fatigue and Fracture Toughness Tests, Simulation and Modelling. |
| 7. | IE8693 Production Planning and Control | I | Case studies - New product development |
| | | IV | Various priority rules in production scheduling |
| | | V | Inputs and Outputs - ERP |
| 8. | GE8077 Total Quality Management | I | Case study of customer retentions |
| | | II | Seven S |
| | | IV | Case study in Quality Function Deployment (QFD) |
| | | V | Risk Management & Assessment |
| 9. | ME8094 Computer Integrated Manufacturing Systems | I | CAE concepts |
| | | II | Case of study in ERP |
| | | III | D Class in part classification & Coding |
| | | V | Industry 4.0 |
| 10. | GE8071 Disaster Management | II | Case Study in Panchayati Raj Institutions, Evacuation (Exit Safe Concept) |



| | | | |
|-----|---|-----|--|
| | | V | Case study in Pandemics and endemics (COVID 19) |
| 11. | MF8071 Additive Manufacturing | II | Reverse Engineering, CAD |
| | | III | Slicing of 3D model |
| 12. | ME8097 Non Destructive Testing and Evaluation | I | Classification of indications for acceptance criteria – codes standards and specifications (ASME,ASTM,AWS,etc) |
| | | II | selection of penetrant method – solvent removable, water washable, post emulsifiable, applicable codes and standard magnetic hysteresis, Selecting the method of magnetization, applicable codes and standards |
| | | IV | Basic instrument calibration – calibration blocks, Testing/Evaluation/interpretation, Test Procedure, Applicable codes and standards, specifications (ASME, ASTM, AWS, BS. etc.) |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.

(Signature)
27/11/21
Domain Coordinator

(Signature)
27/11/21
HOD/Mech

(Signature)
27/11/21
Vice Principal

(Signature)
27/11/21
Principal

PRINCIPAL
Ramco Institute of Technology
Rajapalayam



RAMCO INSTITUTE OF TECHNOLOGY
Department of Mechanical Engineering

27.07.2021

Consolidated Report of Curriculum Gap Analysis and Identification for Design Engineering and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

The academic administrative bodies of Ramco Institute of Technology's Mechanical Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Mechanical Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) Inputs from faculty members with specific competency/domain knowledge; ii) Student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Design Engineering** are given below:


| | |
|---------------------|---|
| Faculty members | Mr.J.Jerold John Britto, Mr.C.Gururaj, Mr.G.Prabu Ram, Mr.S.Valai Ganesh, Mr.J.Jabinth, Mr.L.Karthikeyan, Mr.R.Venkatesh, Mr.R.Prabhakaran, Mr.T.Selva Sundar |
| Student Members | Mr.N.Siranjeevi(953617114087), Mr.S.Balaji(953617114013), Mr.N.Gokul Prasath(953617114025), |
| Faculty Coordinator | Mr.J.Jerold John Britto, AP(SG)/Mech |

The identified curricular gaps are given below: a. Inadequate content in the syllabus/curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of **Design Engineering**.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning.

| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap |
|---------|----------------------|------|--|
| 1 | ME8099 - Robotics | I | Laws of Robotics. Different types of robots (Wheeled, legged, Work envelope-based system) |
| 2 | ME8791- Mechatronics | I | Exploring sensors using magnetic sensors, vibration/shock sensors, pulsed infrared sensors, motion sensors, Magnetic circuit principles and the application of these principles to basic transformers. |
| | | IV | Study of PLC Applications |
| | | V | Industrial Stepper and Servo motor study with application |

3
27/21



| Sl. No. | Course code & Title | Unit | Topic suggested for inclusion in the existing curriculum to bridge the Curriculum gap - |
|---------|-------------------------------------|------|---|
| 3 | ME8694 - Hydraulics and Pneumatics | III | Heat Generation in Hydraulic System |
| | | IV | Logic circuit Design with Karnaugh-Veitch Mapping Method |
| | | V | Modular Production system |
| 4 | ME8692-Finite Element Analysis | I | Theory of FEM and CAE |
| | | II | 1D Geometry Creation, Editing and Meshing |
| | | III | 2D Geometry Creation, Editing and Meshing |
| | | IV | 3D Geometry Creation, Editing and Meshing |
| | | V | Static analysis, modal analysis, thermal analysis, non-linear analysis, frequency response analysis |
| 5 | ME8593 - Design of Machine Elements | I | Fatigue failure theories. Curved beams – crane hook and ‘C’ frame may be removed. |
| | | II | Design based on combined torsion-Bending and axial loads |
| | | III | Boilers joints |
| | | IV | Engine components design can be included in separate course like design of transmission system |
| 6 | ME8594 - Dynamics of Machines | III | Logarithmic Decrement |
| | | IV | Steady state vibration - Magnification factor |

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.

R.raj
27/10/21
Domain Coordinator

S. J. S. S.
27/10/21
HOD/Mech

B.
27/10/21
Vice Principal

S. J. S. S.
27/10/21
Principal

PRINCIPAL
Ramesh Institute of Technology
Rajapalayam - 626 117.



RAMCO INSTITUTE OF TECHNOLOGY
Department of Mechanical Engineering

Consolidated Report of Curriculum Gap Analysis and Identification for Thermal Engineering and Related Streams of the AU R-2017 Mechanical Engineering Curriculum and Suggestions to Fill the Curricular Gaps in the Forthcoming AU R-2021

Date: 27.07.2021

The academic administrative bodies of Ramco Institute of Technology's Mechanical Engineering department, namely the Program Assessment and Quality Improvement Committee (PA&QIC) and Department Advisory Committee (DAC), analyze and identify curricular gaps on a regular basis, taking into account current industry needs, programme outcomes, programme specific outcomes, and skill sets required for the future. We wish to present the identified gap to the University Board of Studies (BoS) through the Centre for Academic Courses for consideration in revising the existing Anna University 2017 Mechanical Engineering Curriculum & Syllabus.

Curricular gaps are identified with the help the following i) inputs from faculty members with specific competency/domain knowledge; ii) student feedback; iii) Employer feedback; iv) Alumni feedback; v) Discussion with Industry/Professional Society Experts and vi) Suggestions from Academic peer groups.

The details of the faculty members and students who coordinated the process of identifying the curricular gap in various courses in the domain of **Thermal Engineering** are given below:

| | |
|---------------------|---|
| Faculty members | Dr.V.Sivakumar, Mr.M.Sivagaminathan alias Balaji, Mr.R.Arjun Kumar, Mr.N.L.Sujin |
| Student Members | Mr.N.Siranjeevi (953617114087), Mr.N.Sankara Chelliah (953617114078), Mr.G.Karan Kumar (953617114033) |
| Faculty Coordinator | Mr.M.Ashok Kumar, AP (SG) / Mechanical Engineering |

The identified curricular gaps are given below: a. Inadequate content in the syllabus curriculum to meet industry needs/expectations; and b. Lack of exposure to the latest technological developments in the courses which are related to the domain of Thermal Engineering.

In order to address the above gaps in curriculum, the following measures have been proposed in terms of modification/revision of existing curriculum by i) addition/inclusion of topics suggested in existing units; ii) introduction of advanced topics in various courses; iii) introduction of new reference books for learning; (iv) Introduction to new course and (v) Revision / alternation in laboratory course

| Sl. No. | Course code & Title | Unit | Topic suggested for the Curriculum gap |
|---------|--|------|---|
| 1 | MES391 Engineering Thermodynamic | I | History of Thermodynamics, Perpetual Motion Machine of first kind |
| | | II | Perpetual Motion Machine of second kind, III law of Thermodynamics |
| 2 | MES493 Thermal Engineering - I | I | Introduction to Kalina cycle (Only description) |
| | | III | Working principle of a simple carburetor, compensating devices, types of carburetor |
| | | IV | Emission formation and its control in IC engines. |

Reference may be added:

Mahesh M Rathore "Thermal Engineering", 1st edition, Tata McGraw-Hill Publishers, New Delhi, 2010



| | | | |
|---|---|--|--|
| 3 | ME8595 Thermal Engineering – II | II | FBC boiler and pulverized boiler, HRSG (Heat Recovery steam generators) |
| | | III | Turbine Heat rate, Effects of operating Parameter in Turbine performance |
| | | IV | Effectiveness of heat exchangers. Condenser vacuum efficiency |
| | | V | Effectiveness of Cooling tower |
| Reference may be added: Rajput. R. K., "Thermal Engineering" S.Chand Publishers, 2017 | | | |
| 4 | ME8693 Heat and Mass Transfer | I | Introduction to Numerical Method in heat transfer, Critical radius of insulation and thickness |
| | | II | Flow through Bank of tubes |
| Reference may be added: Mahesh M Rathore "Engineering Heat and Mass Transfer", 3 rd edition, University Science Press (An imprint of Laxmi Publications Pvt. Ltd.), Chennai, 2015. | | | |
| 5 | ME8091 Automobile Engineering | I | Vehicle safety and its rating |
| | | IV | Wheel and Tyre |
| | | V | Advancement in e-mobility vehicle, Introduction to Autonomous vehicle. |
| 6 | ME8792 Power Plant Engineering | I | Coal combustion, Introduction to quality circle |
| | | II | Gas combustion |
| | | V | Energy audit |
| Reference may be added: R K Rajput "A Text book of Power Plant Engineering", 5 th edition, Laxmi Publications Pvt. Ltd., New Delhi, 2016. | | | |
| 7 | ME8071 Refrigeration and Air conditioning | II | Variable refrigerant flow compressor Refrigeration system and its advantages |
| | | III | Brine Chiller – needs and applications, Thermal storage in part load condition. |
| | | V | Difference between DX and Chilled Water Coil, Load Diversity |
| 8 | Introduction to New course | Energy Conservation and Management In regulation 2013, Mechanical Engineering students had an opportunity to study the course ME6009 Energy Conservation and Management , which was helpful for them to have an additional career opportunity as " Energy Manager " and " Energy Auditor ". The syllabus framed in the above said course included the content to be prepared for Energy Manager and Energy Auditor exam conducted by Bureau of Energy Efficiency, Government of India. In addition to the above opportunity, the knowledge gained by the graduates who took this course as professional elective found the course to be helpful for them in their industrial career. | |



| | | |
|---|---|--|
| 9 | Revision / alternation in laboratory course | <p>(i) Thermal Engineering Laboratory – may be offered in 6th semester instead of 5th Semester</p> <p>In the 2017 regulations, the ME8512 Thermal Engineering Laboratory course, which includes experiments related to the courses Thermal Engineering I, Thermal Engineering II, and Heat and Mass Transfer, is taught in the fifth semester, but the students were studying ME8693 Heat and Mass Transfer in the sixth semester. According to the feedback obtained from students, they faced difficulties to understand the experiments connected to heat and mass transfer subject.</p> <p>(ii) Thermal Engineering Laboratory – may be offered as two courses Thermal Engineering Laboratory – I and Thermal Engineering – II instead of one laboratory course.</p> <p>In 2013 regulation the experiments related to thermal domain have been conducted in two offered courses Thermal Engineering Laboratory – I and Thermal Engineering Laboratory – II. Since all the experiments related to thermal domain were conducted in one course ME8512 Thermal Engineering Laboratory as per the regulation 2017, the faculty members and students were faced difficulties to complete the experiment in the prescribed duration.</p> |
|---|---|--|

Note: Certified that the consideration of above suggestions to address curricular gap will not increase in the total number of periods for the respective courses.

[Signature]
27/7/21
Domain Coordinator

[Signature]
27/7/21
HOD/Mech.

[Signature]
27/7/21
Vice Principal

[Signature]
27/7/21
Principal

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Rajapalayam - 626 117.

