CERTIFICATION PROGRAM

TUNNEL ENGINEERING

IN ASSOCIATION WITH
MONTAN UNIVERSITÄT
LEOBEN, AUSTRIA

First Time In India

MAHARASHTRA ACADEMY OF ENGINEERING AND EDUCATIONAL RESEARCH (MAEER’s)
MIT PUNE
ABOUT MAEER’s MIT

MAEER is a premium engineering education group established in 1983 in Maharashtra with an objective of promoting the culture of peace through value based education. We are successfully imparting education to thousands of students from our sixty four institutions across India.

MAEER’s Maharashtra Institute of Technology (MIT) Group of Institutions, Pune, India, is a multi campus and multi disciplinary organization offering university approved academic programs in engineering, management, pharmacy, medicine and politics & governance. MIT is ranked 27th in India and 8th amongst three thousand five hundred private engineering colleges in India.

ABOUT MONTANUNIVERSITAET, AUSTRIA

The Montanuniversitaet, located in Leoben, Austria was established in 1840. The research portfolio of The Montanuniversitaet comprises of the value added life cycle, starting with the exploration and extraction of raw materials, followed by fields such as metallurgy, high performance materials, process and production engineering and complimented by environmental engineering and recycling.

Montan University has world renowned expertise in the field of tunneling and is a pioneer of New Austrian Tunneling Method (NATM). It is the most popular method of tunnel design and construction world wide.

NEED FOR TUNNELING EXPERTISE

Liberalisation of government regulations and a deliberate strategy of developing infrastructure within India spells a large opportunity for Engineering & Construction companies. Tunnels are a vital element of transport infrastructure, which is high on the development agenda to help accelerate the Indian economy.

The pace of infrastructure development in India itself is estimated to accelerate in the next 5 years, ensuring that India remains one of the fastest growing tunnel markets in the world. There are over 500 tunnel projects in the pipeline covering a total of 1500 kms and entailing a total investment of over INR 7,50,000 crores.

There is a countinuously increasing demand for qualified tunnel engineers with specialised tunnel specific expertise in India and abroad.
The New Austrian tunneling method (NATM), also known as sequential excavation method (SEM), is a popular method of modern tunnel design and construction. The fundamental difference between this new method of tunneling, as opposed to earlier methods, comes from the economic advantages made available by taking advantage of the inherent geological strength available in the surrounding rock mass to stabilize the tunnel. NATM has helped revolutionise the modern tunneling industry and many of the most famous modern tunnels have used this excavation technique.

**ACADEMICS**

Program Contents

1. Engineering investigations for soil, water and rock
2. Tunneling methods in soft and hard strata
3. Tunnel layout planning, design, economics and safety
4. Numerical analysis and tunnel instrumentation
5. Construction site planning, risks and contract management

**INTERNERSHIP**

State of the art curriculum designed and facilitated by international faculty with expertise in latest tunneling processes and technology

Gauranteed internships with our infrastructure partners on live, onsite international projects along with on the job mentoring
Prof. Robert Galler
Head of Subsurface Engineering Department at Mountan University Leoben, Austria

He is also Head of the Department of “Zentrum am Berg”, a 1:1 scale underground research and development center as well as training and education center for all aspects of underground structures. He is authority in Designing of Tunnels and especially New Austrian Tunneling Method.

Andreas Beil,
CEO, D2 Consult International GmbH, Austria

Civil engineer with Professional Engineer licence and more than 30 years working experience. D2 Consult International GmbH is an Austrian consulting company with the focus on tunnelling and geotechnics. As tunnel expert he was involved in several large infrastructure projects worldwide (e.g. in Austria, Chile, China, Colombia, Germany, India, Qatar, Saudi Arabia, Turkmenistan, Ukraine, Venezuela). He is co-author of several articles published in international magazines and proceedings of international conferences.

Shyamkant Dharmadhikari
Advisor for Bridges & Tunnels, National Highways and Infrastructure Development Corporation LTD.

He has served as Executive Vice President at Hindustan Construction Co. Ltd. Functioned as Project Controller for several projects including Highways, Tunnels, Bridges, Hydel Power Plants etc. He has vast experience of construction of tunnels and underground structures. He has passion to guide the new generation of engineers by sharing his experiences during his illustrious career of more than 42 years.

Proposed Advisory Board

1. Prof. Robert Galler, Montan Universitaet, Leoben, Austria
2. Mr. Andreas Beil, Managing Director, D2 Consult International, Linz, Austria
3. Mr. M.R. Moorthy, Group Director, PEMS Engineering, Gurgaon, India
4. Mr. Prasanna Gode, Swen Consult, Mumbai
5. Mr. S.K. Dharmadhikari, Ex-Vice President, Hindustan Construction Company
6. Prof. Dr. L.K. Kshirsagar, Principal, MIT, ONGC Chair Professor, Geologist
7. Prof. Dr. Prasad Khandekar, Convener Vice Principal, MIT, Pune
8. Mr. Anand Kumar, MD, NHIDC
9. Mr. Sanjay Gupta, CMD, Kokan Railway
10. A.K. Khandelwal, Sr. Officer - IVRC
11. Mr. Satish G. Paretkar, Executive Vice President, AFCONS

In Consultation with:

- National Highways & Infrastructure Development Corporation Limited
- Ministry of Railways
- Ministry of Road Transport
- National Highways Authority of India
- Border-Roads Organisation
- Konkan Railway

Address: Maharashtra Institute of Technology, Paud Road, Kothrud, Pune- 411038
Contact: 77209 70123/ 98904 36536 | Email: tunnel@mitpune.edu.in | Web: http://www.mitpune.com
State of art training at world renowned training center “Zentrum am Berg” (ZaB), Austria

“Zentrum am Berg” (ZaB) meaning ‘Center on the Mountain’ is situated near Motan University, Leoben at 1100 meters above sea level. ZaB is world renowned 1:1-scale underground training and education center for all aspects of tunnel engineering. This is a unique infrastructure for scientific and applied research about the construction and operation of tunnel systems - with real underground conditions and latest equipment and machinery. There are five tunnels at this center which facilitate the state of art ‘hands on training’ for testing, design, construction operations and safety measures of tunnels. Prof. Robert Galler is Head of the Department of “Zentrum am Berg” also. He himself will train the participants of our Tunneling Program in this unique training center.
Schedule for Tunnel Engineering
Course Commencement: 3rd July 2017, MIT Pune
Course Conclusion: 20th October 2017, Montan University Leoben Austria

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Activity</th>
<th>Date</th>
<th>Faculty</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Course Registration*</td>
<td>July 3, 2017</td>
<td>Indian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>2.</td>
<td>Course Introduction &amp; Inauguration*</td>
<td>July 4, 2017</td>
<td>Indian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>3.</td>
<td>Module 1</td>
<td>July 5 to 8, 2017</td>
<td>Austrian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>4.</td>
<td>Module 2, 3, 4</td>
<td>July 10 to Aug. 04, 2017</td>
<td>Indian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>5.</td>
<td>Module 5 a</td>
<td>August 7 to 11, 2017</td>
<td>Industry Presentations</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>6.</td>
<td>Module 5 b</td>
<td>August 14 to 18, 2017</td>
<td>Case Study</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>7.</td>
<td>Evaluation</td>
<td>August 21 to 25, 2017</td>
<td>Indian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>9.</td>
<td>Internship 1</td>
<td>Sept. 4 to 25, 2017</td>
<td>Indian</td>
<td>India</td>
</tr>
<tr>
<td>10.</td>
<td>Internship Evaluation</td>
<td>Sept. 27 to 29, 2017</td>
<td>Indian</td>
<td>MIT Pune</td>
</tr>
<tr>
<td>11.</td>
<td>Internship 2</td>
<td>October 2 to 19, 2017</td>
<td>Austrian</td>
<td>Austria</td>
</tr>
</tbody>
</table>

*: Includes reporting and Registration of candidates, Campus tour, Overview of internship program (Indian as well as Austrian), travel details for international internship, Rules and Regulations of the institute
@: Includes overview of the syllabus, profile of the faculty members, course conduct and evaluation rules, Formal inauguration programme at MIT Pune on July 4, 2017 (evening).

Eligibility
Eligibility for participants of the tunneling program: Bachelor of Civil Engineering. Candidates with field experience of one or more years will be preferred.

Fee Structure
Program fee is Rs 2,10,000 + Taxes. This fee does not include the cost of travel and stay in Austria and India.

Outcome Of The Program
After successful completion of the program the participant will gain state of art knowledge and skills required to design a tunnel economically and supervise its construction effectively.

Career Opportunities
Immense job opportunities are available in Government Organisations, Contracting Firms and Project Management Consultants in India and abroad.