

St. Xavier's Catholic College of Engineering, Chunkankadai, Nagercoil – 629003

Department of Humanities and Sciences

**Board of Studies Meeting Minutes # 03**

Date: 08/01/2024

Time: 11.00 am – 1.00 pm

Venue: Hybrid Mode (Board Room)

The Third BOS meeting for the department of Humanities and Sciences, SXCCE was conducted on 08/01/2024 at 10.30 AM in Board Room. The First Year Co-ordinator, all the Heads of Humanities and Sciences, and faculty members of Humanities and Sciences attended the meeting along with a university nominee, one expert members from outside college. F. Adline Aruna, Asst.Prof, department of English delivered the welcome address. Our Principal Dr. J. Maheswaran gave an introductory talk. Dr. R.P. Anto Kumar gave the necessary instructions regarding Skills and COs. Dr. D. Judson Co-ordinator, Department Humanities and Sciences presented the Second BoS meeting minutes and explained the actions and decisions taken by each department.

Revised COs for Physics was presented by Dr. S. Edwin Gladson. The university nominee gave various suggestions regarding the course outcomes. Based on his suggestions the course outcomes were fine-tuned. Suggestions from the PAQIC meeting were also discussed in the BOS meeting. Various teaching methodologies which can be followed for the upcoming semester were also discussed.

**University Nominee for BoS**

1. Dr. T.V. Siva Subramania Pillai, Head, Department of Physics, University College of Engineering, Nagercoil.

**Expert Members in the Subject from outside the college [ONLINE]**

Prof. Dr. S. Monikandan, Manonmaniam Sundaranar University, Tirunelveli

### Agenda for the Meeting

03.01. Confirmation of Second BoS meeting minutes held on **06/06/2023** and Decision/Action Taken report.

03.02. Discussion on the Suggestions / Recommendations offered by the members in the II Academic Council meeting and the II Governing Body meeting.

03.03. Discussion on the Suggestions / Recommendations offered by the members in the Syllabus Subcommittee & PAQIC meeting and Ratification of Course outcomes.

03.04. Hard and Soft Skills to be acquired by Students at the end of Programme

03.05. Other matters if any.

**03.01.** Confirmation of Second BoS meeting minutes held on **06/06/2023** and Decision/Action Taken report.

#### **2<sup>nd</sup> Board of Studies Meeting minutes and Decision/Action Taken report**

BOS Suggestions	Action Taken	Remarks
<u><b>Mathematics - Semester III</b></u> <u><b>Transforms and complex Functions</b></u> <ul style="list-style-type: none"><li>As the syllabus for <b>Transforms and complex Functions</b> syllabus is vast, it was suggested to include “proof excluded” near the specific topics, where ever required.</li></ul>	The proof excluded statement is included in the syllabus	Confirmed by BOS
<u><b>Discrete Mathematics</b></u> <ul style="list-style-type: none"><li>Rearrange the order of the titles in syllabus according to the text book.</li></ul>	The order of the title is rearranged.	Confirmed by BOS
<u><b>Linear Algebra and Transforms</b></u> <ul style="list-style-type: none"><li>Include Basic Algebraic Structures in Unit I.</li><li>Change the sub-heading in Unit I from Vector Space of <math>R^n</math>, Polynomial P (F)</li></ul>	The sub-heading is changed as per the suggestion.	Confirmed by BOS

<p>and Matrix <math>M_{mxn}</math> to Different types of Vector Spaces (<math>R^n</math> <math>P(R)</math> and Matrix only.</p>		
<p><b><u>Transforms and Partial Difference Equation</u></b></p> <ul style="list-style-type: none"> <li>• Z-transform and Fourier transform are not necessary for Civil and Mechanical Engineering.</li> <li>• Based on GATE syllabus, include Laplace transform and Inverse Laplace transform as the last two units for both Civil and Mechanical Engineering.</li> </ul>	<p>Laplace transform and inverse laplace transform is included</p>	Confirmed by BOS
<p><b><u>Mathematics - Semester IV</u></b></p> <p><b><u>Probability and Advanced Statistics</u></b></p> <ul style="list-style-type: none"> <li>• Change the subject name of Probability and Advanced Statistics to Mathematical Statistics</li> <li>• It was suggested to combine the last two sections into a single section in Unit III.</li> </ul>	<p>The subject name is changed as Mathematical statistics.</p>	Confirmed by BOS
<p><b><u>2.4 Ratification for including Naan Mudhalvan courses and Tamil courses as per the directions of Anna University &amp; Government of Tamilnadu</u></b></p> <ul style="list-style-type: none"> <li>• The BOS members ratified the inclusion of Naan Mudhalvan courses.</li> <li>• Tamil courses – Ariviyal Tamil (scientific thoughts and studies in Tamil) and Tamilar Marabu (Heritage of Tamils) have been included.</li> </ul>		Confirmed by BOS

03.02. Discussion on the Suggestions / Recommendations offered by the members in the II Academic Council meeting and the II Governing Body meeting.

General suggestions were offered by the members and there were No Programme specific suggestions.

<b><u>Mathematics - Semester IV</u></b>  <b><u>Probability and Advanced Statistics</u></b>	The subject name is changed as Probability and Statistical Techniques	Confirmed by BOS
--	---	------------------

03.03. Discussion on the Suggestions / Recommendations offered by the members in the Syllabus Subcommittee & PAQIC meeting and Ratification of Course outcomes.

Syllabus Sub Committee Meeting		
Course	Approved COs	Proposed COs
<b>ENGINEERING PHYSICS (PH22101)</b>	<p><b>CO1:</b> Recall the basics of properties of matter, fundamentals of thermal physics and facts of ultrasonics, in all fields of engineering</p> <p><b>CO2:</b> Define the concepts of quantum theory and the characteristics of crystalline materials</p> <p><b>CO3:</b> Illustrate the Bending of beams, thermal behavior of matter and functioning of ultrasonic devices in the current environment</p> <p><b>CO4:</b> Summarize the dual aspects of matter, various crystal structures and imperfections of crystals</p> <p><b>CO5:</b> Determine the Moduli of elasticity of different materials, functioning of thermal devices, engineering and medical application of ultrasonics, uses of scanning tunneling microscope and latest crystal growth techniques</p>	<p><b>CO1:</b> Determine different types of moduli using the basics of elasticity.</p> <p><b>CO2:</b> Compute the thermal conductivity of different bodies and functioning of thermal devices.</p> <p><b>CO3:</b> Utilize the principles of ultrasonics for various industrial and medical applications.</p> <p><b>CO4:</b> Explain the dual aspects of matter and quantum mechanical principles.</p> <p><b>CO5:</b> Compare different crystal systems and outline few crystal growth techniques.</p>
<b>PHYSICS FOR CIVIL ENGINEERING (PH)</b>	<b>CO1:</b> Recall the basic concepts of light, electron transport properties of conductors and	<b>CO1:</b> Utilize the principles of modulus, optics, laser and fibre optics in engineering

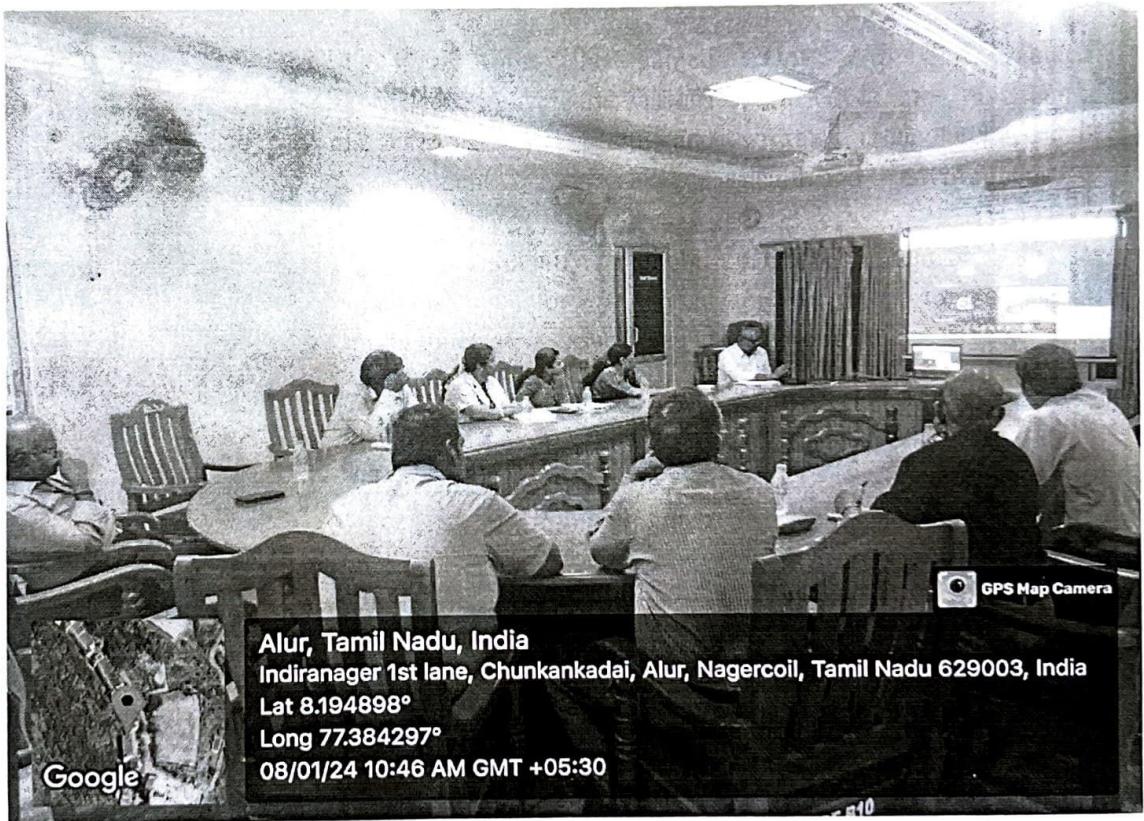
<b>22201)</b>	<p>basic principles of semiconductors.</p> <p><b>CO2:</b> List the factors affecting the buildings and the principles of advanced engineering materials</p> <p><b>CO3:</b> Illustrate laser and fibre optics, classical and quantum concepts of conducting materials, physics of semiconducting materials</p> <p><b>CO4:</b> Explain the impact of heat, sound and light in buildings and functioning of smart materials</p> <p><b>CO5:</b> Develop the applications of optics, fibre optics, moduli of elasticity and thermal energy, behavior of conductors, semiconductors and advanced engineering materials and also the influence of various factors in building constructions.</p>	<p>applications.</p> <p><b>CO2:</b> Demonstrate a strong foundational knowledge in electrical properties of materials.</p> <p><b>CO3:</b> Identify the structures and properties of semiconducting materials.</p> <p><b>CO4:</b> Outline the significance of thermal, optical and acoustical effects in buildings.</p> <p><b>CO5:</b> Organize the processing and applications of advance engineering materials.</p>
<b>PHYSICS FOR INFORMATION SCIENCE (PH 22203)</b>	<p><b>CO1:</b> Relate the concepts of light, electron transport properties of conductors and basic principles of semiconductors.</p> <p><b>CO2:</b> Define the magnetic properties of materials and the principles of optoelectronic and nano devices</p> <p><b>CO3:</b> Illustrate laser and fibre optics, classical and quantum concepts of conducting materials, physics of semiconducting materials</p> <p><b>CO4:</b> Summarize the functioning of various magnetic, optoelectronic and nano devices</p> <p><b>CO5:</b> Demonstrate the concepts of optics, fibre optics, moduli of</p>	<p><b>CO1:</b> Utilize the principles of modulus, optics, laser and fibre optics in engineering applications.</p> <p><b>CO2:</b> Demonstrate a strong foundational knowledge in electrical properties of materials</p> <p><b>CO3:</b> Identify the structures and properties of semiconducting materials.</p> <p><b>CO4:</b> Outline the significance of magnetic properties of materials</p> <p><b>CO5:</b> Apply quantum concepts in the functioning of optoelectronic and nano devices.</p>

	<p>elasticity and thermal energy, behavior of conductors, semiconductors and functioning of magnetic, optical and nano devices in various engineering applications.</p>	
<b>PHYSICS FOR ELECTRONICS ENGINEERING (PH 22202)</b>	<p><b>CO1:</b> Recall the basic concepts of light, electron transport properties of conductors and basic principles of semiconductors.</p> <p><b>CO2:</b> Define the magnetic properties of materials and the principles of optoelectronic and nano devices</p> <p><b>CO3:</b> Illustrate laser and fibre optics, classical and quantum concepts of conducting materials, physics of semiconducting materials</p> <p><b>CO4:</b> Summarize the functioning of various magnetic, optoelectronic and nano devices</p> <p><b>CO5:</b> Demonstrate the concepts of optics, fibre optics, moduli of elasticity and thermal energy, behavior of conductors, semiconductors, magnetic and dielectric materials and also the functioning of optical and nano devices in various engineering applications.</p>	<p><b>CO1:</b> Utilize the principles of modulus, optics, laser and fibre optics in engineering applications.</p> <p><b>CO2:</b> Demonstrate a strong foundational knowledge in electrical properties of materials.</p> <p><b>CO3:</b> Identify the structures and properties of semiconducting materials.</p> <p><b>CO4:</b> Outline the significance of magnetic and dielectric properties of materials.</p> <p><b>CO5:</b> Apply quantum concepts in the functioning of optoelectronic and nano devices.</p>
<b>MATERIAL SCIENCE (PH 22204)</b>	<p><b>CO1:</b> Recall the basic concepts of light, electron transport properties of conductors and basic principles of semiconductors.</p> <p><b>CO2:</b> Define the magnetic parameters and the principles of advanced engineering materials</p> <p><b>CO3:</b> Illustrate laser and fibre</p>	<p><b>CO1:</b> Utilize the principles of modulus, optics, laser and fibre optics in engineering applications.</p> <p><b>CO2:</b> Demonstrate a strong foundational knowledge in electrical properties of materials</p> <p><b>CO3:</b> Identify the structures and properties of semiconducting materials.</p>

	<p>optics, classical and quantum concepts of conducting materials, physics of semiconducting materials.</p> <p><b>CO4:</b> Summarize the theories of magnetic materials and functioning of magnetic devices</p> <p><b>CO5:</b> Develop the applications of fibre optics, moduli of elasticity and thermal energy, behavior of conductors, semiconductors, magnetic and advanced engineering materials in various engineering fields.</p>	<p><b>CO4:</b> Outline the significance of magnetic properties of materials.</p> <p><b>CO5:</b> Organize the processing and applications of advance engineering materials.</p>
--	--	--

Syllabus Sub Committee Meeting		
Course	Approved COs	Proposed COs
<b>ENGINEERING CHEMISTRY (CH22101)</b>	<p><b>CO1</b> - Recall the basic concepts of water softening, nano materials and batteries.</p> <p><b>CO2</b> - Summarise the types of corrosion, fuels and energy storage devices.</p> <p><b>CO3</b> - Identify suitable methods for water treatment, fuel and corrosion control.</p> <p><b>CO4</b> - Explain the basic principles of electrochemistry and engineering materials in industries.</p> <p><b>CO5</b> - Apply the knowledge of engineering materials, fuels and energy storage devices for material selection and also in energy sectors.</p>	<p><b>CO1</b> – Recall the basic concepts of water softening methods</p> <p><b>CO2</b> – Explain the basic principles of corrosion and its control methods.</p> <p><b>CO3</b> – Summarise the types of fuels and their calorific value.</p> <p><b>CO4</b> – Identify suitable energy storage devices for energy conservation in various sectors.</p> <p><b>CO5</b> - Apply the knowledge of engineering materials for material selection in industries</p>
<b>ENVIRONMENT AND SUSTAINABILITY (CH22201)</b>	<p><b>CO1</b> - Explain the basic concepts of environment and sustainable development.</p> <p><b>CO2</b> - Summarise the types of pollution, various natural resources and food adulterants.</p>	<p><b>CO1</b> – Define the basic concepts of environment, ecosystem and biodiversity.</p> <p><b>CO2</b> – Explain the various natural resources and the reasons for their exploitation.</p>

	<p><b>CO3</b> -.Outline the methods for waste management and detection of adulterants.</p> <p><b>CO4</b> - Apply the gained knowledge to overcome various issues related to health and environment</p> <p><b>CO5</b> - Identify suitable methods for local environmental issues and sustainability.</p>	<p><b>CO3</b> -.Outline the methods for the control of pollution and waste management</p> <p><b>CO4</b> - Apply the gained knowledge to overcome various issues related to health and environment</p> <p><b>CO5</b> - Identify suitable methods for local environmental issues and sustainability.</p>
--	---	--



### PAQIC Meeting

Agenda	Suggestions from Members
Target for academic year 2023-2024	➤ The CO and PO attainments for the academic year 2022-2023 are calculated and analysis is done. The target for

	<p>academic year 2022-2023 was set as <b>2.3</b> from the analysis of 2021-2022 CO and PO attainments. For the target of <b>2.3</b>, the POs (PO1, PO5, PO8) were attained in the year 2022-2023.</p> <p>➤ Since only three POs (PO1, PO5, PO8) were attained for the target of <b>2.3</b>, the target for the current academic year 2023-2024 is also set as <b>2.3</b>.</p>
Discussion on compliance report of NBA	<p>➤ As per the NBA compliance report, the COs were refined and targets were also set as per the requirements. The committee has given more suggestions to attain the target and improve the academic performance of the students</p>
Teaching Methodologies and Assessment	<p>➤ Procedures like interactive videos, lectures from industry experts, self-paced teaching and learning methods can be encouraged. This will help to get live sessions from industries and societies.</p> <p>➤ Activity based assessment with proper evaluation procedure, particularly for core subjects may be considered.</p> <p>➤ E-content/video generation based assessment can also be used.</p>

03.06. Hard and Soft Skills to be acquired by Students at the end of Programme

#### **TECHNICAL & SOFT SKILLS**

<b>SOFT SKILLS</b>	<b>TECHNICAL SKILLS</b>
<p><b>Communication Skills</b></p> <ul style="list-style-type: none"> <li>• Active listening skills</li> <li>• Technical Writing skills</li> <li>• Presentation skills</li> <li>• Non-verbal communication skills</li> <li>• Conflict resolving</li> <li>• Confidence building</li> </ul> <p><b>Teamwork and Project Collaboration</b></p> <ul style="list-style-type: none"> <li>• Strategic Planning</li> <li>• Executing</li> <li>• Managing</li> </ul> <p><b>Problem Solving Skills:</b></p> <ul style="list-style-type: none"> <li>• Critical Thinking</li> <li>• Troubleshooting</li> <li>• Innovation</li> <li>• Creativity skills</li> </ul>	<p><b>Engineering Physics</b></p> <ul style="list-style-type: none"> <li>• Ability to measure thickness upto micrometer range using Air wedge</li> <li>• Know the modes of heat transfer and able to find thermal conductivity of bad conductor by Lees disc</li> <li>• Ability to determine Young's modulus of given material in the form of beams</li> <li>• Capability to find the Numerical aperture and Acceptance angle of optical fiber</li> <li>• Capacity to measure band gap of semiconductor</li> <li>• Skill on determining wavelength of spectral lines using Spectrometer – Grating</li> <li>• Determine size of particles using laser</li> <li>• Experience in finding viscosity of given liquid by Poiseuille's method</li> <li>• Acquaintance in writing Physics experimental reports</li> </ul>

<ul style="list-style-type: none"> <li>• Research skills</li> <li>• Reasoning</li> <li>• Ethical Decision-Making</li> </ul> <p>Organizing Skills</p> <ul style="list-style-type: none"> <li>• Time management</li> <li>• Goal-setting</li> <li>• Planning</li> <li>• Prioritization</li> </ul> <p>Creativity Skills</p> <ul style="list-style-type: none"> <li>• Problem Solving</li> <li>• Analysis</li> <li>• Lateral thinking</li> <li>• Creative writing</li> </ul> <p>Personality Development Skills</p> <ul style="list-style-type: none"> <li>• Body language</li> <li>• Etiquettes and manners</li> <li>• Good attitude</li> <li>• Psychological stability</li> <li>• Presence of mind</li> <li>• Smart</li> </ul> <p>Leadership Skills</p> <ul style="list-style-type: none"> <li>• Co-ordinating</li> <li>• Interpersonal relationship</li> <li>• Team building</li> <li>• Conflict resolution</li> <li>• Rapport building</li> </ul>	<ul style="list-style-type: none"> <li>• Well-versed in handling measuring instruments like Vernier calipers, Screw gauge, Travelling microscope and Spectrometer.</li> </ul> <p><b>Engineering chemistry and Environment &amp; sustainability</b></p> <ul style="list-style-type: none"> <li>• Qualitative analysis – To identify the type of hardness in water, ions and the metals in the given sample</li> <li>• Quantitative analysis – To estimate the amount of metals or ions in the given sample.</li> <li>• To test the water quality</li> <li>• To purify water by ion-exchange and desalination</li> <li>• To protect the article from corrosion by applying simple methods</li> <li>• To control pollution in a small scale by simple methods.</li> <li>• To test the quality of food materials.</li> </ul> <p><b>Engineering Mathematics</b></p> <ul style="list-style-type: none"> <li>• Capacity to solve mathematical problems.</li> <li>• Ability to find the area of un shaped region.</li> <li>• Ability to compute the missing data for statistical analysis.</li> <li>• To test independence of attributes.</li> <li>• To test the mean significant of sample and population.</li> <li>• Ability to compare the significant of different type of samples.</li> <li>• Proficiency in finding the percentage occurrence of an event in random experiments.</li> <li>• Capacity to identify alternate methods in problem solving.</li> <li>• Capacity to find the minimum transportation cost.</li> <li>• Ability to decide the validity of the argument.</li> <li>• Ability to find the displacement of the string at any point.</li> <li>• Understanding the concept behind conversion of time</li> </ul>
---	--

domain function into frequency domain function.

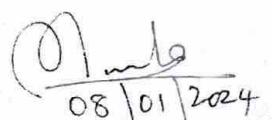
### Communicative English

- Technical writing.
- Oral Presentation Skills.
- Correct pronunciation of words.
- Professional Communication through email, project proposals, formal letters.
- Sentence structure through grammar
  - Parts of speech
  - Phrases and Clauses
  - Punctuation
- Vocabulary building.
- Collaborative Communication skills.
- Graphic Interpretations
- Data analysis - Analytical writing  
Marketing - product descriptions



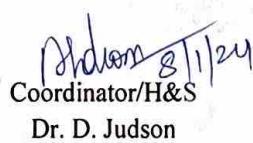
8/1/24

Dr. T. V. Siva Subramania Pillai  
(University Nominee)



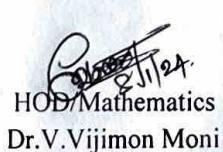
08/01/2024

Dr. S. Monikandan  
(Subject Expert)



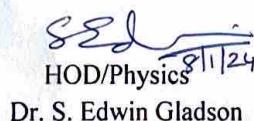
8/1/24

Coordinator/H&S  
Dr. D. Judson



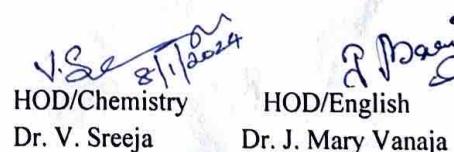
8/1/24

HOD/Mathematics  
Dr. V. Vijimon Moni



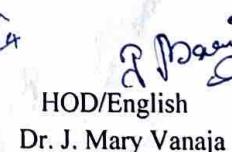
8/1/24

HOD/Physics  
Dr. S. Edwin Gladson



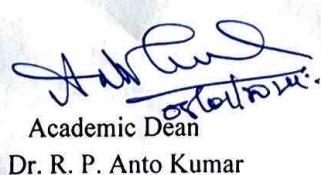
8/1/24

HOD/Chemistry  
Dr. V. Sreeja



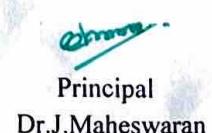
8/1/24

HOD/English  
Dr. J. Mary Vanaja



8/1/24

Academic Dean  
Dr. R. P. Anto Kumar



8/1/24

Principal  
Dr. J. Maheswaran