

**INDIAN TECHNICAL AND ECONOMIC COOPERATION (ITEC)  
AND  
SPECIAL COMMONWEALTH ASSISTANCE FOR AFRICA PROGRAMME (SCAAP)**

Training of foreign national in India is an important component of the Indian bilateral cooperation programmes. The training programme covered under the ITEC and SCAAP aim at development of Human resources and Institutional Infrastructure. Both the ITEC and SCAAP programmes are fully funded by the Government of India on a grant basis. Every year more than 4000 foreign nationals from more than 90 countries are trained in leading Indian Institutions under the two programmes.

**1. PROCEDURE:**

1. Officials of the Government, Public Enterprises, Universities and Chamber of commerce and Industries are eligible to apply for scholarships under ITEC & SCAAP. All the applications must be duly filled in and the applicants must be nominated by the authorized officials of the foreign governments who will then send them to the Indian Embassies and High Commissions. Such requests need to be routed through the concerned Indian Mission keeping in mind the period required for designing an appropriate programme.
2. Under this Scholarship scheme to the extent possible, cost of International Travel, Tuition fees, Medical & Health care, Living & Book allowances is borne by the Ministry of External Affairs, Government of India. The ultimate decision for granting scholarships rest with the Ministry of External affairs.

**For further details,**

**please visit mea WEBSITE: <http://itec.nic.in>**

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**Name and details of courses proposed**

Sl. No.	Name of the course	Qualification required	Duration (weeks)	Period		Maximum number of seats	Minimum number of seats
				From	To		
1	Management Development Program	University Diploma/ Degree	4 weeks	*	*	25 Nos	20 Nos
2	Railway Track Technology	Degree/ Diploma in Civil Engg	6 weeks	*	*	25 Nos	20 Nos
3	Diesel Locomotive Technology	Degree/ Diploma in Mech. Engg.	6 weeks	*	*	25 Nos	20 Nos
4	Professional Course on Railway Signal Engg & Telecom	Degree/ diploma in Mech/ Elect/ Electronics Engg.	6 weeks	*	*	25 Nos	20 Nos

\*Dates yet to be finalized.

**COURSE CONTENTS FOR ITEC PROGRAMMES**

**1. Management Development Programme**

<ul style="list-style-type: none"> <li>✚ <b>CORPORATE BUSINESS ECONOMY:</b> <ul style="list-style-type: none"> <li>◆ Transport Environment</li> <li>◆ Vision/Mission</li> <li>◆ Organizational Culture and future mapping</li> </ul> </li> <li>✚ <b>FINANCIAL MANAGEMENT ON THE RAILWAYS</b> <ul style="list-style-type: none"> <li>◆ Corporate and Project Finance</li> <li>◆ Budgeting</li> <li>◆ Asset Acquisition</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✚ <b>CUSTOMER RELATION MANAGEMENT</b></li> <li>✚ <b>DECISION MAKING</b></li> <li>✚ <b>COMMUNICATION</b></li> <li>✚ <b>NEGOTIATION</b></li> <li>✚ <b>HUMAN RESOURCE DEVELOPMENT</b></li> <li>✚ <b>PERSONAL EFFECTIVENESS</b></li> </ul>
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**2. TRACK TECHNOLOGY**

<ul style="list-style-type: none"> <li>✚ Rail, rail welding, welded track (including New SEJ) LWR on bridges, FRP sleeper</li> <li>✚ USFD, Rail &amp; weld failures and remedial measures</li> <li>✚ Glued and Insulated joints</li> <li>✚ Ballast and sub-ballast, formation treatment, Ballast less track</li> <li>✚ Track stresses and failure analysis of rail/welds, track standards and criteria for track renewals</li> <li>✚ Points and crossings, new design including fan-shaped layout, Layout calculations</li> </ul>	<ul style="list-style-type: none"> <li>✚ Concrete sleepers for plain track and points &amp; crossings</li> <li>✚ Elastic Fastenings</li> <li>✚ Track Machines</li> <li>✚ Curves, Use of computer program for realignment</li> <li>✚ Track Monitoring and use of results in maintenance planning, track tolerances etc.</li> <li>✚ Yard layouts</li> <li>✚ New rolling stock</li> <li>✚ Higher Axle Loads</li> <li>✚ Safety at Work sites</li> </ul>
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**3. DIESEL LOCOMOTIVE TECHNOLOGY**

<ul style="list-style-type: none"> <li>✚ AAR classification</li> <li>✚ Automatic transition regulation</li> <li>✚ Bimetal and tri-metal bearings – defects, inspection and</li> </ul>	<ul style="list-style-type: none"> <li>✚ Excitation control, Dynamic brake</li> <li>✚ Expresser and air circuits</li> <li>✚ Inspection and maintenance</li> <li>✚ Locomotive brake systems</li> </ul>
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<ul style="list-style-type: none"> <li>✚ maintenance</li> <li>✚ Brake rigging</li> <li>✚ Combustion process and valve timing diagram</li> <li>✚ Component details</li> <li>✚ Cooling water and charge air including details of important system components</li> <li>✚ DC generators and DC motors</li> <li>✚ Design</li> <li>✚ Diesel engine – Assembly</li> <li>✚ Diesel engine systems – Fuel oil</li> <li>✚ Draw and buffing gear</li> <li>✚ Electrical control components</li> <li>✚ Engine governor – GE and Woodward</li> <li>✚ Engine starting and speed control – circuit analysis</li> </ul>	<ul style="list-style-type: none"> <li>✚ Locomotive layout</li> <li>✚ Lube oil</li> <li>✚ Manufacture</li> <li>✚ Need for transmission and their types with merits and demerits</li> <li>✚ Principle of electric transmission</li> <li>✚ Properties of fuel and lube oil with testing procedures</li> <li>✚ Safety devices</li> <li>✚ Testing of locomotives</li> <li>✚ Under – frame – bogie, suspension</li> <li>✚ Wheel axle</li> </ul>
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#### 4. PROFESSIONAL COURSE ON RAILWAY SIGNAL ENGINEERING AND TELECOMMUNICATIONS

<ul style="list-style-type: none"> <li>✚ Basic concept of signaling</li> <li>✚ Principles of interlocking</li> <li>✚ Orthodox signaling</li> <li>✚ Double wire signaling</li> <li>✚ Electrical signaling – Relays</li> <li>✚ Block signaling – Introduction</li> <li>✚ Train detecting devices – DC Track circuits &amp; AFTC</li> <li>✚ Train detective devices – Axle Counters</li> <li>✚ Electrical Signalling Equipments, colour light signals, misc. equipments and circuits.</li> <li>✚ Relay interlocking – British system</li> <li>✚ Modern Signalling – Electronics Interlocking System</li> </ul>	<ul style="list-style-type: none"> <li>✚ Modern Signalling – Data Logger, AWS etc.</li> <li>✚ Relay interlocking – Siemens System</li> <li>✚ Signalling in General – Safety and Accidents</li> <li>✚ Electrical Signalling – British practices/ Siemens</li> <li>✚ Accidents case studies</li> <li>✚ Passenger Information systems</li> <li>✚ Multiplexing-Digital (SDH) &amp; Equipment</li> <li>✚ Control Communication</li> <li>✚ Mobile Train Radio Communication</li> <li>✚ Optic fibre Cable &amp; Systems, Sources, Detections, laying practices</li> <li>✚ Disaster Management (Communication Support)</li> </ul>
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**LIST OF COUNTRIES COVERED UNDER ITEC.**

S.No.	Country	S.No.	Country
1	Afghanistan	44	Egypt
2	Albania	45	El-Salvador
3	Algeria	46	Equatorial Guinea
4	Angola	47	Eritrea
5	Anguilla	48	Estonia
6	Antigua and Barbuda	49	Ethopia
7	Argentina	50	Fiji
8	Armenia	51	Gabon
9	Azerbaijan	52	Georgia
10	Bahamas	53	Grenada
11	Bahrain	54	Guatemala
12	Bangladesh	55	Guinea
13	Barbados	56	Guinea Bissau
14	Belarus	57	Guyana
15	Belize	58	Haiti
16	Benin	59	Honduras
17	Bhutan	60	Hungary
18	Bolivia	61	Indonesia
19	Bosnia - Herzogovina	62	Iran
20	Brazil	63	Iraq
21	Brunei Darussalam	64	Ivory Coast
22	Bulgaria	65	Jamaica
23	Burkina Faso	66	Jordan
24	Burundi	67	Kazakhstan
25	Cambodia	68	Kiribati
26	Cape Verde Island	69	Korea(DPRK)
27	Cayman Island	70	Kyrgyzstan
28	Central African Republic	71	Laos
29	Chad	72	Latvia
30	Chile	73	Lebanon
31	Colombia	74	Liberia
32	Commonwealth of Dominica	75	Libya
33	Comoros	76	Lithuania
34	Congo	77	Macedonia
35	Costa Rica	78	Madagascar
36	Croatia	79	Malaysia
37	Cuba	80	Maldives
38	Czech Republic	81	Mali
39	Democratic Republic of Congo	82	Marshall Islands
40	Djibouti	83	Mauritania

41	Dominican Republic	84	Mexico
42	East Timor	85	Micronesia
43	Ecuador	86	Moldova
S.No.	Country	S.No.	Country
87	Mongolia	114	Slovak Republic
88	Montenegro	115	Solomon Island
89	Montserrat	116	Sri Lanka
90	Morocco	117	St. Kitts & Nevis
91	Myanmar	118	St. Lucia
92	Nauru	119	St. Vincent & Grenadines
93	Nepal	120	Sudan
94	Nicaragua	121	Suriname
95	Niger	122	Syria
96	Oman	123	Tajikistan
97	Palau	124	Thailand
98	Palestine	125	Togo
99	Panama	126	Tonga
100	Papua New Guinea	127	Trinidad & Tabago
101	Paraguay	128	Tunisia
102	Peru	129	Turkey
103	Philippines	130	Turkmenistan
104	Poland	131	Turks & Caicos Island
105	Qatar	132	Tuvalu
106	Republic Of Sao Tome	133	Ukraine
107	Romania	134	Uruguay
108	Russia	135	Uzbekistan
109	Rwanda	136	Vanuatu
110	Samoa	137	Venezuela
111	Senegal	138	Vietnam
112	Serbia	139	Yemen
113	Singapore		

## **LIST OF COUNTRIES COVERED UNDER SCAAP**

1. Botswana
2. Cameroon
3. Gambia
4. Ghana
5. Kenya
6. Lesotho
7. Malawi
8. Mauritius
9. Mozambique
10. Namibia
11. Nigeria
12. Seychelles
13. Sierra Leone
14. South Africa
15. Swaziland
16. Tanzania
17. Uganda
18. Zambia
19. Zimbabwe