



Course Design Review Action Taken Report of the University on the Feedback of Stakeholders

Mechanical Engineering_UG Program

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Action Taken Report Approved in Board of Studies dated 15.04.2017 and implemented with effect from Aug 2018

| 1 Observations/ Recommendations based on feedback | | POs impacted |
|---|-----------------------------|-------------------|
| Employers Feedback: ✓ Teachers Feedback (Pre-BoS MoM): ✓ • There was no adequate time available for the product development, post the dei • Emphasis on Geometrical dimensioning and tolerance, Materials & PCB design was | as relatively less. | |
| Little exposure of students to complex engineering problems and analysis in discussions. There is no Emphasis on scheduling and resource allocation. The lesson plan needs improvement – the treatment to each topic with the tools/for delivery. | | 2 |
| Actions taken | Course Revised/ Added | BoS approved Date |
| The course was restructured, thus students got enough time for interactions | | |
| | | |
| with users, experts and manufacturers while working on the design phase of product development cycle – identify, formulate and solve and also realize the product. | For all and a second second | 45.04.0045 |
| | Engineering Design | 15.04.2017 |

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The rubrics were used for assessment of students for having attained the competence in these design skills.

Number of credits for the Instrumentation & Control Engineering Lab alone is

enhanced to 2 credits to increase time for hands on exposure.

Case studies were introduced in instrumentation & control engineering.

| 2 | Observations/ Red | commendations based on feedback | | POs impacted |
|-------------------------|-------------------------------|--|-------------------|--------------|
| Employers F | eedback: ✓ | | | 2 |
| Teachers Fe | edback (Pre-BoS MoM) | . ✓ | | |
| Students Fe | edback: ✓ | | | |
| Alumni Feed | dback: ✓ | | | |
| • The c | concept of stability has to b | pe taught with explicit mention of the same in the | syllabus | |
| Hand | s-on experience has to be | more for better understanding of the concepts. | | |
| • No er | mphasis on case studies. | | | |
| Actions tal | ken | | Course | BoS approved |
| | | | Revised/ Added | Date |
| A cha | pter on system stability is | introduced. | | |
| • The I | ab on control engineerin | g is separated from erstwhile Mechatronics & | | |
| Contr | ol Engineering lab and na | amed as Instrumentation & Control Engineering | | |
| Lab. | | | Instrumentation & | 15 04 2017 |
| | | | Control Enga | 15.04.2017 |

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Control Engg



 Contexts for acquiring inter-disciplinary knowledge and skills were created in courses – Instrumentation & Control Engineering.

| Observations/ Recommendations based on feedback | | | POs in | npacted |
|---|--------|--------------------|-------------|----------|
| Employers Feedback: ✓ Students Feedback: ✓ | | | | |
| Alumni Feedback: ✓ | | | | 4 |
| Limited exposure to open-ended real-life problems. | | | | |
| Lack of exposure to tools, interfacing concepts and Hands-on experience. | | | | |
| | | | | |
| Need for more emphasis on interdisciplinary knowledge. | | | | |
| Need for more emphasis on interdisciplinary knowledge. Actions taken | | Course | BoS | approved |
| Actions taken | | Course d/ Added | BoS Date | approved |
| | | | | approved |
| Actions taken • Course project in Mechatronics provided a platform for students to engage with | | | | approved |
| Course project in Mechatronics provided a platform for students to engage with interfacing tools and techniques. | Revise | | Date | approved |
| Course project in Mechatronics provided a platform for students to engage with interfacing tools and techniques. The lab on Mechatronics is separated from erstwhile Mechatronics & Control | Revise | d/ Added | Date | |
| Course project in Mechatronics provided a platform for students to engage with interfacing tools and techniques. The lab on Mechatronics is separated from erstwhile Mechatronics & Control Engineering lab and named as Mechatronics Lab. | Revise | d/ Added | Date | |

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| | Observations/ Recommendations based on feedback | | | POs impacted |
|--|---|----------------------------------|-----------------------|--------------|
| | eedback (Pre-BoS MoM): ✓ eedback: ✓ | | | |
| streDemTo cCuri | ited student appreciation to potential hardware and software tools for wangths and limitations. In and for skill upgradation to integrate hardware and software to develop create student awareness at higher semester level on engineer's role to reliciosity and appreciation among students towards high impact engineering the instances need to be created to address design and development of so | meaningful appessolve societal i | olications. ssues. | 3 and 5 |
| Actions ta | aken | | Course d/ Added | BoS approved |
| • Incre | eased emphasis on usage of modern tool by enhancing hands-on experie | | | |
| to s limit An a inter the e with begi | In due focus on selection and application of various techniques and resour solve the stated problem helped students understand the strengths tations of such tools. Approach of Design-Build-Control introduced helped students understand gration challenges (Hardware and software) of both – interrelated steps different technologies in realizing product as a system and was implement comprehensive assessment strategy which was shared with students in inning of the course. Tessed students to create awareness on engineer's role to identify and second control of the course. | the and the the | or Project | 15.04.2017 |

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Action Taken Report Approved in Board of Studies dated 13-04-2019 and implemented with effect from Aug 2019

| | Observations/ Recommendations based on feedback | | POs impacted |
|----------------|---|------|--------------|
| Employers Feed | dback: ✓ | | 2 |
| Teachers Feedb | oack (Pre-BoS MoM): ✓ | | |
| Alumni Feedba | ck: ✓ | | |
| industry. | ent was not sufficient for students to excel the knowledge to mindustries such as Ansys Inc India, Bosch, KPIT Cummins and Dassault | | |
| | e latest best practices and tools pertaining to Finite element analysi osure on the current field issues related to engineering domain. | 1.50 | |
| | e latest best practices and tools pertaining to Finite element analysi osure on the current field issues related to engineering domain. | 1.50 | |
| Minimal expo | e latest best practices and tools pertaining to Finite element analysi osure on the current field issues related to engineering domain. | S. | |

| 2 | Observations/ Recommendations based on feedback | | POs impacted |
|----------|--|-----------|--------------|
| Employer | rs Feedback: ✓ | | |
| Teachers | Feedback (Pre-BoS MoM): ✓ | Paul | PSO 13 |
| • Course | content not adequate to offer immersive experience in modelling. | U CONTRAD | |
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- Limited exercises to strongly demonstrate power of modelling in the final solution/product development.
- Lack of ability to develop industry standard drawings, incorporating GD&T attributes and other drawing conventions.

| Actions taken | Course | BoS approved |
|--|----------------|--------------|
| | Revised/ Added | Date |
| The course CAD Modelling and PLM introduced with 15hr/week hands-on immersive training experience, with a focus on Exposure to system building from components/sub-systems. Emphasis on 2D, 3D drafting, generation of BOM, GD&T, exploded view and rendering features. Included Product development and Reverse Engineering through virtual Projects. | | 13-04-2019 |

| 3 Observations/ Recommendat | tions based on feedback | | POs im | pacted |
|---|--------------------------------------|---------------------------------------|--------|----------|
| Employers Feedback: ✓ | | | PO2 | |
| Teachers Feedback (Pre-BoS MoM): ✓ | | | | |
| Alumni Feedback: ✓ | | | | |
| Instrumentation and control systems sullevel. | bject had too much of content to be | delivered at 3 rd semester | | |
| Industry experts and academicians from course on control systems for better foc | | ggested to have exclusive | | 8 |
| Instrumentation content was mostly rep | peated partially in Mechatronics and | Automation courses. | | |
| Actions taken | (i) | Course | BoS | approved |
| | (Po | Revised/ Added | Date | |
| Employers Feedback: ✓ | REGISTRAR | Control Systems | 13-04 | -2019 |
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| Teachers Feedback (Pre-BoS MoM): ✓ |
|--|
| Instrumentation content was separated from control systems course to focus better. |
| Instrumentation content was accommodated under a new course Mechatronics as most of the instrumentation building blocks changed from mechanical instrumentation to electronics instrumentation. Also this change was linked to Industrial revolutions. |

| 4 Observation | s/ Recommendations based on feedback | | | POs im | pacted |
|---|--|-------------|--------------------|-------------|----------|
| respective theory cours Industry experts and ac | ademicians from Institutes of Higher level learning ms Lab and adopt recent industry practices and few | suggested l | having exclusive | PO2 | |
| Actions taken | | | Course d/ Added | BoS Date | approved |
| Teachers Feedback (Pre-BoS N | 1oM): ✓ | | ol Systems Lab | 13-04- | -2019 |
| Students Feedback: ✓ | | | | | |
| experiential learning | uiry experiments are included for enhanced | | 0 9 | | 8 |
| Emphasis on physical m current practices. | odeling was brought in help students reach industry | , | (follow | | |

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| 5 | Observations/ Recommendations based on feedback | | POs impacted |
|--------------------------------|---|----------------|--------------|
| Employers F | Feedback: ✓ | | PO2 |
| Teachers Fe | edback (Pre-BoS MoM): ✓ | | |
| • Students | to work on more complex problems | | |
| Encourag | e students to publish their work in conferencecs | | |
| Actions ta | ken | Course | BoS approved |
| | | Revised/ Added | Date |
| Complex | problems are introduced | FEM | 13-04-2019 |
| Student te | eams are motivated to publish their findings in conferences | | |

| 6 | Observations/ Recommendations based on feedback | POs impacted |
|----------------------------------|--|---------------------|
| Analy diffic | | tions and PDE is |
| - LIIIIIC | ted exposure on tools for solving engineering problems | |
| Actions tal | ken | Course BoS approved |

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Action Taken Report Approved in Board of Studies dated 19-06-2020 and implemented with effect from Aug 2020

| 1 | Observations/ Recommendations based on feedback | | | POs im | pacted |
|----------|---|--------|-------------------------|--------|----------|
| Teachers | Feedback (Pre-BoS MoM): ✓ | | | | PO1 |
| Alumni F | eedback: ✓ | | | | |
| • Th | ne content is too much to handle in 26 Hrs. | | | | |
| • St | rengthen the emphasis on IC Engine performance measurement. | | | | |
| | | | | | |
| Actions | taken | | Course | BoS | approved |
| | | | Revised/ Added | Date | |
| | ne content is restructured to increase the emphasis on IC erformance measurement. | Engine | IC Engines 19EMEC401 | | |
| | | | | | |

| 2 | Observations/ Recommendations based on feedback | | | POs im | pacted |
|---------|--|------|--------------------------|-------------|----------|
| | Feedback (Pre-BoS MoM): ✓ udents are expected to learn on condensers | | | | PO1 |
| Actions | taken | | Course d/ Added | BoS Date | approved |
| • Cc | ntent on condensers is introduced | Desi | gn of Thermal Systems | 19-06- | -2020 |

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| 3 | Observations/ Recommendations based on feedback | | | POs im | pacted |
|-------------|--|--------|-------------|--------|----------|
| Employers F | eedback: ✓ | | | | PO5 |
| | edback (Pre-BoS MoM): ✓ duce a tool being currently used in industry extensively | | | | |
| Actions tal | | | Course | BoS | approved |
| ACTIONS (a) | Ken | Revise | ed/ Added | Date | арргочец |
| | CAD REVIT is introduced to help students acquire proficiency in the eling and estimation tasks | H | VAC Systems | 19-06 | -2020 |

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Course Design Review Action Taken Report of the University on the Feedback of Stakeholders

Machine Design_PG Program

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Action Taken Report Approved in Board of Studies dated 09-04-2016 and implemented with effect from 2016-2017

| Observations/ Recommendations based on feedback | POs impacted | |
|---|---------------------------------------|--------------|
| Teachers Feedback (Pre-BoS MoM): √ | PO2 | |
| Modern machinery which operate under higher operating speeds with combination needs to be studied. | | |
| Existing content needs to be modified to excel the knowledge to r | meet the expectations of | |
| industry. | | |
| Actions taken | Course | BoS approved |
| | Revised/ Added | Date |
| The course contents are modified by brining nonlinear vibrations and continuous systems. | Theory of Vibrations with Application | 09-04-2016 |
| As part of bridge course review of mechanical vibrations is introduced as 1 st chapter. | S | |

| Observations/ Recommendations based on feedback | POs impacted | | |
|--|--------------------------|-------------------|--|
| Feachers Feedback (Pre-BoS MoM): √ Condition monitoring based inspections are finding wider applications in ma hence needs to be included in lab content. | PO5 | | |
| Theoretical contents of condition monitor is minimum in the course Advance | ed vibrations. | | |
| | | | |
| Actions taken | Course | BoS approved | |
| Actions taken | Course Revised/ Added | BoS approved Date | |
| Actions taken > Spindle bearing health monitoring is to be performed using monitoring | | | |

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included.



Real time collision detection is planned to avoid operating condition related tool collision using hardware and software integration.

| Observations/ Recommendations based on feedback | | POs impacted |
|--|--------------------------|--------------|
| Teachers Feedback (Pre-BoS MoM): √ | | PO3 |
| Minimal exposure on the power calculations related to machining operation The contents on basic spindle bearing parameter study and statistical quality | | |
| | | |
| Actions taken | Course Revised/ Added | BoS approved |
| Actions taken > Power and force estimation for turning and drilling are introduced. | | |
| | Revised/ Added | Date |

> Spindle bearing calculations using catalogues and design data sheets are

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| Observations/ Recommendations based on feedback | | POs impacted |
|--|-------------------------------------|-------------------|
| Teachers Feedback (Pre-BoS MoM): $$ | 1 | PO5 and PO6 |
| Validation of the FE Analysis is missing. | | |
| Analysis log file report needs to be submitted in the prescribed format. | | |
| | | |
| Actions taken | Course | BoS approved |
| Actions taken | Course Revised/ Added | BoS approved Date |
| Actions taken The FE results on few of the components are to be validated using available | | |
| | Revised/ Added | Date |
| The FE results on few of the components are to be validated using available | Revised/ Added Modeling and Finite | Date |

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Action Taken Report Approved in Board of Studies dated 15-04-2017 and implemented with effect from 2017-2018

| Obser | vations/ Recommendations based on feedback | | POs impacted | |
|--|---|--------------------------|-------------------|--|
| Teachers Feedback (Pre-BoS MoM): √ No contents on analysis related to transient state and steady state moving crack problems and computations of dynamic stress intensity and energy relate rate. | | | PO1 | |
| Actio | ns taken | Course Revised/ Added | BoS approved Date | |
| > | A separate module on Dynamic and Time-Dependent Fracture is introduced in place of non-destructive testing. | Fracture Mechanics | 15-04-2017 | |
| > | Related to materials and structures non-destructive testing is studied elsewhere. | | | |

| Observations/ Recommendations based on feedback | POs impacted |
|--|--------------|
| Teachers Feedback (Pre-BoS MoM): √ | |
| The contents needs to be changed keeping in view of writing thesis and proposals, as it will help students in future. | |
| > The present course content was studied as different module instead of integration. | |

| Actions taken | Course | BoS approved |
|--|----------------------|--------------|
| | Revised/ Added | Date |
| Course structure is revamped keeping in view of research writings. | Research Methodology | 15-04-2017 |
| Case studies are brought to enhance the integrated research learnings. | | |

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| Observations/ Recommendations based on feedback | | POs impacted |
|--|--------------------------|-------------------|
| Teachers Feedback (Pre-BoS MoM): √ | PO1 | |
| > Study on advanced materials like composite and functionally graded materials | ials is essential. | |
| Actions taken | Course Revised/ Added | BoS approved Date |
| A separate module on advanced materials with macro mechanics of lamina | Mechanical Behavior of | |

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Action Taken Report Approved in Board of Studies dated 13-04-2019 and implemented with effect from 2019-2020

| Observations/ Recommendations based on feedback | | POs impacted | |
|--|--------------------------|-------------------|--|
| Teachers Feedback (Pre-BoS MoM): √ | | PO3 | |
| Lack of study on thermo elastic stress–strain relations, which is essential in Existing content on plasticity is to be relooked. | most of the industry. | | |
| Actions taken | Course Revised/ Added | BoS approved Date | |
| Thermal stress module is introduced with focus on thermo elastic stress- strain relations of thin circular disk, long circular cylinder, and straight beams. | Mechanics of Solids | 13-04-2019 | |
| The contents of plasticity are revised. | | | |

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Course Design Review Action Taken Report of the University on the Feedback of Stakeholders

Production Management_PG Program

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HUBBALLI-580 011





Action Taken Report Approved in Board of Studies dated 13-04-2019 and implemented with effect from 2019-2020

| Observations/ Recommendations based on feedback | | POs impacted |
|--|---------------------------------|-------------------|
| Teachers Feedback (Pre-BoS MoM): √ | | PO4 and PO9 |
| 1. The contents needs to be changed keeping in view of writing thesis and proposin future. | osals, as it will help students | |
| 2. The present serves sentent was study down life. | 101201 | |
| 2. The present course content was studied as different module instead of integr | ration. | |
| Actions taken | Course | BoS approved |
| | | BoS approved Date |
| | Course | |

| Observations/ Recommendations based on feedback | | POs impacted | |
|---|-----------------------------|------------------|--|
| Teachers Feedback (Pre-BoS MoM): V | | P01, PO2 and PO5 | |
| It was proposed to offer a Mini Project to facilitate better student employability in BOS m | neeting. | | |
| Actions taken | Course | BoS approved | |
| As an employment initiative for Production Management PG Program with focus | Revised/ Added | Date | |
| on PLM/ ERP, the Mini Project has been introduced in the Second Semester to | Mini Project (19EPMW701) | 13-04-2019 | |
| facilitate student employability in Manufacturing/Service Industry. | | | |

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Action Taken Report Approved in Board of Studies dated 09-04-2016 and implemented with effect from 2016-2017

| Observations/ Recommendations based on feedback | | POs impacted |
|--|---------------------|--------------|
| Teachers Feedback (Pre-BoS MoM): 🗸 | | PO4 |
| The existing theory content is not sufficient for the students to excel the knowled forming processes. Experts of high learning institute/industry have suggested to have exclusive "Analysis of Forming Processes" for better concept realisation. | | |
| Actions taken | Course | BoS approved |
| | Revised/ Added | Date |
| The content is restructured with the addition of tutorial component of 1 credit to | Analysis of Forming | 09-04-2016 |

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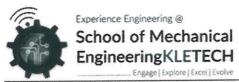


Action Taken Report Approved in Board of Studies dated 15-04-2017 and implemented with effect from 2017-2018

| Observations/ Recommendations based on feedback | | PO | s impacted |
|--|---|------|-------------|
| Employers Feedback: √ | | PO1, | PO2 and PO5 |
| Teachers Feedback (Pre-BoS MoM): √ | | | |
| The increasing growth and potential in the manufacturing industry, the aux expected to generate more opportunities for students in the areas of research at 2. In order to prepare the students, industry experts have suggested to offer "Manufacturing and Automation" Themes for the PG Program in Production Management with | and employment. Ianufacturing Technology | | |
| Actions taken | Course | BoS | |
| Actions taken | Professional Professional Control Control | | approved |
| Actions taken | Revised/ Added | Date | approved |

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Action Taken Report Approved in Board of Studies dated 07-04-2018 and implemented with effect from 2018-2019

| Observations/ Recommendations based on feedback | | POs | impacted |
|---|--|-------------|------------|
| Employers Feedback: V | | PO1, | , PO3, PO5 |
| Teachers Feedback (Pre-BoS MoM): √ | | | |
| Missing exposure to working in a collaborative environment, little hands-on traintegration of theory and laboratory courses were observed in the existing currie. Leading companies in the manufacturing industry have expanded their PLM and E in recent years to ensure increased coverage of these and stronger integration of entire value-added chain. The age of Industry 4.0 and the Internet of Things challenges such as the development of smart products, the planning of smart | culum. ERP methods and systems f the processes along the s (IOT) possess the new | | |
| and digital networking of processes and the designing of new business models, offers. Hence, PLM and ERP are the prerequisites for a smart factory.3. It has been suggested in BOS meeting, PLM and ERP are identified as the empresent Industry requirements. | | | |
| and digital networking of processes and the designing of new business models, offers. Hence, PLM and ERP are the prerequisites for a smart factory.3. It has been suggested in BOS meeting, PLM and ERP are identified as the em | | BoS | approved |
| and digital networking of processes and the designing of new business models, offers. Hence, PLM and ERP are the prerequisites for a smart factory. 3. It has been suggested in BOS meeting, PLM and ERP are identified as the empresent Industry requirements. | nerging areas to suit the | BoS Date | approved |

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Course Design Review Action Taken Report of the University on the Feedback of Stakeholders

Energy Systems Engineering_PG Program

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Action Taken Report Approved in Board of Studies dated 09-04-2016 and implemented with effect from 2016 odd sem

| Observations/ Recommendations based on feedback | | POs impacted |
|---|--|--------------|
| Employers Feedback: ✓ | | PO4 |
| Teachers Feedback (Pre-BoSMoM): ✓ | | |
| Students Feedback: ✓ | | |
| | | |
| The overall structure and curriculum of all four semesters reviewed and approved The PG Programme should imbibe research aptitude in students. There is a need course to give insights into various aspects to enable students to undertake guide | I to introduce a dedicated | |
| The PG Programme should imbibe research aptitude in students. There is a need | I to introduce a dedicated | BoS approved |
| The PG Programme should imbibe research aptitude in students. There is a need course to give insights into various aspects to enable students to undertake guide | I to introduce a dedicated d research independently. | |

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Action Taken Report Approved in Board of Studies dated 15.04.2017 and implemented with effect from 2017 odd sem

| Observations/ Recommendations based on feedback | | | POs im | pacted |
|---|-----------|--------|--------|----------|
| Employers Feedback: ✓ | | | PO3 ar | nd PO4 |
| Teachers Feedback (Pre-BoSMoM): ✓ | | | | |
| Students Feedback: ✓ | | | | |
| The growing demand of Sustainability principles and newer Renewable en Introduce concepts of Instrumentation and control for strengthening pro- More practical orientation through extended hours of learning through project | ect work. | | | |
| | | | | |
| Actions taken | | Course | BoS | approved |

| Actions taken | Course Revised/ Added | BoS approved Date |
|--|---|-----------------------------|
| Conventional Energy Conversion Systems (4-0-0) replaced by Sustainab Building Design (4-0-0), Experimental Methods in Energy Systems (4-0- replaced by Instrumentation and Control in Energy Systems (4-0-0) to brin | 0) Design (Added) | 15 th April 2017 |
| in the latest aspects of renewable energy sector. | 116 | |
| 2. New course Economics and Planning of Energy conversion introduced at 3 semester level to highlight the latest aspects of energy conversion. | Economics and Planning of Energy conversion (Added) | |
| The Theme based Mini-projects (0-0-3) introduced to strengthen practice Renewable Energy (Mini Project -1) and Energy conservation (Mini Proje -2) | | |

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Action Taken Report Approved in Board of Studies dated 07.04.2018 and implemented with effect from 2018 odd sem

| Observations/ Recommendations based on feed | ack POs impacted |
|--|---|
| Employers Feedback: √ | PO3 and PO4 |
| Teachers Feedback (Pre-BoSMoM): ✓ | |
| Students Feedback: ✓ | |
| The courses on Renewable Energy systems and I hands-on exposure to system operation is essent | ergy Management involve lot of practical aspects, hence |
| Actions taken | Course BoS approved |
| | Revised/ Added Date |
| Renewable Energy Systems course was rethe existing 4-1-0 to bring into practical energy systems. The 5 hour discussion or accommodate for change in credit structum. | spects associated in renewable Systems (Revised) Bio-fuels has been removed to |
| Energy Management course was revised existing 4-1-0 to bring into practice or trading has been introduced in the light of credit market. | to 3-0-1 structure against the Energy Management (Revised) |
| The four new lab courses (Energy System and Control Lab/ Modelling and Simulati | ab / Industrial Instrumentation (Added) |
| Lab introduced to develop competence in 4. The New course on Energy Audit Pra | Life By Madic Fractices |

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Action Taken Report Approved in Board of Studies dated 13-04-2019 and implemented with effect from 2019 odd sem

| Observations/ Recommendations based on feedback | | POs impacted |
|---|--------------------------|-------------------|
| Employers Feedback: ✓ | | PO3 and PO5 |
| Teachers Feedback (Pre-BoSMoM): ✓ | | |
| Students Feedback: ✓ | | |
| Fundamentals of computational methods requires a revamp to help student development to the Economics and Planning aspects are essential for practical estimations of Renewa | | |
| | | |
| Actions taken | Course Revised/ Added | BoS approved Date |
| Actions taken 1. The course titled Computational methods in Engineering Analysis introduced to strengthen the mathematical aspects of engineering analysis | Revised/ Added | 2002 |

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