

## TEACHING PLAN FOR THEORY

**Subject Teacher: Mr. Shreekant Narayankar**

**Subject: Advance Concrete Technology Elective III    Class: B.E.(B)                      Branch: Civil                      Year 2017-2018**

| <b>Lecture No</b> | <b>Scheduled Date</b> | <b>Topics to be covered on the scheduled date</b>   |
|-------------------|-----------------------|---|
| <b>UNIT 1</b>     |                       |   |
| 1                 | 19-6-2017             | Cement and its types: general, hydration of cement  |
| 2                 | 20-6-2017             | alkali aggregate reaction   |
| 3                 | 21-6-2017             | Grading curves of aggregates,   |
| 4                 | 26-6-2017             | Manufactured sand as fine aggregate, copper slag as fine aggregate                              |
| 5                 | 27-6-2017             | Concrete: properties of concrete, w/b ratio, gel space ratio,                                   |
| 6                 | 28-6-2017             | Problems on maturity concept, aggregate cement bond strength, Green concrete ,                  |
| 7                 | 3-7-2017              | Guidelines for Quality control & Quality assurance of concrete, Effect of admixtures.           |
| <b>UNIT II</b>    |                       |   |
| 8                 | 4-7-2017              | Structural Light weight concrete  |
| 9                 | 5-7-2017              | ultra-light weight concrete, vacuum concrete,   |
| 10                | 10-7-2017             | mass concrete, waste material based concrete,   |
| 11                | 11-7-2017             | sulphur concrete and sulphur infiltrated concrete, Jet cement concrete (ultra rapid hardening), |
| 12                | 12-7-2017             | gap graded concrete, high strength concrete   |
| 13                | 17-7-2017             | high performance concrete ,   |
| 14                | 18-7-2017             | Self curing concrete, Pervious concrete.  |

| <b>UNIT III</b> |           |   |
|-----------------|-----------|---|
| 15              | 19-7-2017 | Design of high strength concrete mixes,   |
| 16              | 1-8-2017  | design of light weight aggregate concrete mixes,  |
| 17              | 4-8-2017  | design of fly ash cement concrete mixes, design of high density concrete mixes,                                   |
| 18              | 5-8-2017  | Design of pump able concrete mixes, Design of self-compacting concrete.   |
| 19              | 8-8-2017  | Advanced non-destructive testing methods: ground penetration radar, probe penetration, break off maturity method, |
| 20              | 11-8-2017 | stress wave propagation method, electrical/magnetic methods   |
| 21              | 12-8-2017 | Nuclear methods and infrared thermographs.  |
| <b>UNIT IV</b>  |           |   |
| 22              | 15-8-2017 | Historical development of fibre reinforced concrete,  |
| 23              | 18-8-2017 | properties of metallic fibre, polymeric fibres,   |
| 24              | 19-8-2017 | carbon fibres, glass fibres and naturally occurring fibres  |
| 25              | 22-8-2017 | Interaction between fibres and matrix (uncracked and cracked matrix),   |
| 26              | 25-8-2017 | basic concepts and mechanical properties: tension and bending.  |
| 27              | 28-8-2017 | basic concepts and mechanical properties: tension and bending.  |
| 28              | 29-8-2017 | Interaction between fibres and matrix (uncracked and cracked matrix),   |
| <b>UNIT V</b>   |           |   |
| 29              | 30-9-2017 | Properties of hardened  |
| 30              | 4-9-2017  | behaviour under compression,  |
| 31              | 5-9-2017  | frc, tension and flexure of steel fibres and polymeric fibres,  |

|                |           |   |
|----------------|-----------|---|
| 32             | 6-9-2017  | GFRC, SFRC, SIFCON,-development,                                    |
| 33             | 11-9-2017 | constituent materials, casting,                                     |
| 34             | 12-9-2017 | Quality control tests and physical properties.                      |
| <b>Unit VI</b> |           |   |
| 35             | 13-9-2017 | Ferro cement: Properties & specifications of Ferro cement materials |
| 36             | 18-9-2017 | Ferro cement: Properties & specifications of Ferro cement materials |
| 37             | 19-9-2017 | analysis and design of prefabricated concrete structural elements   |
| 38             | 20-9-2017 | manufacturing process of industrial concrete elements               |
| 39             | 25-9-2017 | manufacturing process of industrial concrete elements               |
| 40             | 26-9-2017 | precast construction,   |
| 41             | 27-9-2017 | erection and assembly techniques                                    |
| 42             | 2-10-2017 | erection and assembly techniques                                    |