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Thatcham
Research

mrc malaysia
motordata research consortium sdn bhd



2024 THATCHAM 17TH - 28TH FEBRUARY UK TRAINING

GROUP 1 (12D 9N) / 9 Days Course



HRDCorp Claimable 50%

Automotive Systems and Technologies

This automotive training aims to equip individuals with the knowledge and skills necessary to perform various tasks in the automotive sector. These tasks encompass a wide range of activities, from understanding vehicle design and manufacturing to servicing and repairing vehicles. These aims include:

- Understanding of automotive systems and technologies
- Practical skills necessary to diagnose and repair automotive systems
- Develop problem-solving and critical thinking skills
- Enhance communication and teamwork skills
- Stay up-to-date on the latest automotive technologies and trends
- Automotive engineering, service and repair

GROUP 1

Technical Update

Day 1 - 3: Overview of UK Automotive Industry

Delegates gain a comprehensive understanding of new technologies, materials, and repair methods for accident damaged vehicles, ensuring the integrity of repairs.

Content Includes

- Introduction to Thatcham Research
- New Vehicle Model Update
- Current Trends in Vehicle Technology
- Headlamp Technology
- Headlamp Inspection and Diagnosis
- Theft Kit Update

Day 4 & 5 - The Technologies of ADAS

Delve into the transformative power of ADAS, recognizing their profound impact on road safety, driving comfort, and fatigue reduction. As these technologies continue to evolve, their influence on the automotive landscape will only grow stronger.

Content Includes

- Overview of ADAS Technology
- The Impact of ADAS on The Automotive Industry
- Ethical Considerations of Automated Driving
- Discussion of The Future of ADAS
- ADAS Calibrations (Static & Dynamic)

Day 6 & 7 - Hydrogen Vehicles & SRS and Trim

Understanding maintenance and repair techniques for hydrogen vehicles and best practice for removing and refitting exterior and interior trims (where SRS system components are fitted) following methods, which also includes fault-code reading, the correlation between body and SRS, and what to do upon completion of work operations.

Content Includes

- Introduction to Hydrogen Vehicles
- Safety Considerations for Hydrogen Vehicles
- Hydrogen Vehicle Maintenance and Repair
- Introduction to SRS and Trim Systems
- Hands - On SRS & Trim Repair
- SRS and Trim System Safety

Day 8 & 9 - The Importance of Pre & Post Checking

Understanding the importance of pre and post-checking, delegates will also practice code reading and wiring identification. They will get to know about the Controller Area Network (CAN Bus), which is designed to allow ECUs found in today's automobiles to communicate with each other.

Content Includes

- Introduction to Pre & Post Checks
- Introduction to Code Reading
- Introduction to Wiring Identification
- Introduction to CAN Bus
- Hyundai Nexo & Test Drive

GROUP 1

The Itinerary

The Schedule

This is the MRC travel itinerary for Group 1, which is heading to the UK for training. It includes a schedule of training theory and practice at the Thatcham Academy Centre.

DAY 1

- | | |
|----------|--|
| 8:30 AM | <ul style="list-style-type: none"> • Registration • Introduction <ul style="list-style-type: none"> ◦ Introduction to Thatcham Research |
| 10:30 AM | <ul style="list-style-type: none"> • Tea break <ul style="list-style-type: none"> ◦ Overview of the UK automotive industry ◦ Current trends in vehicle technology |
| 12:30 PM | <ul style="list-style-type: none"> • Lunch • New Vehicle Model Update <ul style="list-style-type: none"> ◦ Hands-on training with new vehicle models ◦ Discussion of safety implications of new technologies ◦ Networking with other Thatcham trainees |
| 4:30 PM | <ul style="list-style-type: none"> • Class end |

DAY 2

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|----------|---|
| 8:30 AM | <ul style="list-style-type: none"> • Introduction to Headlamp Technology <ul style="list-style-type: none"> ◦ Overview of headlamp types and technologies ◦ The different components of a headlamp system ◦ How headlamps work |
| 10:30 AM | <ul style="list-style-type: none"> • Tea break • Hands-on Headlamp Inspection and Diagnosis <ul style="list-style-type: none"> ◦ How to inspect headlamps for damage and wear ◦ How to use diagnostic tools to troubleshoot headlamp problems ◦ How to replace headlamp bulbs and other components |
| 12:30 PM | <ul style="list-style-type: none"> • Lunch • Headlamp Alignment <ul style="list-style-type: none"> ◦ The importance of properly aligned headlamps ◦ How to align headlamps using different methods ◦ Troubleshooting headlamp alignment problems • Headlamp Safety <ul style="list-style-type: none"> ◦ The importance of using the correct type of headlamp for each application ◦ How to avoid headlamp glare ◦ The importance of properly maintaining headlamps |
| 4:30 PM | <ul style="list-style-type: none"> • Class end |

DAY 3

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|----------|--|
| 8:30 AM | <ul style="list-style-type: none">• Demo and show on Headlamp & Theft Kit etc• Tea break |
| 10:30 AM | <ul style="list-style-type: none">• Advanced headlamp technologies<ul style="list-style-type: none">◦ Adaptive front lighting systems◦ Matrix beam headlights◦ Laser headlights |
| 12:30 PM | <ul style="list-style-type: none">• Lunch• The future of headlamp technology<ul style="list-style-type: none">◦ Headlamps that use OLEDs or micro-LEDs◦ Headlamps that communicate with other vehicles and infrastructure◦ Headlamps that can project information onto the road |
| 4:30 PM | <ul style="list-style-type: none">• Class end |

DAY 4

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|----------|---|
| 8:30 AM | <ul style="list-style-type: none">• Overview of ADAS technology<ul style="list-style-type: none">◦ The impact of ADAS on the automotive industry |
| 10:30 AM | <ul style="list-style-type: none">• Tea break |
| 12:30 PM | <ul style="list-style-type: none">• Lunch• Ethical considerations of automated driving<ul style="list-style-type: none">◦ Discussion of the future of ADAS |
| 4:30 PM | <ul style="list-style-type: none">• Class end |

DAY 5

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|----------|---|
| 8:30 AM | <ul style="list-style-type: none">• ADAS Calibrations (Static & Dynamic) |
| 10:30 AM | <ul style="list-style-type: none">• Tea break |
| 12:30 PM | <ul style="list-style-type: none">• Lunch• ADAS Calibrations (Static & Dynamic) continue• Q & A session |
| 4:30 PM | <ul style="list-style-type: none">• Class end |

DAY 6

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|----------|---|
| 8:30 AM | <ul style="list-style-type: none">• Introduction to hydrogen vehicles<ul style="list-style-type: none">◦ Overview of hydrogen fuel cell technology◦ Benefits of hydrogen vehicles over conventional vehicles◦ Challenges of hydrogen vehicle adoption• Tea break |
| 10:30 AM | <ul style="list-style-type: none">• Hydrogen fuel cell systems<ul style="list-style-type: none">◦ Components of a hydrogen fuel cell system◦ How hydrogen fuel cells generate electricity◦ The role of hydrogen storage in fuel cell vehicles• Safety considerations for hydrogen vehicles<ul style="list-style-type: none">◦ Properties of hydrogen gas |

- Handling and storage of hydrogen
- Emergency procedures for hydrogen leaks
- 12:30 PM • Lunch
- Hydrogen vehicle maintenance and repair
 - Routine maintenance procedures for hydrogen vehicles
 - Diagnosis and troubleshooting of hydrogen fuel cell systems
 - Repair of hydrogen fuel cell components
- Hydrogen refueling infrastructure
 - Types of hydrogen refueling stations
 - The refueling process for hydrogen vehicles
 - The future of hydrogen refueling infrastructure
- Case studies of hydrogen vehicle applications
 - Examples of hydrogen vehicles in use today
 - The potential for hydrogen vehicles to decarbonize transportation
 - The future of hydrogen vehicles
- 4:30 PM • Class end

DAY 7

- 8:30 AM • Introduction to SRS and Trim Systems
 - Overview of the SRS and trim systems
 - Components of the SRS and trim systems
 - Function of the SRS and trim systems
- 10:30 AM • Tea break
- SRS Deployment and Troubleshooting
 - Factors that can cause SRS deployment
 - Troubleshooting SRS deployment issues
 - SRS diagnostic tools and procedures
- Trim Repair and Replacement
 - Common trim repair techniques
 - Trim replacement procedures
 - Trim materials and their properties
- 12:30 PM • Lunch
- Hands-on SRS Repair
 - Repair of a simulated SRS deployment
 - Replacement of SRS components
 - Calibration of SRS systems
- Hands-on Trim Repair
 - Repair of common trim damage
 - Replacement of trim components
 - Installation of trim accessories
- SRS and Trim System Safety
 - Importance of proper SRS and trim installation
 - Hazards associated with SRS and trim systems
- 4:30 PM • Class end

DAY 8

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|----------|--|
| 8:30 AM | <ul style="list-style-type: none">• Introduction to pre & post checks<ul style="list-style-type: none">◦ Importance of pre & post checks◦ Types of pre & post checks◦ Tools and equipment required for pre & post checks |
| 10:30 AM | <ul style="list-style-type: none">• Tea break• Hands-on pre & post checks practice<ul style="list-style-type: none">◦ Perform pre & post checks on a real vehicle◦ Identify potential problems and troubleshoot them• Introduction to code reading<ul style="list-style-type: none">◦ What is code reading?◦ How to use a code reader◦ Interpreting error codes• Hands-on code reading practice<ul style="list-style-type: none">◦ Use a code reader to diagnose a problem on a real vehicle◦ Interpret the error codes and troubleshoot the problem |
| 12:30 PM | <ul style="list-style-type: none">• Lunch• Introduction to wiring identification<ul style="list-style-type: none">◦ Basic principles of electricity◦ Types of wires and their uses◦ How to identify wires using a wiring diagram• Hands-on wiring identification practice<ul style="list-style-type: none">◦ Identify wires using a wiring diagram◦ Trace wires from one point to another• Introduction to CAN bus<ul style="list-style-type: none">◦ What is CAN bus?◦ How CAN bus works◦ Troubleshooting CAN bus problems• Hands-on CAN bus troubleshooting practice<ul style="list-style-type: none">◦ Use a CAN bus diagnostic tool to troubleshoot a problem on a real vehicle◦ Interpret the CAN bus data and troubleshoot the problem |
| 4:30 PM | <ul style="list-style-type: none">• Class end |

DAY 9

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| 8:30 AM | <ul style="list-style-type: none">• Introduction to Hyundai Nexso• Safety overview• Charging and refuelling infrastructure |
| 10:30 AM | <ul style="list-style-type: none">• Tea break |
| 12:30 PM | <ul style="list-style-type: none">• Lunch• Test drive• Q&A session |
| 4:30 PM | <ul style="list-style-type: none">• Wrap-up |