

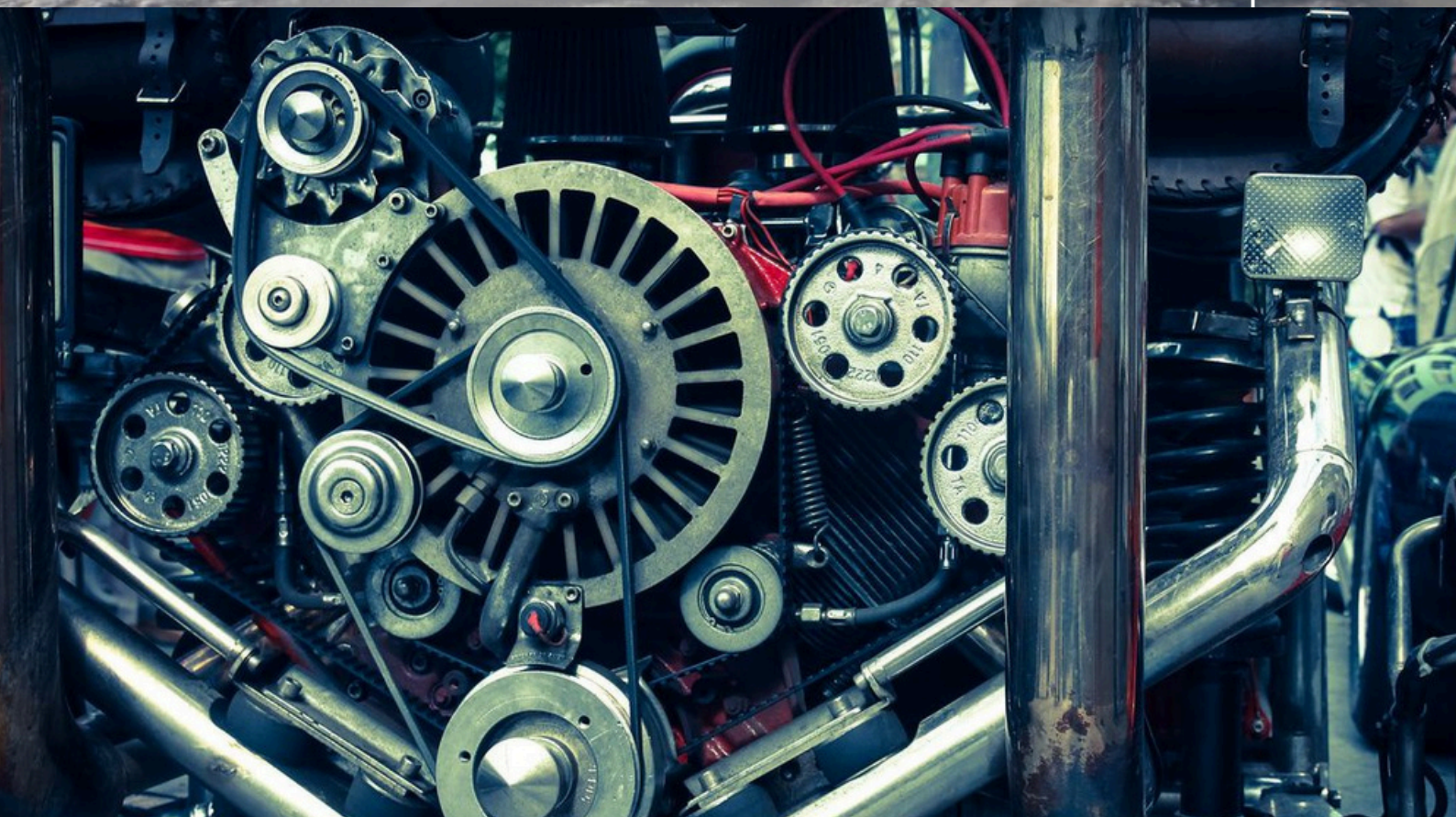


2024-2025

MECHANICAL



UNIVERSE



MECHANICAL DEPT.

Proudly Presents

**MECHANICAL
UNIVERSE**

MAGAZINE

2024–2025

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Holy Grace Polytechnic College

(Approved by AICTE | Affiliated to SBTE)

VISION OF THE INSTITUTION

To be a premier Institutions, the empowers students to excel academically, professionally and socially.

MISSION OF THE INSTITUTION

M1. Provide relevant and contemporary knowledge by facilitating Academia-industry interactions and enhancing engineering skills.

M2.Engage students for fostering value based holistic development and environment responsibility.

M3.Integrate activities to inculcate social responsibility and entrepreneurial skills.



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DEPT. OF MECHANICAL ENGINEERING

VISION OF THE DEPARTMENT

To be a centre of excellence in mechanical engineering education, producing skills, innovative, and socially responsible professionals who contribute to sustainable development and the growth of industry and society.

MISSION OF THE DEPARTMENT

M1. To provide quality mechanical engineering education by integrating modern technologies, hands on training, and industry practices.

M2.To create a culture of innvations, leadership, and environmental responsibilty so as to prepare students for real world challenges.

M3.Encourage sustainable practices and entrepreneurship to enable students to make a positive impact on society.

PROGRAM OUTCOMES

PO1: Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

PO2: Problem analysis: Identify and analyse well-defined engineering problems using codified standard methods.

PO3: Design/ development of solutions: Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

PO4: Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

PO5: Engineering practices for society, sustainability and environment: Apply appropriate technology in context of society, sustainability, environment and ethical practices.

PO6: Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

PO7: Life-long learning: Ability to analyse individual needs and engage in updating in the context of technological changes

PROGRAM EDUCATIONAL OBJECTIVES

The following PEO statements demonstrate appropriateness with the expected objectives of a diploma in mechanical engineering.

PEO 1: Exhibit strong commitment to ethical practices and professional integrity.

PEO 2: Demonstrate leadership skills in team based environments.

PEO 3: Adapt to evolving industrial and technologies challenges.



**GREETINGS
BY
MR. SANI EDATTUKARAN
GROUP CHAIRMAN, HGGI**

Dear Students, Faculty, and Esteemed Readers,

It is with great pleasure that I extend my heartfelt congratulations on the release of the latest edition of the Technical Magazine by the mechanical Department. The publication stands as a testament to the dedication, hard work, and innovative spirit of our students and faculty, and I am immensely proud to see the growing enthusiasm for excellence in the field of mechanical engineering.

May this magazine inspire you all to continue striving for excellence and to take pride in the wonderful work you are doing. Together, we will shape the future of the mechanical industry and build a world where technology and sustainability go hand in hand.

Wishing you all continued success in your endeavors!

Warm regards,



**HOLY GRACE POLYTECHNIC COLLEGE
GREETINGS**

BY

**MR. BENNY JOHN AYNIKKAL
GENERAL SECRETARY, HGCI**

Dear Students, Faculty, and Esteemed Readers,

It is with great pride and immense joy that I extend my heartfelt congratulations to the entire Mechanical Department on the successful release of the latest edition of the Technical Magazine. This achievement reflects not only your academic excellence but also your passion, creativity, and commitment to advancing the world of Mechanical engineering.

I would like to take this opportunity to acknowledge the efforts of everyone involved in bringing this magazine to life - from the contributors and editors to the supportive faculty members who have mentored and guided you. Your teamwork and dedication to this project are truly commendable.

As we continue to strive for excellence in education, I encourage you all to stay curious, stay driven, and keep exploring new horizons. The world of automobiles offers limitless opportunities, and I am confident that the future is bright for each of you as you pursue your dreams and contribute to the betterment of the industry.





**GREETINGS
BY
MR. ANTONY MALIEKAL
SECRETARY, HGPC**



Dear Students, Faculty, and Esteemed Readers,

I am delighted to extend my warmest congratulations to the Automobile Department on the release of the latest edition of your Technical Magazine. This publication is a wonderful reflection of your hard work, dedication, and the passion you bring to the field of automotive engineering.

I would like to commend everyone who has contributed to this magazine—from the writers and editors to the faculty members who have supported and guided you throughout this process. Your collective effort is a testament to the spirit of collaboration and excellence that defines our institution.

Once again, congratulations to the Automobile Department for this remarkable achievement. May this magazine inspire you all to continue striving for excellence and to make meaningful contributions to the ever-evolving field of automotive engineering.

Best regards,





**GREETINGS
BY
PROF. AS CHANDRAKANTHA
ACADEMIC DIRECTOR**

Dear Readers,

I'm thrilled to welcome you to this edition of our automobile technical magazine. The magazine serves as a valuable resource for both students and faculty, showcasing the incredible potential and ingenuity of our student body. I encourage you to continue pushing boundaries and sharing your knowledge with others.

I want to take a moment to express my sincere appreciation for your hard work and dedication in producing the latest edition of our technical magazine. Your creativity and commitment to excellence shine through in every article, project showcase, and innovative idea presented. It is inspiring to see how you have collaborated to create a platform that not only highlights your individual talents but also fosters a sense of community within our academic environment.

Thank you once again for your efforts. I look forward to seeing more of your impressive work in the future!





**GREETINGS
BY
MR. SASIKUMAR MG
PRINCIPAL**

Dear Readers,

I am excited to welcome you to this edition of our automobile technical magazine. As the automotive industry continues to evolve, staying informed about the latest advancements is more important than ever. This magazine is a valuable platform for sharing knowledge, insights, and innovations that are shaping the future of our field. I encourage our students, faculty, and industry partners to contribute their expertise and creativity, fostering a collaborative spirit that drives progress.

Let's embrace the challenges and opportunities ahead with enthusiasm and dedication. I look forward to seeing how our collective efforts will contribute to a more sustainable and innovative automotive landscape.

Thank you for being part of this journey. Best wishes,



EDITORIAL BOARD

We would like to whole heartedly thank our honourable Chairman, Mr. Benny John Aynikkal and Principal Mr. Sasikumar MG for their continuous encouragement and constant support for bringing out the magazine. We profoundly thank you Head of the Department Mr. Edwin Joy Pulikottil for encouraging and motivating us right from the beginning to complete the magazine. MECHANICAL HORIZON serves as a platform for updating and enhancing upcoming technologies in information technology. We are also grateful to all the contributions and faculty coordinator to bring this magazine.



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HEAD OF MECHANICAL DEPARTMENT, HGPC



Mr. EDWIN JOY PULIKOTTIL, M.TECH

Holy Grace Campus Keep the Gears Turning. Mechanical engineering is for the doers, the makers, and the problem-solvers. As you flip through these pages, remember that every great innovation started as a simple sketch and a lot of determination. You have the tools and the training from Holy Grace. Now, it's time to apply the torque. Be precise in your designs, resilient in your challenges, and bold in your ambitions. The your industry waiting for contributions.



ISRO INVENTIONS AT 2024

