



ROAD ENGINEER INDUCTION SERIES

SERIES 2 :

VIRTUAL HALF-DAY SEMINAR ON ROAD GEOMETRIC DESIGN

Date : 25th July 2024
Time: 09.00 AM – 01.00 PM
Speaker: Ir. Azizul Hawari

BEM Approved CPD: 4 Hours
Ref. No.: IEM24/HQ/242/S (w)

	ONLINE (Log-in for registration & payment: www.myiem.org.my/member/login.aspx)	NORMAL FEE (by fax & email) Payment by cash, credit card and bank-in
IEM Student Member	40.00	50.00
IEM Graduate Member	75.00	90.00
IEM Corporate Member	125.00	150.00
Non-IEM Member	240.00	300.00

Organized by:
Highway and Transportation Engineering Technical Division (HTETD), IEM

Cancellation Policy

No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with 7 days prior notification and substitute will be charged according to membership status.

Personal Data Protection Act

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at <http://www.myiem.org.my> and I agree to IEM's use and processing of my personal data as set out in the said notice.

**"IEM reserves the right to alter or cancel the programme due to unforeseen circumstances at its discretion".
For intending participants who choose to 'walk in without prior registration',
IEM SHALL NOT be responsible for any direct or consequential losses**

SPEAKERS



Ir. Azizul bin Hawari, a registered Professional Engineer with Practicing Certificate (PEPC) with Board of Engineer Malaysia. He graduated from Universiti Teknologi PETRONAS (UTP) with a Bachelor of Engineering Civil. He has 15 years' experience in construction (building and water pipeline) and design (highway). Currently working as Design Manager (C&S) under HSS Integrated Sdn Bhd, Delivery Management Office (DMO) at Northern Corridor Economic Region (NCER) Office, Bukit Minyak, Pulau Pinang.

As an experienced engineer with a robust background in the civil engineering industry, he has developed and honed a diverse set of skills and a deep understanding of various aspects of engineering projects over the years. His professional journey is marked by significant contributions to a range of projects, demonstrating his expertise and leadership in the field.

He is specialised in highways engineering and has a successful track record of managing numerous highway projects to ensure safety, sustainability, and required performance standards. He involves in Persiaran Mokhtar Dahari, MEX 2 Project, Roads and Highway Parts of East Coast Rail Link (ECRL) Project, PJD Link Project and Pan Borneo Sabah Project.

He possesses strong leadership qualities and excellent communication abilities, successfully mentoring junior engineers and fostering a collaborative and innovative working environment. His ability to clearly articulate project goals and progress to clients, team members, and other stakeholders has been a key factor in the successful delivery of many projects. With a solid foundation in both practical engineering and project management, he is committed to advancing infrastructure development and contributing to the ongoing success of the civil engineering industry.

TENTATIVE PROGRAMME

Time	Programme
9:00 AM – 9:05 AM	Welcoming remark by IEM representative
9:05 AM – 11:00 AM	Horizontal, Vertical and Typical Crosssection
11:00 AM – 11:05 AM	Break 5 minutes
11:05 AM – 01:00 PM	At-grade Intersection, Interchange and Sight Distance Considerations.

*** IEM reserves the right to postpone, reschedule, allocate, or cancel the course**

SYNOPSIS

This seminar intends to give aspiring civil engineering students, fresh graduates or junior road engineers an overview of the planning, design and layout of a roadway's visible features to ensure safe, efficient, and comfortable traffic movement. The effective road geometric design enhances safety, efficiency, and driver comfort while mitigating environmental impacts.

The key components of road geometric design include horizontal alignment, vertical alignment, cross-sectional elements, intersections, and sight distance considerations.

Key Components of Road Geometric Design:

- 1) **Horizontal Alignment:**
 - Curves: Design of curves to ensure smooth transitions between straight sections of the road. Includes circular curves, transition curves, and superelevation (banking of curves) to help vehicles navigate turns safely.
 - Tangents: Straight sections of the road connecting curves. Proper design ensures minimal abrupt changes in direction, improving driver comfort and safety.
- 2) **Vertical Alignment:**
 - Gradients: Slopes of the road along its longitudinal profile. Optimal gradients are designed to balance construction costs and vehicle operational efficiency.
 - Vertical Curves: Smooth transitions between different gradients, including crest (convex) and sag (concave) curves. These are critical for maintaining visibility and vehicle control.
- 3) **Typical Cross-Sectional Elements:**
 - Lanes: Width and number of lanes, which are determined based on traffic volume and vehicle types.
 - Shoulders: Additional space on the side of the lanes for emergency stops and to provide structural support to the pavement.
 - Medians: Dividers between opposing traffic lanes enhance safety by reducing head-on collisions.
 - Side Slopes and Drainage: Design of side slopes and drainage systems to manage water runoff and prevent erosion.
- 4) **Intersections and Interchanges:**
 - Intersection Design: Layout of intersections to manage traffic flow, including turning lanes, signalization, and pedestrian crossings.
 - Interchange Design: Complex junctions connecting different roadways, often incorporating ramps and bridges to facilitate traffic movement without direct cross traffic.
- 5) **Sight Distance Considerations:**
 - Stopping Sight Distance (SSD): The minimum distance required for a driver to see an obstacle on the road and stop safely.
 - Passing Sight Distance (PSD): The minimum distance required for a driver to safely overtake another vehicle.
 - Decision Sight Distance (DSD): Additional distance required for drivers to detect unexpected changes or hazards and make appropriate decisions.

Importance of Road Geometric Design:

- 1) **Safety:** Proper geometric design minimizes the risk of accidents by ensuring adequate visibility, smooth transitions, and appropriate space for vehicle operations.
- 2) **Efficiency:** Well-designed roads facilitate smooth traffic flow, reducing travel time and vehicle operating costs.
- 3) **Comfort:** Enhances driver and passenger comfort by minimizing abrupt changes in alignment and grade.
- 4) **Environmental Impact:** Incorporates sustainable practices, such as proper drainage and erosion control, to mitigate environmental impacts.

In summary, road geometric design is a critical aspect of civil engineering that focuses on the physical characteristics of a road. It ensures that roads are safe, functional, and efficient for all users.

REGISTRATION FORM

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No	Name(s)	Membership No.	Grade	Fee (RM)
SUB TOTAL				
+ 8% SST				
TOTAL PAYABLE				

PAYMENT DETAILS :

FULL PAYMENT must be settled before commencement of the seminar, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participant fails to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non refundable. The Registration Fee includes lecture notes, refreshment and lunch.

For **ONLINE REGISTRATIONS**, please note that payment **MUST** be made **BEFORE** the closing date. If payment is not received within the stipulated time, the registration the registration automatically cancels..

Contact Person : _____ Designation : _____

Name of Organization : _____

Address : _____

Telephone No. : _____ (O) Fax No : _____ (O)

Handphone : _____ (HP) Email: _____

Signature & Stamp

Date

TERMS & CONDITIONS:

- For ONLINE REGISTRATIONS, only ONLINE PAYMENT is applicable [via RHB and Maybank2u – Personal Saving & Personal Current ; Credit Card - Visa/Master.
- Payment via CASH / CHEQUE / BANK-IN TRANSMISSION / BANK DRAFT / MONEY ORDER / POSTAL ORDER / LO / WALK -IN will be considered as NORMAL REGISTRATION
- The Organising Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment

FOR FURTHER DETAILS, KINDLY CONTACT:

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