TIME LIMIT

Government of Maharashtra

No. Misc -1111/(182/18)/T E-2
Higher & Technical Education Department,
Madam Cama Road, Hutatma Rajguru Chowk,
Mantralaya, Mumbai-400 032
Date: - 10/10/2018

To,

Director,
Directorate of Technical Education,
Mahapalika Marg, Mumbai -400001

Sub: Workshop in MMRDA to discuss 'Role of Engineering Colleges in inclusion of Metro domain topics in engineering degree curriculum'.

Government of Maharashtra through **MMRDA** has prepared 'Metro Master Plan' for Mumbai to provide a rail based mass transit facility to people residing in the areas that are not connected by existing Suburban Rail System so as to enable them to reach the stations within the distances of ½ to 1 km. Metro network planned in Mumbai consists of 12 corridors with route length of 276 km's. Which will be executed in next 4-5 years period using state of art metro technology. The project aims at meeting the ever growing transportation need of Mumbai and it is expected that on completion, ***around 60 lakh passengers will be using the network every day.*** Similar metro projects in the state of Maharashtra are coming up in the city of Nagpur, Pune etc as well.

The works in any Metro system require high level of technical skills particularly in the field of railway engineering of different domains. All over the world, functioning of the Metro system is developing fast involving latest engineering and automation tools like Artificial intelligence and Data analytics. In order to keep pace with the development elsewhere in the world, India also needs to develop manpower for this industry.

Functioning of Metro system involves specialisation in **metro rail engineering** in following fields in general:

1. ***Rolling stock (Electric Multiple Units)***
2. ***Electric traction system (25 KV AC/1500 V DC/750 DC Third rail etc)***
3. ***Signalling and Train controls (based*** *on modern Communication Based Train Control Systems, Automatic fare collection etc).*
4. ***Railway track.***
5. ***Civil engineering works u Tunnelling and elevated via duct.***
6. ***Tunnel ventilation & Environment Control systems.***
7. ***Use of Elevators/escalators.***
8. ***Illumination design and HVAC system.***
9. ***Operation & maintenance of metro trains in depot/workshop.***
10. ***Use of Green energy.***
11. ***OCC based on Cloud computing and data analytics.***
12. ***Use of Internet of Things (IoT) in Asset management.***
13. ***Security controls in metro system using video-analytics.***

It is also to bring out that demand in metro sector is going to increase exponentially in the country. However, it is felt that executives joining in metro department are, though having

engineering degree in Civil, Electrical/Electronic disciplines, do not have exposure to above metro domains. As a result, they require to be trained first to make them ready for taking up project works. At times, Metro projects have to depend on Consultants from abroad due to lack of expertise in Metro System components in India.

To save extra time consumed in post recruitment training and to minimise dependence on Consultants, it is felt that *Engineering Colleges can play an important role by including suitable topics in the curriculum of degree courses itself for 3rd and 4th year engineering students.* To begin with, MMRDA has proposed that Engineering colleges (in state of Maharashtra) can include **Elective subjects on Metro Engineering topics** as indicated above in the Degree syllabus of Electrical, Civil, Mechanical and Electronics & Telecommunication disciplines in pre-final/final year of degree course. This will give budding engineering graduates enough exposure to upcoming metro technology from college level itself and will help upcoming Metro projects in the state of Maharashtra in particular and other states in general. As a motivation for including these subjects, MMRDA can plan visit to IIT/State engineering colleges for campus interviews for recruitment of engineers.

In this regard, **MMRDA plans to conduct Workshop to discuss role of Engineering Colleges in getting talent to gainfully utilise in Metro projects** where **advance technology** is required to be used in the country. This workshop will be inaugurated by Hon'ble Chief Minister and date of workshop will be conveyed separately by MMRDA.

You are hereby directed to inform about this workshop to ***all Autonomous Institutes / Government and Aided engineering colleges as well as reputed unaided engineering institutes and ensure that at least 100 active representatives participation*** in the forthcoming workshop. You are further directed to communicate list of confirmed participants within a week to Mr R.K.Sharma, Director/System/MMRDA (mail Id ds@mailmmrda.maharashtra.gov.in and Contact no 022-26590085/+91-9769907540) so that MMRDA can send invitations.

Yours,

(Prakash B. Avhad)
Section Officer, Govt. of Maharashtra.

Copy Forwarded for information to:-

1. Registrar, of all Non-Agricultural Universities
2. Registrar, Dr. Babasaheb Ambedkar Technological University, Lonere, mahad Dist. Raigad.
3. Registrar, Institute of Chemical Technology, Matunga, Mumbai-19
4. Dean, IIT Mumbai, Powai, Mumbai
5. Mr R.K.Sharma, Director/System/MMRDA