

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

AMSCE/ME/VAC002/2019-2020

It is informed to all the students of Mechanical Engineering, it is proposed to conduct Value Added Courses on “**ADVANCES IN AUTOMOTIVE SAFETY**” (30 hours duration) offered in our campus that the course **CAD/CAM LAB** starts from 23.02.2021 to 19.03.2021. Detailed Schedule along with information for taking up this Industry based courses are shared before the commencement of the program. All the students of Mechanical Engineering are requested to follow the guidelines given to derive the maximum benefits from the resource person.

Note:

*Minimum 80 % attendance mandatory to receive the certificates.


*Assessment Test will be conducted at the end of session.

RESOURCE PERSON:


Mr.NIZAMUDEEN

ASSOCIATE TRAINEE

I3 design Technologies-Chennai.


20/02/2021
Head – Mechanical Engineering




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPET
CHENNAI 600 055



AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

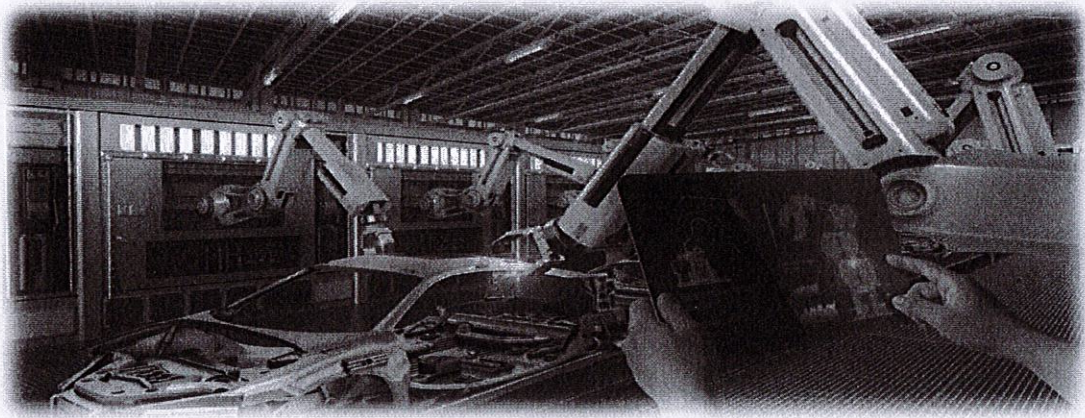


DEPARTMENT OF MECHANICAL ENGINEERING

*Organise
Value Added Course*

on

“Advances in Automotive Safety”



Course Details:

Resource Person:

Mr. M. Nizamudeen, Associate Trainee, i3 Design Technologies, Chennai.

Duration: 30Hrs

Course start: 23.02.2021 to 19.3.2021

Time: 1.00 pm to 5:00pm.

Venue: CAD/CAM Laboratory, Mechanical/Civil Block.

Contact (resource person): +91-9003298576

Course Objectives:

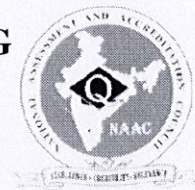
- **Comprehensive Understanding of Automotive Safety Systems:** Provide participants with an in-depth knowledge of the latest advancements in automotive safety technologies and systems. This includes studying active and passive safety features such as advanced driver-assistance systems (ADAS), collision avoidance systems, airbags, and crashworthiness. Participants will gain an understanding of how these technologies work together to enhance vehicle safety.
- **Technical Proficiency in Safety System Integration and Testing:** Develop practical skills in integrating and testing advanced automotive safety systems. Through hands-on training and laboratory exercises, participants will learn to install, calibrate, and evaluate the performance of safety technologies. They will also understand the importance of system interoperability and the methods used to test and validate safety features to ensure they meet industry standards.
- **Application of Safety Regulations and Standards:** Equip participants with the knowledge of global automotive safety regulations, standards, and testing protocols. This includes understanding the requirements set by organizations such as the National Highway Traffic Safety Administration (NHTSA) and the



PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
4VADI - IAF, MUTHAPUDUPE
CHENNAI 600 055



AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
IAF-AVADI, CHENNAI - 55
DEPARTMENT OF MECHANICAL ENGINEERING



REPORT FOR THE VALUE ADDED COURSE ON ADVANCED
AUTOMOTIVE SAFETY

Course Name: Advanced automotive safety

Date: 23/2/2021 to 19/03/2021

Time: 1.00pm to 5.00pm

Course Hours: 30

Attended Students: 30

Students Certified: 30

Objectives:

The **Advanced Automotive Safety** course is designed to provide students with an in-depth understanding of the latest developments and technologies in automotive safety. It covers both passive and active safety systems and explores the ways in which new technologies are revolutionizing the automotive industry, aiming to reduce accidents, injuries, and fatalities.

Key Topics Covered:

1. Introduction to Automotive Safety

- Overview of automotive safety principles and history.
- Regulatory frameworks and standards (e.g., NHTSA, Euro NCAP, IIHS).
- The evolution of crash testing and safety ratings.

2. Passive Safety Systems

- **Vehicle Structure and Materials:** Crumple zones, safety cell design, and materials used for impact absorption.
- **Restraint Systems:** Airbags, seatbelts, child safety systems, and energy-absorbing components.
- **Crashworthiness Testing:** Frontal, side, rear, and rollover crash testing methodologies.

3. Active Safety Systems

- **Advanced Driver Assistance Systems (ADAS):** Collision avoidance, lane-keeping assist, adaptive cruise control, and automatic emergency braking.
- **Sensor Technologies:** Radar, LiDAR, cameras, ultrasonic sensors, and their roles in safety systems.
- **Vehicle Stability and Control Systems:** Anti-lock Braking Systems (ABS), Electronic Stability Control (ESC), traction control, and rollover prevention.

4. Autonomous Vehicles and Safety

Safety challenges and regulatory issues for autonomous vehicles (AVs).



PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPE
CHENNAI 600 055

- Levels of autonomy (from Level 1 to Level 5) and their implications for safety.
 - Ethical dilemmas in AV safety, including decision-making in critical situations.
- 5. Human Factors in Automotive Safety**
- Driver behavior and its impact on safety (distraction, impairment, fatigue).
 - Cognitive load, driver assistance, and how human-computer interfaces (HCI) can improve safety.
 - The role of vehicle ergonomics in safety (e.g., seat design, visibility, dashboard layout).
- 6. Emerging Safety Technologies**
- V2V (Vehicle-to-Vehicle) and V2X (Vehicle-to-Everything) communications for crash avoidance and traffic management.
 - Smart infrastructure and vehicle-to-infrastructure safety systems.
 - The role of artificial intelligence and machine learning in predicting and preventing accidents.
- 7. Safety in Electric and Hybrid Vehicles**
- Special considerations for battery safety and electrical hazards.
 - Safety features unique to electric vehicles (EVs) and hybrids, such as battery management systems and high-voltage safety protocols.
- 8. Future Trends in Automotive Safety**
- The integration of 5G technology in connected vehicle safety systems.
 - The potential role of augmented reality (AR) and virtual reality (VR) in driver safety training and simulation.
 - The evolution of safety features in response to autonomous vehicle deployment.

Learning Outcomes:

- Understanding the fundamental principles of vehicle safety design.
- Familiarity with current and emerging safety technologies and their practical applications.
- Analyzing the impact of autonomous and connected vehicle technologies on safety.
- Evaluating the effectiveness of safety standards and regulations.
- Developing an awareness of ethical, social, and technical challenges in automotive safety.


Course Format:

- Lectures and guest talks from industry professionals.
- Hands-on simulations, crash test analysis, and lab exercises.
- Case studies of real-world accidents and safety innovations.
- Group projects and presentations focused on developing safety solutions for specific automotive scenarios.

Conclusion

This course is ideal for individuals looking to deepen their knowledge of automotive safety technologies and contribute to the future of safer transportation.




 PRINCIPAL
 AALIM MUHAMMED SALEGH
 COLLEGE OF ENGINEERING
 4VADI - IAF, NUTHAPUDUPET
 CHENNAI 600 055

From

Date: 13/02/2021

The Head of the Department
Department of Mechanical Engineering,
Aalim Muhammed Salegh college of Engineering,
Muthapudupet, Avadi, I.A.F.,
Chennai- 600 055.

To

The Principal,
Aalim Muhammed Salegh college of Engg.
Muthapudupet, Avadi I.A.F.,
Chennai - 600 055.

Sub: Requisition for the Approval to conduct Value Added Course in
Mechanical department - Regarding.

Respected Sir,

We would like to conduct a Value Added Course on the title "**Advances in Automotive Safety**" for second year mechanical students by the resource person, Mr. Nizamudeen, Associate Trainee, i3 Design Technologies, Chennai, who will be organizing the course. The scheduled date for the value added course is from 23/02/2021 to 19/03/2021. So we kindly request you to provide approval for the same.

Thanking you

Yours Faithfully

[Signature]
13/02/2021

HOD/MECH



Permitted
[Signature]
13/2/21

no

PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPE
CHENNAI 600 055

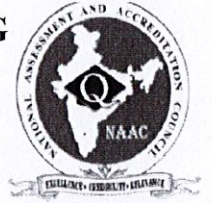


AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

IAF-AVADI, CHENNAI - 55

DEPARTMENT OF MECHANICAL ENGINEERING

Value Added Course Details



Course Name: Advances in Automotive Safety

23-02-2021 to 19-03-2021

Time: 1.00 p.m to 5.00 p.m

Week	Content	Total Hours
1	01. Introduction to vehicle crash and safety <ul style="list-style-type: none">• Active and passive safety• Physics in crash and safety• Importance of crash and safety in an average automobile• Occupant and Pedestrian safety	8
2	02 Active Safety Features <ul style="list-style-type: none">• Introduction to Active safety• Anti-lock Braking system• Stability and Traction Control• Brake assist & Emergency braking• Collision avoidance• Autonomous cruise control	8
3	03 - Passive safety Features (structure) <ul style="list-style-type: none">• Introduction• Crumple zones – Front• Crumple zones - Rear• B pillar structure and doors• Roof structure• Materials for passive safety	8
4	04 - Passive safety Features (Occupant & Pedestrian) <ul style="list-style-type: none">• Introduction• Seats and Seat belts• Driver and Passenger Airbag• Head restraint• Door trims• Pedestrian safety• Occupant monitoring	6
Total Hours		30



PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPE
CHENNAI 600 055

HOD/MECHANICAL

[Signature]
20/02/2021



AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

Approved by All India Council for Technical Education - New Delhi, Affiliated to Anna University, Chennai
NAAC Accredited Institution

"Nizara Educational Campus", Muthapudupet, Avadi - IAF, Chennai - 600 055.

ANNA UNIVERSITY COUNSELLING CODE : 1101



Value Added Course Tentative Time Table And Schedule

Value Added Course Name: Advanced in Automotive Safety

Date of Commencement: From 23/02/2021

Timing: 1.00 pm to 5:00 pm

Tentative Date of Exam- 19/03/2021

Tentative Course Schedule - 23/02/2021 to 19/03/2021 (As per following)


No. Of Days: 8

Course Hours: 30

Speaker: Mr.M.Nizamudeen

1. Module -1: Basic Engine Assembly– 23/02/2021 & 26/02/2021 – 8 hrs
2. Module -2: Engine Disassembly and Inspection – 2/03/2021 & 5/03/2021
– 8 Hours
3. Module -3: Trouble shooting and Diagnostics– 9/03/2021 & 12/03/2021
– 8 Hours
4. Module -4: Advanced Engine Assembly – 16/03/2021 & 19/03/2021
– 6 Hours




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPET
CHENNAI 600 055

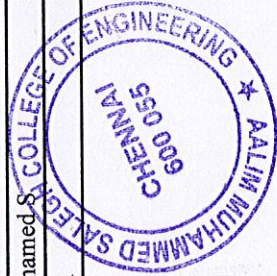
AALIM MUHAMMAD SALEGH COLLEGE OF ENGINEERING
MUTHAPUTHUPET, AVADI I.A.F., CHENNAI - 600 055.
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE ON "ADVANCES IN AUTOMOTIVE SAFETY"



STUDENTS ATTENDANCE LIST

COURSE INSTRUCTOR: M. M. NIZAMUDEEN

REG NO	NAME	03-2-24	06-2-24	2-3-24	5-3-24	9-3-24	12-3-24	16-3-24	19-3-24
110119114004	AHAMED MATHAR S	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114005	AHAMED YOUSUF HIFAZ J A	Ahmed	Ahmed	Ahmed	Ahmed	Ahmed	Ahmed	Ahmed	Ahmed
110119114009	FARISH AHAMED B	Farish	Farish	Farish	Farish	Farish	Farish	Farish	Farish
110119114010	FARITH AHAMED J	Farith	Farith	Farith	Farith	Farith	Farith	Farith	Farith
110119114013	MAHMOOD SUFYAN A S	Mahmud	Mahmud	Mahmud	Mahmud	Mahmud	Mahmud	Mahmud	Mahmud
110119114015	MOHAMED ABBAS M	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114016	MOHAMED ABDUR RAHEEM PS	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114017	MOHAMED AKMAL K A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114018	MOHAMED FAIZE A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114019	MOHAMEDFAZIL M	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114020	MOHAMED HAMDHAN S	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114021	MOHAMED IMTHEYAS ASRAF A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114023	MOHAMED JIY AUL HAQ B	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114025	MOHAMED ROSLIM	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114028	MOHAMED ZAKKARIYA S	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114029	MOHAMMAD ZUBER SK	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114030	MOHAMMED ABDULLAH RIYAS P	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114031	MOHAMMED ARAFATH M	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114034	MOHAMMED FAIZAL P	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114036	MOHAMMED MUZZAMMIL A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114037	MOHAMMED YUNUSH M	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114038	MUHAMMAD MUSHTHAQ A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114301	Abdul Malik G	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114303	Gowtham V	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114306	Khaja Ezzazudheen Ahamed F	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114307	Mohammed Nabeel H	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114308	Mohd S Farhan	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114310	Robin Edison R	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114312	Sheikh Khalid Ahamed S	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham
110119114313	Sreeman Pandi A	Moham	Moham	Moham	Moham	Moham	Moham	Moham	Moham



(Signature)
HEAD/MECH

PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUTHUPET
CHENNAI 600 055

(Signature)
PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING




i3 DESIGN™
TECHNOLOGIES
CAD/CAM/CAE


This certificate is proudly presented to


FARISH AHAMED B

In acknowledgement for completion of the Course entitled "ADVANCES IN AUTOMOTIVE SAFETY" organized by the Department of Mechanical Engineering held at Aalim Muhammed Salegh College of Engineering. Your commitment of time, energy and effort is greatly appreciated.


DATE: 13 - APRIL - 2021


Branch Manager
i3 Design Technologies
4, Jothiramalingam St,
Avadi, Chennai - 54


CO - ordinator
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55


HOD
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
4VADI - IAF, MUTHAPUDUPE
CHENNAI 600 055




i3 DESIGN™
TECHNOLOGIES
CAD|CAM|CAE

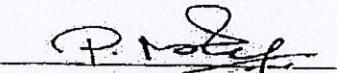
This certificate is proudly presented to


FARITH AHAMED J

In acknowledgement for completion of the Course entitled "ADVANCES IN AUTOMOTIVE SAFETY" organized by the Department of Mechanical Engineering held at Aalim Muhammed Salegh College of Engineering. Your commitment of time, energy and effort is greatly appreciated.


DATE: 13 - APRIL - 2021


Branch Manager
i3 Design Technologies
4, Jathiraimalingam St,
Avadi, Chennai - 54


CO - ordinator
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55


HOD
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, METTUPALDUPE
CHENNAI - 600 055




i3 DESIGN™
TECHNOLOGIES
CAD|CAM|CAE

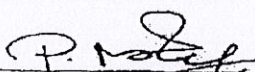
This certificate is proudly presented to

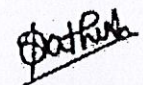
MAHMOOD SUFYAN A S

In acknowledgement for completion of the Course entitled "ADVANCES IN AUTOMOTIVE SAFETY" organized by the Department of Mechanical Engineering held at Aalim Muhammed Salegh College of Engineering. Your commitment of time, energy and effort is greatly appreciated.

DATE: 13 - APRIL - 2021


Branch Manager
i3 Design Technologies
4, Jothiramalingam St,
Avadi, Chennai - 54


CO - ordinator
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55


HOD
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHAPUDUPE
CHENNAI 600 055



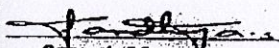
i3 DESIGN™
TECHNOLOGIES
CAD|CAM|CAE

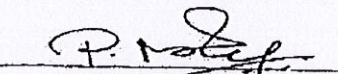
This certificate is proudly presented to

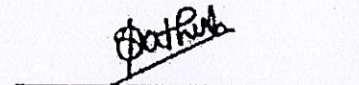
MOHAMMAD ZUBER SK

In acknowledgement for completion of the Course entitled "ADVANCES IN AUTOMOTIVE SAFETY" organized by the Department of Mechanical Engineering held at Aalim Muhammed Salegh College of Engineering. Your commitment of time, energy and effort is greatly appreciated.


DATE: 13 - APRIL - 2021


Branch Manager
i3 Design Technologies
4, Jothiramaalingam St,
Avadi, Chennai - 54


CO - ordinator
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55


HOD
Dept. of Mechanical Engineering
AMS College of Engineering
Avadi, Chennai - 55




PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - IAF, MUTHARNDUPE
CHENNAI 600 055