

MECHZONE

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INSIDE THIS ISSUE

- Finite Element Analysis in Modern Structural Design
- Wind Energy Engineering: Challenges & Opportunities in India
- Sustainable Manufacturing: Life Cycle Assessment Framework
- Design and Fabrication of a Robotic Arm
- Thermal Analysis of a Shell-and-Tube Heat Exchanger
- Summer Internship at FACT Kochi: Lessons from the Plant Floor

Department of Mechanical Engineering
SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY
Karukutty, Ernakulam, Kerala

From the Editor's Desk: Celebrating Milestones and New Horizons

Welcome to the May edition of our research digest. As the academic year draws to a close, this season naturally becomes a time of culmination, celebration, and transition for our department.

This month, our primary focus is on celebrating the incredible milestones achieved by our final-year mechanical engineering students. The culmination of their hard work, late nights, and technical ingenuity is beautifully captured in this season's project reports and research digests. From groundbreaking work in robotics and automated systems to innovative explorations in multi-phase hybrid composites and sustainable engineering, these projects showcase a profound readiness to tackle real-world industrial challenges.

Beyond student achievements, this issue highlights the ongoing efforts of our faculty and research scholars who continue to push the boundaries of materials science, thermal engineering, and environmental sustainability. Your dedication to mentorship and academic rigor remains the cornerstone of our department's success.

To our graduating students, we extend our heartiest congratulations. As you step out of these halls and into the professional world or higher research paths, carry forward the spirit of inquiry and excellence cultivated here. To our readers, we hope the pages of this digest offer a compelling look at the vibrant research ecosystem thriving within our institution.

Warm regards,

Chief Editor / HOD

Dr. Rag R L

Department of Mechanical Engineering

Vision and Mission of the Institute

Vision

To be a centre of excellence in providing technical education in harmony with the changing global order.

Mission

To offer technology related education of exceptional quality to students by developing their total personality with due emphasis on ethical values and preparing them to meet the growing challenges of the industry and human society.

Vision and Mission of the Department

Vision

To be a centre of excellence in Mechanical Engineering recognized for its quality education, innovative research and social outreach programs.

Mission

1. Provide excellent student-centric education generating high calibre graduates to face global challenges.
2. Maintain state-of-art facilities for faculty and students to learn, research and disseminate knowledge.
3. Emphasize on collaborative technology-transfer encouraging innovations for the benefit of society.

May 2024 · Vol 4 · Issue 1

FACULTY ARTICLES

Finite Element Analysis in Modern Structural Engineering: Principles and Practice	<i>Mr. Nikhil Asok N· Assistant Professor</i>	04
Wind Energy Engineering: Harnessing India's Renewable Potential	<i>Mr. Francis Thomas· Assistant Professor</i>	07
Sustainable Manufacturing and Life Cycle Assessment: A Framework for Engineers	<i>Dr. Gibin George· Associate Professor</i>	09

STUDENT ARTICLES

Design and Fabrication of a Robotic Arm	<i>Jithin George (S8 ME)</i>	11
Thermal Analysis of a Shell-and-Tube Heat Exchanger: From Theory to CAD	<i>Muhammed Rizwan P A (S6 ME)</i>	13

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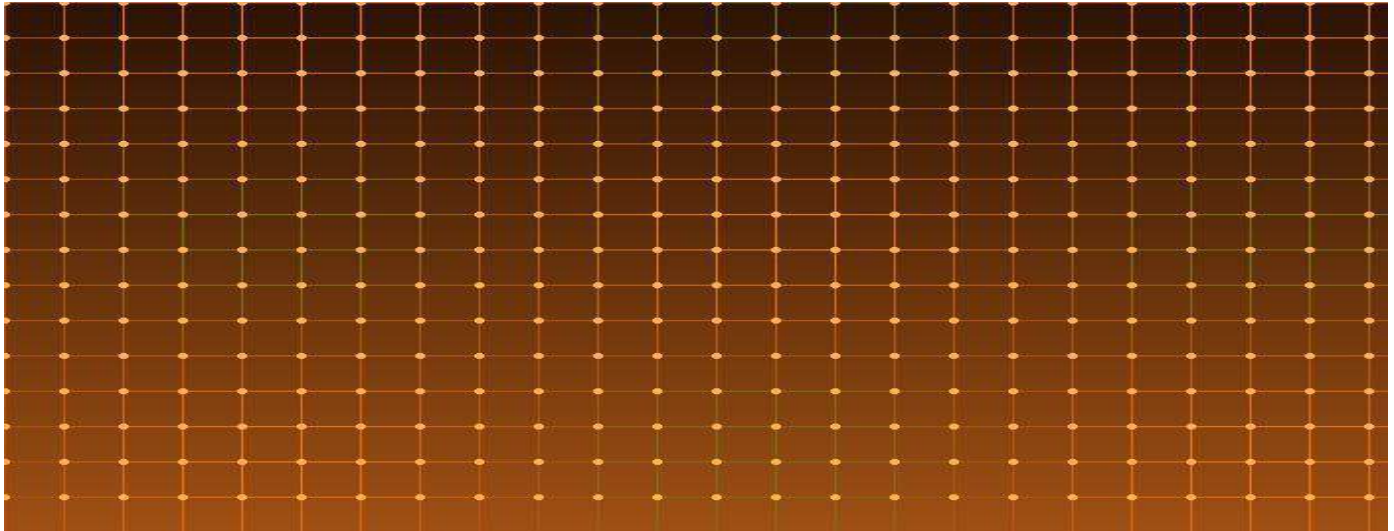


Fig. 1 — Von Mises stress distribution on a structural bracket under combined bending and torsion loading — simulated using ANSYS Mechanical.

FACULTY ARTICLE

Finite Element Analysis in Modern Structural Engineering: Principles, Practice and the Path to Digital Twins

From hand calculations to cloud-based simulation — how FEA has transformed structural design in India's aerospace, automotive, and infrastructure sectors.

Nikhil Asok N• Assistant Professor, Department of Mechanical Engineering

When the Bombay High Court mandated seismic re-evaluation of all pre-1970 reinforced concrete structures in Maharashtra in early 2024, structural engineering offices across Mumbai faced a formidable challenge: assess hundreds of buildings rapidly, accurately, and without destructive testing. The answer, almost universally, was Finite Element Analysis (FEA) — the computational method that has quietly become the backbone of structural, mechanical, and aerospace engineering over the past four decades.

FEA works by dividing a complex geometry into thousands or millions of small, mathematically tractable sub-domains — finite elements. Within each element, displacement fields are approximated by polynomial shape functions; the global stiffness matrix assembled from elemental contributions is then solved for nodal displacements, from which stresses, strains, and reaction forces are derived. What makes modern FEA transformative is not the mathematics — Gauss and Ritz developed the foundations in the 19th century — but the computational power to execute these matrix operations on models with millions of degrees of freedom in minutes rather than weeks.

The Four Domains of FEA Application

- 1

Static Structural Analysis

The workhorse of FEA: computing stress and deformation under steady loads. From automotive suspension components to pressure vessel nozzles, static FEA provides the safety factors and material efficiency that design codes demand. At SCMS SET, our students routinely run static analyses on SolidWorks Simulation from S4 onwards.
- 2

Dynamic & Modal Analysis

Structures under time-varying loads — rotating machinery, earthquake excitation, vehicle NVH — require dynamic FEA. Modal analysis identifies natural frequencies and mode shapes; transient analysis traces time-history response. India's growing metro rail network depends critically on dynamic FEA for track-structure interaction.
- 3

Thermal & Coupled Analysis

Conjugate heat transfer FEA couples fluid flow with structural heat conduction, enabling analysis of thermal stress — critical for gas turbine blades, brake discs, and electronic cooling systems. Coupled thermo-structural analysis predicts fatigue life under thermal cycling.
- 4

Non-linear & Contact Analysis

Material non-linearity (plasticity, creep, hyperelasticity), geometric non-linearity (large deformation), and contact non-linearity (friction, separation) place the greatest demands on solver robustness and user expertise. Crash simulation for automotive safety is the canonical example, requiring sub-millisecond timesteps across millions of elements.

"FEA has not replaced engineering judgement — it has made that judgement more consequential, because the gap between a good analyst and a poor one is now measurable in structural failures rather than in calculation errors."

Mesh Quality: The Hidden Determinant of Result Accuracy

Every FEA textbook warns that results are only as good as the mesh, yet mesh quality remains the most underappreciated skill in simulation practice. The key indicators — aspect ratio, Jacobian ratio, skewness, and orthogonality — must be verified before trusting any result. As a rule of thumb: three layers of prismatic elements across any stress concentration, maximum element size one-sixth of the smallest structural feature, and a mesh convergence study showing less than 3% change between successive refinements.

Table 1 — FEA element types and recommended applications.

Element Type	Best For	DOF/Node	Typical Application
Tet4 (linear)	Rapid meshing, coarse mode	13	Concept-phase stress screening
Tet10 (quadratic)	Curved geometries	3	General structural components
Hex8 (linear)	Regular geometries	3	Pressure vessels, bulk solids
Hex20 (quadratic)	High accuracy, thin features	3	Fatigue analysis, contact
Shell (S4R, S8R)	Thin-walled structures	6	Sheet metal, chassis, tanks
Beam (B31, B32)	Slender members, frames	6	Trusses, pipelines, girders

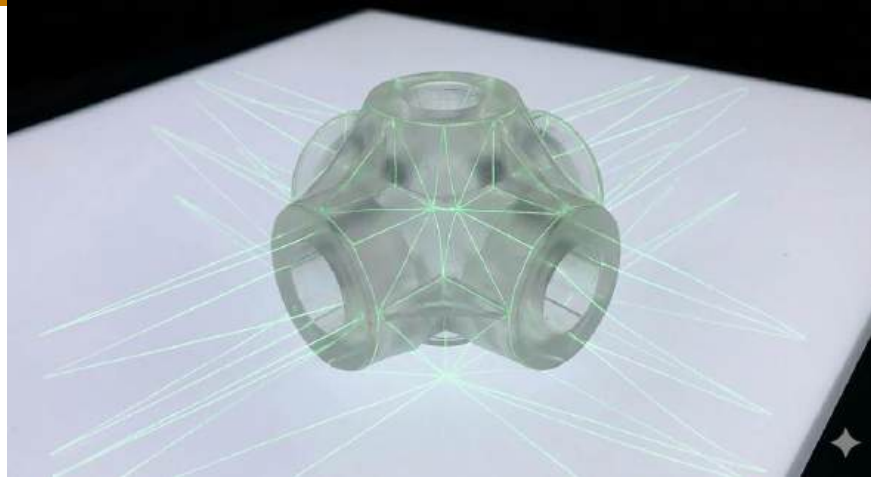


Fig. 2. The Discretization Process.

The Evolution: Multi-Physics and the Path to Digital Twins

Structural FEA does not exist in a vacuum. Modern engineering challenges are rarely just structural; they are multi-physics problems. A bridge is subject to wind and vehicle loads (Fluid-Structure Interaction). An engine component experiences intense heat and structural stress (Thermal-Structural coupling). FEA has evolved to solve these coupled problems simultaneously. But the ultimate application, the 'holy grail' of modern engineering, is the "Digital Twin." A Digital Twin is a living, high-fidelity FEA model of a physical asset that already exists. It is not just a 3D model; it is connected. The physical structure is embedded with IoT sensors (strain gauges, accelerometers). This real-time data feeds directly back into the FEA model, updating it to reflect the asset's exact current state—accounting for damage, fatigue, and real environmental exposure.

Digital Twins: FEA's Next Frontier

The Digital Twin concept — a continuously updated virtual replica of a physical asset, fed by sensor data and validated against operational measurements — places FEA at the centre of the next generation of structural health monitoring. Siemens' Simcenter platform and Ansys Twin Builder allow physics-based models to be coupled with machine learning surrogate models, enabling real-time structural state estimation for bridges, wind turbine towers, and aircraft fuselages.

For our students: proficiency in at least one commercial FEA package (ANSYS Workbench, Abaqus, or SolidWorks Simulation) combined with Python scripting for parametric model generation and results post-processing is now an essential skill for mechanical engineering roles in design, aerospace, automotive, and energy sectors.

"The engineer of 2030 will not just run simulations — they will build living digital models that update in real time as their structures experience the real world."

FACULTY ARTICLE

Wind Energy Engineering: Harnessing India's Vast Renewable Potential

With India targeting 500 GW of renewable energy by 2030, wind engineers face the most technically demanding and commercially exciting decade in the sector's history.

Mr. Jose Sheril D'Cotha · Assistant Professor, Department of Mechanical Engineering

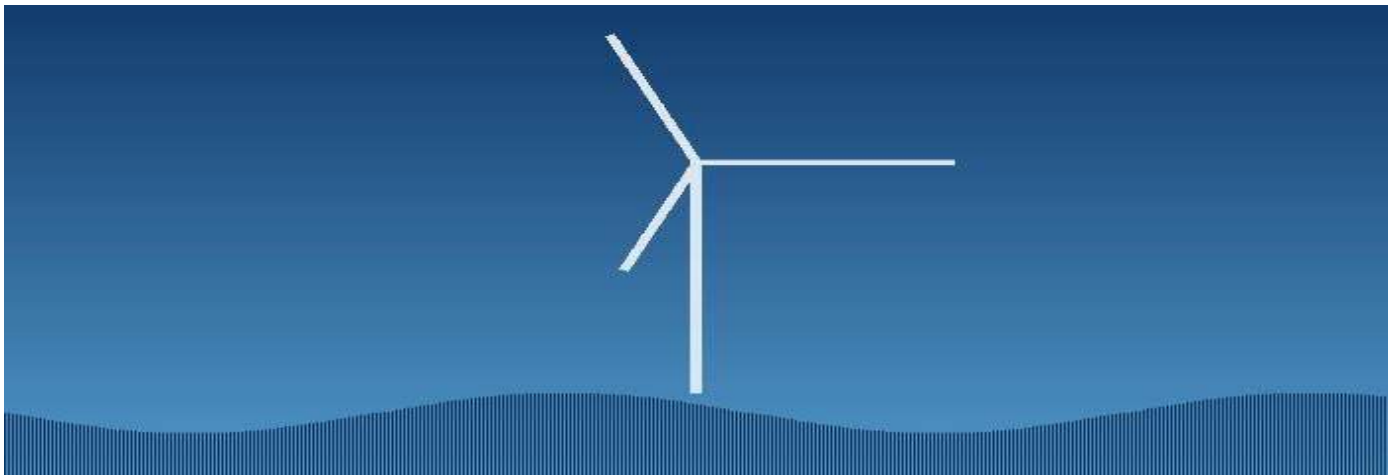


Fig. 3 — Horizontal-axis wind turbine silhouette at dusk. India's installed wind capacity crossed 46 GW in early 2024, with Tamil Nadu, Gujarat, and Rajasthan leading capacity addition.

India added 2.33 GW of wind capacity in fiscal year 2023-24 — the highest single-year addition since 2017 — driven by a combination of improved auction mechanisms under the Ministry of New and Renewable Energy (MNRE), competitive tariffs averaging Rs. 2.90/kWh, and a recovering global supply chain for turbine components. Yet this pace must nearly triple to meet India's 2030 target of 140 GW of installed wind capacity.

Modern utility-scale wind turbines — typified by the Siemens Gamesa SG 5.0-145 and the Vestas V150-4.5 MW platforms increasingly deployed in India — are marvels of mechanical engineering. The rotor diameter of 145-150 metres means the blade tip travels at over 300 km/h; the nacelle houses a gearbox or permanent magnet direct-drive system transmitting up to 5 MW of mechanical power; the tower — typically 120-140 m hub height — must withstand 50-year return period wind loads while accommodating soil settlement and seismic excitation.

Aerodynamic Design Fundamentals

Wind turbine blade design begins with the Betz limit — the theoretical maximum of 59.3% of available wind power extractable by any rotor. Real blades achieve power coefficients (C_p) of 0.45-0.50 through carefully profiled aerofoil sections (NACA 63-series, DU, or S-series) with chord and twist distributions that maintain near-optimal angle of attack across the blade span at rated wind speed.

India's Wind Energy Milestones — 2024

Milestone	Detail
Total installed capacity	46.4 GW (March 2024)
2023-24 addition	2.33 GW — 7-year high
Offshore wind target	30 GW by 2030 — auctions started
Largest state	Tamil Nadu: 10.6 GW
Largest turbine deployed	5.0 MW (Siemens Gamesa, Rajasthan)
Avg. PLF (onshore)	27.2% (FY 2023-24)

Key Mechanical Engineering Challenges

Fatigue loading: A blade experiences $>10^8$ load cycles in a 20-year lifetime. Damage equivalent load (DEL) analysis using IEC 61400 design load cases drives blade and drivetrain design.

Drivetrain reliability: Gearbox failures account for the highest corrective maintenance cost. Planetary gearboxes with condition monitoring (oil debris sensors, vibration analysis) are standard on new installations.

Offshore Wind: The Next Frontier for Kerala

India's first offshore wind auction — for a 1 GW project off the coast of Gujarat — was announced in March 2024, with Tamil Nadu and Karnataka following. Offshore turbines (typically 8-15 MW, monopile or jacket foundations in 20-50m water depths) present mechanical engineering challenges of a different order of magnitude: corrosion protection of structural steel in marine environments, dynamic interaction between ocean waves, turbine loads, and foundation stiffness, and the logistics of maintaining rotating machinery 30-100 km from shore.

For Kerala, with its 590 km coastline and consistent south-west monsoon winds, offshore wind represents a significant future opportunity. KSEB's preliminary wind resource assessment off Thiruvananthapuram identified mean wind speeds of 7.8-8.4 m/s at 100m hub height — well above the 7 m/s viability threshold. The mechanical engineering graduates of this decade will be the ones who design, install, and maintain these machines.

SCMS SET Wind Energy Research

Our department is currently developing a 1:50 scale wind turbine test rig for the Fluid Mechanics Lab — fabricated entirely by S6 students under the guidance of Dr. Vidya Chandran. The rig will measure power coefficient vs. tip speed ratio curves and validate against BEM (Blade Element Momentum) theory predictions. Commissioning expected: July 2024.

"India's wind engineering talent gap is estimated at 15,000 engineers by 2030. The mechanical engineers graduating today are uniquely positioned to fill it."

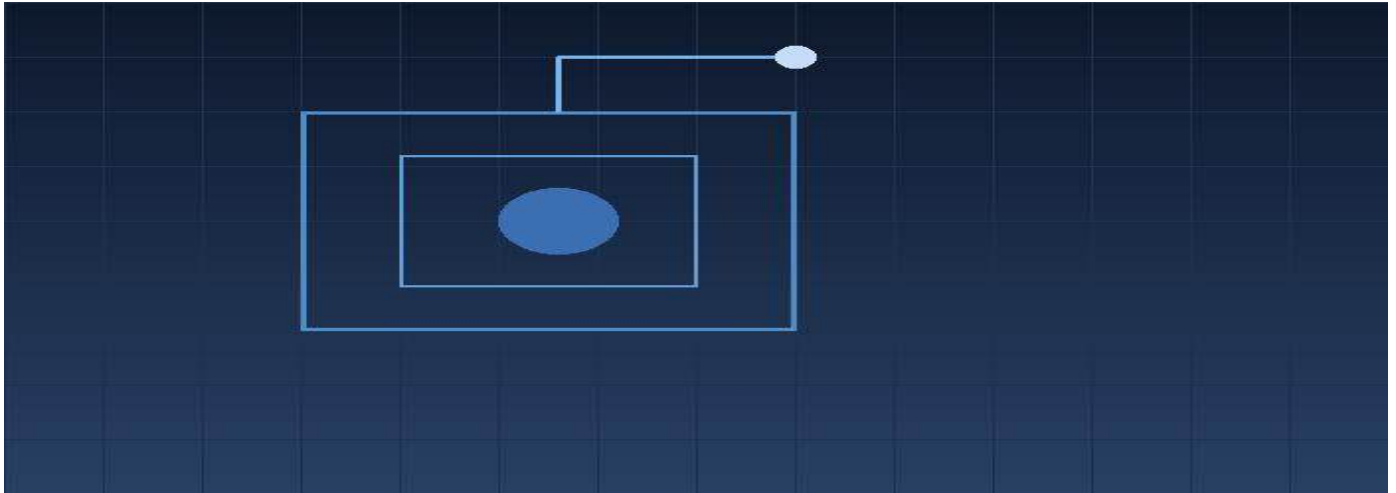


Fig. 4 — CNC machining cell in a modern precision manufacturing facility. Sustainable manufacturing demands that every process step be evaluated for energy consumption, material waste, and end-of-life impact.

FACULTY ARTICLE

Sustainable Manufacturing and Life Cycle Assessment: A Framework Every Engineer Must Understand

As the EU's Carbon Border Adjustment Mechanism and India's Extended Producer Responsibility rules reshape global trade, LCA is shifting from academic exercise to industrial necessity.

Mr. Francis Thomas · Assistant Professor, Department of Mechanical Engineering

In April 2024, the European Union's Carbon Border Adjustment Mechanism (CBAM) entered its transitional reporting phase, requiring importers of steel, aluminium, cement, fertilisers, hydrogen, and electricity to report the embedded carbon content of their products. For India's export-oriented manufacturing sector — including automotive components, engineering goods, and steel — this is not a distant regulatory concern. It is an immediate commercial reality that requires mechanical engineers to understand and quantify the environmental footprint of every process in their production chain.

Life Cycle Assessment (LCA) is the standardised methodology (ISO 14040/14044) for quantifying environmental impacts across a product's entire life: from raw material extraction ('cradle') through manufacturing, use, and end-of-life disposal or recycling ('grave'). For a mechanical engineer, LCA provides the systematic language to answer questions like: Is aluminium or steel lighter on the environment for a car door panel? Does hard turning replace cylindrical grinding with lower energy per part?

GOAL & SCOPE	INVENTORY ANALYSIS	IMPACT ASSESSMENT
Define system boundaries (cradle-to-gate, cradle-to-grave, or gate-to-gate), functional unit (e.g. 1 kg of machined aluminium component), and intended audience. This step governs every subsequent decision.	Compile all material and energy flows: raw materials, energy inputs, water consumption, emissions to air/water/soil. Ecoinvent and the Indian LCA database (ILCDb) are key data sources for manufacturing contexts.	Convert inventory flows to impact categories: Global Warming Potential (GWP, kg CO ² -eq), Cumulative Energy Demand (CED, MJ), Eutrophication, Acidification, Water depletion. ReCiPe 2016 is the leading characterisation methodology.

Hotspot Analysis: Where Impacts Actually Occur

For most machined metal components, LCA hotspot analysis reveals a consistent pattern: 80-90% of GWP occurs at the material production stage (steelmaking, aluminium smelting), not in the machining process itself. This insight changes the designer's priority — material substitution and lightweighting (reducing mass) yield far greater environmental benefit than energy efficiency improvements in the machine tool.

Manufacturing Process	GWP (kg CO ₂ -eq/kg)	Energy (MJ/kg)	Dominant Impact Stage
CNC Turning (steel)	4.8 – 6.2	68 – 84	Material production (72%)
CNC Turning (aluminium)	8.4 – 11.0	115 – 148	Material production (85%)
Injection moulding (PP)	2.1 – 3.4	92 – 118	Material production (65%)
WAAM (Ti-6Al-4V, wire)	22 – 28	380 – 450	Wire production (55%)
FDM 3D printing (PLA)	1.9 – 2.8	55 – 72	Electricity (48%)

Table 2 — Indicative LCA hotspot data for common manufacturing processes (functional unit: 1 kg of finished part).

What This Means for Engineering Practice

The practical implication for mechanical engineers is clear: design for minimum material use (topology optimisation, generative design) has a larger environmental dividend than any process efficiency measure. A component redesigned to use 20% less aluminium achieves a 17% reduction in cradle-to-gate GWP — equivalent to running the machining centre on 100% renewable electricity for 40% of its operating hours.

"Sustainability is not a constraint on good engineering — it is the definition of it. The engineer who minimises material, energy, and waste simultaneously minimises cost, carbon, and complexity."



Fig. 5 — Completed 3-DOF robotic arm prototype (Team MechBot, SCMS SET). The arm achieved a positional repeatability of ± 1.2 mm across its 450 mm reach.

STUDENT ARTICLE

Design and Fabrication of a Robotic Arm

Jithin George · S8 Mechanical Engineering

Our S8 project started with a challenge from Mr. Nikhil Asok N: 'Design a robotic arm that can pick and place objects up to 500 grams across a 400 mm reach. Budget: Rs. 4,500. Timeline: 8 weeks.' We wrote those three constraints on a whiteboard, stared at them for a long moment, and then made the most important decision of the entire project: we would design every component before buying or fabricating anything.

Three degrees of freedom (3-DOF) was the design choice that shaped everything else. Two revolute joints at the shoulder and elbow, and a continuous-rotation servo at the base, give the arm a hemispherical workspace of radius 450 mm. We modelled the full kinematic chain in SolidWorks — verifying workspace coverage before a single bracket was cut.

ROBOTIC ARM — TECHNICAL SPECIFICATIONS	
Degrees of Freedom (DOF)	3 (base rotation, shoulder, elbow)
Payload capacity	520 g (tested, 500 g design target met)
Reach (max extension)	452 mm from base axis
Base rotation	0–270° (MG995 servo, 10 kg·cm torque)
Shoulder joint	0–180° (MG996R, 13 kg·cm torque)
Elbow joint	0–150° (MG996R, 13 kg·cm torque)
End-effector	Parallel-jaw gripper, 0–60 mm opening
Structure	3 mm laser-cut acrylic links; aluminium gussets
Controller	Arduino Uno + PCA9685 16-channel PWM board
Power supply	5V/6A regulated DC (servos), 5V USB (Arduino)
Positional repeatability	± 1.2 mm (5 trials, 300 mm reach)
Total cost	Rs. 4,280 (within Rs. 4,500 budget)

The Design Challenge We Didn't Expect: Torque Calculation

Everything in our project pivoted on one calculation: what torque does the shoulder servo need to hold the forearm and payload horizontally? The worst case — arm fully extended, 500 g payload at the gripper — gives a moment arm of 300 mm about the shoulder axis. The torque required is $0.5 \text{ kg} \times 0.30 \text{ m} \times 9.81 \text{ m/s}^2 = 1.47 \text{ N}\cdot\text{m}$, plus the forearm's own weight moment. Total: approximately 2.1 N·m, or 21.4 kg·cm.

The MG996R servo is rated at 13 kg·cm at 6V. We were 8.4 kg·cm over budget — with a single servo. The solution: a compound joint using two MG996R servos in parallel at the shoulder, sharing the load. This required redesigning the shoulder bracket entirely. It cost us three days and taught us more about mechanical power transmission than a semester of lectures.

"The moment you discover your servo is undersized at the last moment— with the exhibition in 72 hours — is when you find out what kind of engineer you are."

Arduino Control and Inverse Kinematics

We programmed the Arduino using a geometric inverse kinematics approach — computing joint angles from desired end-effector (x, y, z) coordinates using the cosine rule. With a 3-DOF planar arm, IK has a closed-form solution: no iteration required, just trigonometry. The PCA9685 PWM board allowed smooth servo interpolation between positions at 50 Hz update rate, giving the arm the fluid motion that impressed the judges most.

What We Would Do Differently

1 Use stepper motors, not servos

Servo positional accuracy depends on feedback potentiometers with limited resolution. Stepper motors with encoders would give sub-0.1 mm repeatability at similar cost — essential for any pick-and-place application.

2 Start with kinematics, not CAD

We wasted a week on CAD aesthetics before properly verifying workspace coverage. In future: solve kinematics and dynamics on paper first; CAD is for communication, not design.

3 Document everything from Day 1

Our project report took three days to write because we hadn't maintained a design log. From the next project onwards: one entry per session, minimum.

STUDENT ARTICLE

Thermal Analysis of a Shell-and-Tube Heat Exchanger: From Theory to CFD

A project that began as a LMTD calculation exercise and evolved into a full CFD simulation study — revealing why real heat exchangers often underperform their theoretical predictions.

Muhammed Rizwan P A . S6 Mechanical Engineering

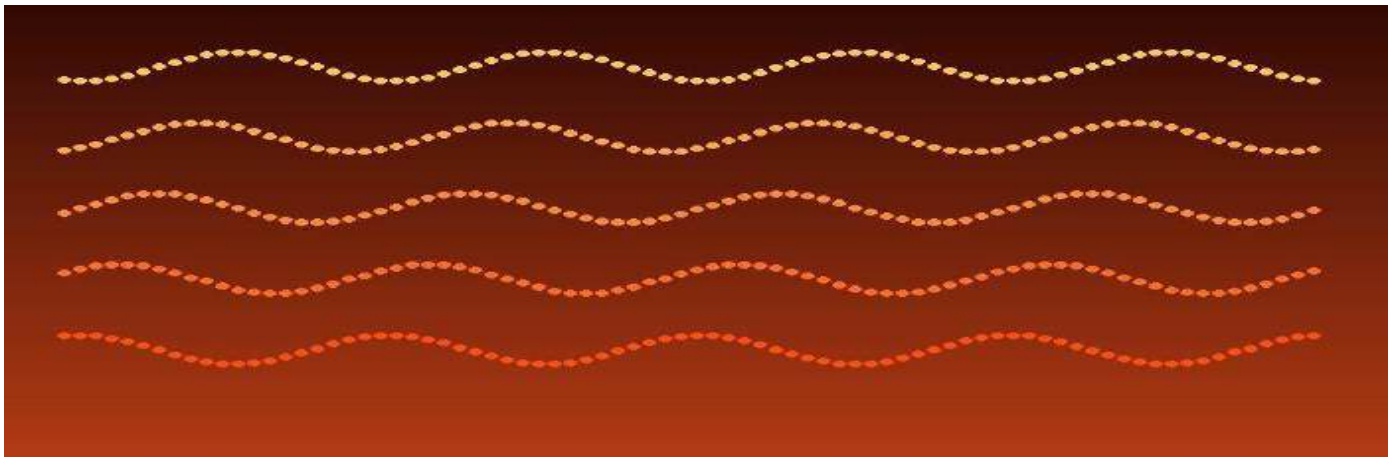


Fig. 6 — Temperature distribution along tube length: CFD result (ANSYS Fluent) showing the characteristic approach of hot and cold fluid temperatures toward the log-mean temperature difference (LMTD) prediction.

This project started with a question from Prof. Vidya Chandran that seemed almost too simple: 'Calculate the required heat exchanger area for cooling 2 kg/s of engine oil from 90°C to 50°C using water entering at 25°C.' Twenty minutes later, I had an answer — 1.87 m² of heat transfer area. Six weeks later, I had discovered why that answer was incomplete, and why heat exchanger design is one of the most nuanced problems in applied thermodynamics.

LMTD Method: The Starting Point

The Log Mean Temperature Difference method computes heat duty as $Q = U \cdot A \cdot \text{LMTD} \cdot F$, where U is the overall heat transfer coefficient, A is the transfer area, and F is a correction factor for multi-pass or cross-flow arrangements. For my counter-flow 1-2 shell-and-tube exchanger, $F = 0.91$ — already a 9% penalty relative to pure counter-flow.

The overall heat transfer coefficient U is where real complexity enters. U is a harmonic mean of shell-side, wall, and tube-side resistances: fouling on both surfaces, contact resistance at tube-to-tubesheet joints, and the dominant film coefficients governed by Nusselt number correlations (Dittus-Boelter for turbulent tube-side flow; Bell-Delaware for shell-side).

Heat Exchanger Specification

Parameter	Value
Configuration	1 shell pass, 2 tube passes
Shell inner diameter	203.2 mm (8-inch NPS)
Tube OD / ID	25.4 / 22.1 mm (16 BWG)
No. of tubes	37 (triangular pitch, 31.75 mm)
Effective tube length	1,200 mm
Hot fluid (shell)	Engine oil, 2 kg/s
Cold fluid (tubes)	Water, 3 kg/s
Design pressure	10 bar (shell), 15 bar (tube)

Key LMTD Calculation Results

Quantity	Calculated Value
Heat duty Q	335 kW
LMTD (counter-flow)	38.4°C
Correction factor F	0.91
U (design, clean)	312 W/m²·K
Required area A	1.87 m² → 33 tubes
Actual area (37 tubes)	2.21 m² (18% margin)

Where CFD Changed Everything

My ANSYS Fluent simulation of the as-designed exchanger revealed something the LMTD calculation cannot capture: flow maldistribution. In the shell side, oil preferentially channelled along the shell wall and through the baffle window zones, creating a bypass stream that experienced much less heat transfer than the cross-flow stream over the tube bundle. The shell-side average outlet temperature from CFD was 53.8°C — not the design target of 50°C.

The fix was not to add more area — it was to reduce the baffle cut from 25% to 20% and add a full-circle sealing strip on alternate baffles. This reduced bypass fraction from 22% to 8%, bringing the CFD-predicted outlet temperature to 50.4°C — within 0.4°C of target. Pressure drop increased by 18%, which was within the allowable limit.

Design Variant	Oil Outlet T (°C)	Shell-side ΔP (kPa)	U-effective (W/m²·K)	Notes
LMTD design (theoretical)	50.0	–	312	Ideal, no bypass
CFD — original baffles	53.8	8.4	271	22% bypass stream
CFD — 20% cut + strips	50.4	9.9	304	8% bypass — accepted
CFD — 15% cut (over-corrected)	49.1	14.2	318	ΔP exceeds 12 kPa limit

Table 3 — CFD parametric study results: impact of baffle cut on thermal performance.

"No textbook ever showed me what maldistribution looks like in a colour contour plot. Seeing it in CFD made the entire semester of heat transfer theory suddenly click."

Activities at the Department

15–20 Jan 2024	AICTE-sponsored 6-day ATAL FDP on "AI and ML Empowerment – Shaping the Future of Mechanical Engineering" conducted. Experts from IITs, NITs, and government research organisations delivered sessions. Coordinators: Dr. Vidya Chandran and Mr. Sujith R.
18 Jan 2024	Industry Institute Interaction: Dr. Rag R L along with three S7 ME students visited WFB Baird and initiated a project on "Humidification of the Textile Plant" as part of ongoing industry collaboration.
23 Feb 2024	Department in association with ARiME conducted an invited talk by Prof. Dr. Dean Vucinic (VICORE SA, Brussels; Professor Emeritus, Vrije Universiteit Brussel) on "Electrical Sailing Ship Research & AI in Ship Life Cycle". 39 participants from ME, AU, EEE and CE departments attended. Coordinator: Dr. Vidya Chandran.
02 Mar 2024	Knowledge Sharing Program (KSP) on "Biomimicking as a Design Tool" conducted by Dr. Rag R L. 13 participants attended, including faculty from other departments.
07–13 Mar 2024	Invited talk on "Applications of Biomedicine in Engineering" by Mr. Sudhir Nair, Head – HR, AGAPPE Diagnostics. 115 students from S4 and S6 ME, students from ECE and EEE branches, and faculty of ME and AU departments attended.
28 Mar – 03 Apr 2024	ARiME conducted a Workshop on Computational Fluid Dynamics in association with the Research Cell of SSET. Resource Person: Mr. Rajesh T V, Senior R&D Engineer, FeatherDyn Pvt. Ltd. 37 students from S8 ME and 5 from S8 AU attended.
01 Apr 2024	SSET R&D Cell and IQAC, in association with the department, organized a session on "Transforming Student Project into Research Papers" for Final Year ME students. Resource Person: Dr. Varun G. Menon, Deputy Dean, SSET. 63 students from S8 ME attended.
04–10 Apr 2024	Parent–Teacher Meetings conducted for S2 (05 Apr), S4 (04 Apr), S6 (06 Apr, Online), S8 ME1 and ME2 (09 Apr, Online) with active participation of parents.
05 Apr 2024	Expert Talk by Experion Technologies organized by the Placement Cell for S6 ME students.
12 Apr 2024	Training program for Forbes Marshall, Pune organized by the Placement Cell. 14 final-year ME students attended.
18–24 Apr 2024	Placement training by Niyati Training Solutions Pvt. Ltd organized for S6 students. 48 students from S6 ME attended.
29 Apr 2024	Konfidence Aptitude Training for S6 ME students organized by the Placement Cell. 26 students attended.
30 Apr 2024	Step Up Dance Reels Competition 2024 results announced on Instagram by the Department Association. 26 students in 12 teams participated.
02–08 May 2024	FDP proposal on "Advanced Materials and Technology: From Tiny Wonders to Technology Marvels" shortlisted under the AICTE-VANI scheme. Proposed dates: 10–12 July 2024. Coordinators: Dr. Rag R L and Dr. Gibin George.



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