

FAX-020-27144753

☎ : 011-25682793  
Fax : 011-25687322  
Email ID: bro-jdeg1@nic.in

Headquarters  
Dte General Border Roads  
Seema Sadak Bhawan  
Ring Road, Delhi Cantt  
New Delhi - 110 010

11338/Mix Design/DGBR/37 /EG1

24 Aug 2018

HQ CE (P) DEEPAK  
HQ CE (P) ARUNANK  
HQ CE (P) CHETAK  
HQ CE (P) VARTAK  
HQ CE (P) BRAHMANK  
HQ STF HIRAK  
HQ CE (P) PUSHPAK

HQ CE (P) SWASTIK  
HQ CE (P) HIMANK  
HQ CE (P) SEWAK  
HQ CE (P) BEACON  
HQ CE (P) UDAYAK  
HQ CE (P) SHIVALIK

**MIX DESIGN COURSE FOR SUBORDINATES OF BORDER ROADS ORGANISATION  
SCHEDULED TO BE HELD FROM 03 SEP 2018 TO 18 SEP 2018 AT CME PUNE**

1. The following Pers of your Projects are nominated/reserved to attend the subject training:-

<u>Srl No</u>	<u>GS No , Rank &amp; Name</u>	<u>Unit</u>	<u>Project</u>
<b><u>Nominated</u></b>			
(a)	GS-194553F JE (CIV) KRISHAN KUMAR	759 BRTF	HQ CE (P) DPK
(b)	GS-192430W JE (CIV) KULDEEP KUMAR	328 SPL/ 129 RCC /758 TF	HQ CE (P) SWTK
(c)	GS-195499L JE (CIV) PATIL SUBHASH	432 RMPL/ 119 RCC /756 TF	HQ CE (P) ARK
(d)	GS-198097Y JE (CIV) BHUPENDRER	310 SPL/ 78 RCC /50 BRTF	HQ CE (P) HMK
(e)	GS-195663K JE (CIV) PRADEEP KUMAR	1520 RMPL/ 95 RCC /45 BRTF	HQ CE (P) CTK
(f)	GS-198054K JE (CIV) ROHIT KUMAR GUPTA	305 SPL/ 84 RCC /25 BRTF	HQ CE (P) SWK
(g)	GS-198374Y JE (CIV) PULIKONDA RANGA SWAMY	177 FCPL/ 120 RCC	HQ CE (P) VTK
(h)	GS-194414X JE (CIV) AKSHAY SIKDAR	314 SPL/ 52 RCC /35 TF	HQ CE (P) BCN
(j)	GS-192898K JE (CIV) EJAJ AHMED	435 RMPL/ 1448 BCC /761 TF	HQ CE (P) BMK
(k)	GS-197858M JE (CIV) SHANKAR SINHA	1512 RMPL/ 116 RCC /48 TF	HQ CE (P) UDK
(l)	GS-197845P JE (CIV) ANKUR RAJ	1530 RMPL/67 RCC /48 TF	HQ STF HRK
(m)	GS-194798X JE (CIV) VIMAL KUMAR SHARMA	389 RMPL/66 RCC/21 TF	HQ CE (P) SVLK
(n)	GS-192455H JE (CIV) HARENDRA PAL SINGH	399 RMPL/71 RCC/24 TF	HQ CE (P) PSK

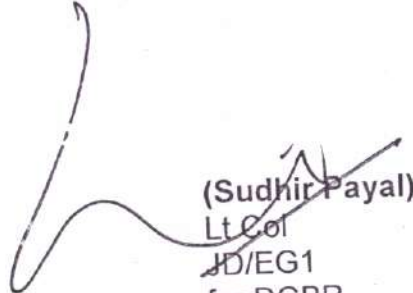
07  
29/08

<u>Reserve</u>			
(a)	GS-192983M JE (CIV) SANDEEP KUMAR	68 RCC/759 TF	HQ CE (P) DPK
(b)	GS-196024N JE (CIV) CHETAN	337 SPL/ 119 RCC /756 TF	HQ CE (P) ARK
(c)	GS-198093H JE (CIV) NAVEEN KUMAR MEENA	320 PWPL/ 78 RCC /50 BRTF	HQ CE (P) HMK
(d)	GS-195265K JE (CIV) ARJUN THAPA	439 RMPL/ 95 RCC /45 BRTF	HQ CE (P) CTK
(e)	GS-190515N JE (CIV) PREM PRADEEP	395 SPL/ 118 RCC /35 TF	HQ CE (P) BCN
(f)	GS-197494L JE (CIV) PANDIAN V	1444 BCC /48 TF	HQ CE (P) UDK
(g)	GS-194990K JE (CIV) AMIT TOMAR	66 RCC/21 TF	HQ CE (P) SVLK

3. CE Projects are requested to direct the Pers to report at CME, Pune on due date. Request dispatch the Pers well in time and confirm their dispatch. No representation will be accepted. Joining instruction have been uploaded on BRO website.

4. The projects can process their move sanction in time to facilitate availability of Pers by due date.

5. Please ack receipt.

  
(Sudhir Payal)  
Lt Col  
JD/EG1  
for DGBR

Copy to :-

SEMT WING  
CME, Pune  
PIN-908797  
C/O 56 APO

FHE, CME, Pune

Internal:-

DGBR/Coord

DGBR/EDP Cell

*Bnd (10 sheets)*

- You are requested that necessary accommodation for stay of ibid trainees may be arranged.

- For info pl

- For info.

A photo copy of joining instruction is enclosed herewith for uploaded on BRO website.



## DRAFT JOINING INSTRUCTIONS FOR MIX DESIGN COURSE (FOR DGBR)

### TRG INSTRS

#### Gen

1. On behalf of the Commandant and all ranks of College of Military Engineering (CME), we extend a warm welcome to you for attending course at the College. CME is loc in the city of Pune (State of Maharashtra).
2. CME is a premier Category 'A' Establishment responsible for imparting training to officers and JEs / JCOs / OR of Corps of Engrs, selected personnel from CPO, PMF, Civil agencies and Friendly Foreign Countries. The course would be conducted at Soil Engineering & Material Testing (SEMT) Wing CME Pune. A brief on CME is at **Appx A**.

#### Conduct Of Course

3. **Aim.** To train students in concrete and bituminous mix design.
4. **Scope.** The students should be able to understand the basics of Design Mix so that they can supervise as well as design concrete / bitumen mix in field / at site labs. They should be able to perform all types of tests on cement, aggregate and bitumen for testing the quality of materials.
5. **QR incl Medical Category.** Degree / Diploma in Civil Engineering. The candidate should be in requisite med category as per SAO 6/5/89. Details of documents to be carried are at **Appx B to E**.
6. **Duration / Block Syllabus.** The course is of two weeks duration. Block syllabus is at **Appx F**.
7. **Method of Instructions**
  - (a) Lecture and presentations.
  - (b) Tutorials and discussions
  - (c) Laboratory work
8. **Study material.** The student offrs/JEs are reqd to carryout preparation on the course as per details given below:-
  - (a) Recommended books to be carried: Details are at **Appx G**
  - (b) Recommended Readings: Details are at **Appx H**.
9. **Wkg Hrs.** On wkg days, classes are conducted from 0815 to 1400h. The timings may extend to evening hrs as per reqmt. Students will maintain punctuality and will be seated in the class five min prior to the commencement of the class.

#### Reception

10. You are required to intimate the date and time of your arrival by AWAN / telegram to SEMT Wing, CME Pune-31, so that arrng can be made for accn and tpt. Tele No of SEMT Wing is **020-27144753 (Fax No 020-7146842)**. Considering the limited transport resources in CME, it is not practically possible to provide veh for each Offr / JCO / JE on arr. Hence, common tpt may be provided to a group of students.
11. CME bus reg leaves for Pune Rly stn at 1530 hrs and returns from Pune Rly Stn at 1700 hrs for CME. This facility may be availed by the students reaching Pune Station. ETA may be fwd as per format at **Appx J**. In case you arrive without intimating your ETA, you may reach CME under your own arrangements. On arrival in CME, all are required to report to the RXN Centre, which is in the East Wg Mess, from where you would be taken to the allotted accn. Tele No of the Rxn Centre is **020-27149877**.

## ADM INSTR

### Accn

12. Accn will be provided to students as per their rank / designation. Students are not permitted to make arrng within CME Campus or Pune with friends and relatives for their stay. Under no circumstances lady guests will be entertained in CME Campus.

### Tpt

13. Tpt, other than for official vis and tours, is NOT provided to students attending courses in CME. For the first two days of the course, bus / mini bus may be provided for mov from Mess to cl room and back. For bal pd, bus can be arranged on payment or two wheelers may be hired from the mkt. However, Students can bring their own veh at their expense. In the event of hiring / possessing a two wheeler, it is mandatory for the officer(s) to wear crash helmet while riding the same. The pillion rider, if any, will also be reqd to wear a crash helmet. It may be noted that two wheelers and four wheelers are not allowed in the College on Wed & Sat when only cycles are to be used. Cycles can be hired locally..

### Messing

14. Students are required to dine in the respective messes/hotel. Please note that the Mess Bill is required to be paid by online Net Banking / Credit / Debit Cards only.

### Claims

15. Claims for the course will be initiated by respective units after termination of course.

### Sahayaks and Servant

16. Under no circumstance students will bring their sahayaks to the College. If brought they will be returned to units immediately.

### Dress Code

17. Dress for classes in CME is as under, offr should be in possession of these dresses:-

(a) Service Offr.

- (i) Mon, Tue, Thu - Dress No 4 for army personnel.
- (ii) Wed & Sat - Trouser & Shirt with Tie
- (iii) Fri - Combat Dress

(b) Civilian Offr

- Trouser & Shirt with Tie on all days.

(c) Subordinate Staff

- (i) Service - Combat / Dress as per auth.
- (ii) Civilian - Shirt and Trousers.

### Lve

18. As a matter of policy, no leave is granted during the course.



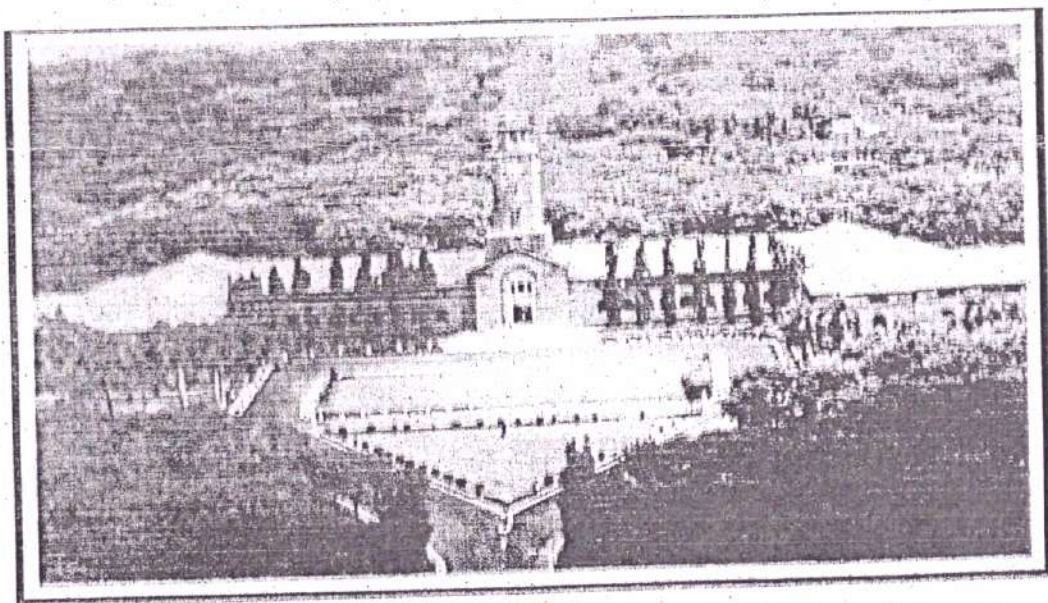
### BRIEF OF CME

1. In 1934, the first Indian Engineer officers (after training at the Royal Military Academy, Woolwich) were given instruction in Military Engineering at the School of Military Engineering, Chatham. After World War-II, it became evident that centralised training of officers and other ranks of the Corps was essential. Therefore, it became necessary to find a home for the School of Military Engineering. The School started functioning in Thomson College, Roorkee during November 1943. After careful consideration, to cater for its expansion, the present site at Pune was selected. By end 1947, the School of Military Engineering started moving to its new location at Pune and completed the move by mid 1948.

2. In November 1951, in view of the increased responsibilities and training facilities provided at the School, it was decided to change its name to '**College of Military Engineering**', in keeping with the higher status of the Degree Engineering Courses and recognition by the Institution of Engineers (India). Work on permanent construction commenced in 1948 and most of the accommodation was completed by 1958. Rapid expansion of the College took place after 1963 to cater for the increased intake necessitated by the expansion of the Army.

3. **Alma Mater** of all Engineer Officers, CME is one of the Category 'A' establishments of the Army, under the Army Training Command (ARTRAC). CME has a role encompassing training, advisory, projects and research and experimentation for the Combat Engineers, Military Engineering Service, Border Roads Organisation and Survey. The training is conducted for personnel of the Corps of Engineers, other Arms and Services, Navy, Air Force, Para Military Forces, the police and civilians.

4. **SEMT Wing** is part of CME is responsible inter alia for testing of building materials, PCN evaluation & friction testing of airfields. It has functional labs & trained staff to carry out it's tasks.



o





CERTIFICATE OF UNDERTAKING BY THE OFFR/JCOs/JEs/ORs

1. No. .... Rk. .... Name .....

Unit..... am willing to attend .....(Name of  
Course) Serial No ..... Commencing from..... to..... at  
..... (Name of Institution) despite being a permanent LMC (SHAPE Factor) for  
.....(disability).

2. I undertake that I will neither claim liability nor any compensation either against the  
adm or the med auth if any aggravation in my med condition occurs due to sch course.

Place: .....

Dt: .....

(Sign of the Individual)

COUNTERSIGNED BY OC / CO UNIT

*C*

MED CERTIFICATE OF PRESENT STATUS OF DISABILITY

1. It is certified that No ..... Rk ..... Name .....  
Unit ..... is in med cat ..... for  
the disability ..... and the disability at present is stabilised.
2. The last med bd in respect of the offr was held on and the next med bd is due  
on.....
3. A copy to Appx F to AO/1/2004/DGMS in respect of the last med bd proceedings is  
encl with this certificate.

Place:

(Sign of the RMO/AMC Specialist)

Dt  
(Office Seal)



MED FITNESS CERTIFICATE

1. Certified that No ..... Rk ..... Name.....  
Unit ..... has been detailed to attend Course Ser No.....  
commencing at CME, Pune. wef.....to.....
2. His present med cat is SHAPE-1. (NOTE: OBESITY factor may please be specifically checked).
3. He is free from infectious and contagious disease.
4. The Offr/JCO/JE/OR has been examined by me and found FIT / UNFIT to proceed on above mentioned course.
5. It is confirmed that NO (NO) med bd proceeding concerning the offr is awaited from higher HQ after approval / confirmation.

Stn: \_\_\_\_\_

(Signature of Med Offr)

Date \_\_\_\_\_

2

**SYLLABUS : MIX DESIGN COURSE (DGBR)**

Topic	Theory	Practicals
Completion of adm formalities.	1	-
Opening Address	1	-
Basic properties of coarse and fine aggregate for use in construction works.	2	-
<b>Tests on aggregates</b> - Impact test, crushing test, flakiness - elongation index test , Abrasion test on coarse aggregate.	-	3
<b>Tests on aggregates</b> - Free moisture test, specific gravity and water absorption test of fine aggregate and coarse aggregate.	-	4
<b>Tests on cement</b> - Consistency test, initial and final setting time, compressive strength test, soundness test.	-	3
Introduction to Concrete Mix Design	2	-
Mix design calculation by students	-	3
Blending of aggregates for mix design.	-	2
Slump test and compaction factor test based on above calculation and casting of samples. Prep of mix design report. * Compressive strength test be carried on 15 Sep i.e. after 7 days setting time.	-	7
<b>Chemical testing of aggregate</b> - Soundness test, alkali aggregate reactivity test, organic impurity and deleterious material test.	-	2
<b>Chemical testing of cement</b> - Determination of silica oxide, ferric oxide, alumina oxide, calcium oxide, magnesium oxide, sulphate, insoluble residue.	-	3
Classification of soil ,Shear strength and CBR test of soil.	-	2
Introduction to ingredients of bituminous mixes and Introduction to bituminous mix design.	2	-
Theory and practical : Testing of bitumen	-	5
Types of flexible pavements & its properties	-	2
Design criteria for bituminous mix design.	-	2
Blending of aggregates for mix design. (Proportioning of aggregates)	-	3
Practical: Tests on Bitumen & Preparation of Marshall specimen in lab	-	7
Practical: Determination of marshall stability and flow value	-	3
Density & air void, VFB calculation and plotting of curves.	-	2
Compilation of lab results.	-	2
Exam on concrete and bituminous mix design.	5	-
Testing of concrete blocks prepared by students (7 days strength)	-	2
Preparation & submission of Project Report	-	7
Feed back incl online TEI	4	-
Closing address.	1	-
Adm Formalities.	2	-
<b>TOTAL</b>	<b>20</b>	<b>64</b>

The duration of course is 02 weeks.



**Appx G**

(Refer to Para 8 (a) of  
Draft Joining instrs)

**RECOMMENDED BOOKS**

1. Concrete Technology : M. S. Shetty
2. Transportation Engg and Highways : Justo & Khanna
3. The testing of Bituminous Mix – Lab Hand Book by DC Brooma
4. Bituminous Materials : Asphalts, Tars and Pitches Vol I & II : Arnold T Morkey

**Appx H**

(Refer to Para 8 (a) of  
Draft Joining instrs)

**RECOMMENDED READINGS**

1. IS : 73 : 2013, IRC SP53-2010, Asphalt Institute Manual MS-2, MS-2016-04.03
2. Defence Work Practice
3. Orange Book, MORTH



DETAILS OF ETA

1. Personal Details
  - (a) No .....
  - (b) Rk & Name .....
  - (c) Unit .....
  - (d) Whether accompanied by family or single.....
  - (e) Mode of travel.....
2. Date and time of arr.....
3. Details of Train if applicable .....
4. Meals required on .....

