

**Dr. Ambedkar Institute of Technology
Department of Civil Engineering**

Minutes of the 7th BOS meeting held on 18.06.2016

The meeting commenced at 9.00 AM on 18-06-2016 in the M Tech class room of the Silver jubilee building, Dr. AIT under the chairmanship of Dr. B. Shivakumaraswamy, HOD Civil Engineering Department. The Chairman welcomed all the members of BOS to the meeting and presented the scheme and syllabus of BE (Civil) for the approval. The following dignitaries of BOS attended the meeting

1. Dr. B. Shivakumaraswamy, Professor & Head, Dr. AIT. Bangalore
2. Dr. N.S. Kumar, VTU Nominee, Professor of Civil Engg. CED, GCE, Ramanagaram.
3. Dr. Chandrakishen, Professor of Civil Engineering, IISc, Bangalore.
4. Dr. Ganagadhar, S. Professor of Civil Engineering, CED, UVCE, Bangalore.
5. Dr. Udayashankar, Professor of Civil Engineering, CED, RVCE, Bangalore.
6. Dr. Nataraj, Professor of Civil Engineering, CED, SJCE, Mysuru.
7. Dr. K. Shantharaju, Project Head, PSC India Infrastructure Pvt Ltd, Pune
Maharashtra State
8. Ms. Mamatha ME, (PhD) Asst. Prof. EWIT, Bangalore
9. Dr. M.N. Hegde, Professor, CED, Dr. AIT. Bangalore
10. Dr. K.V.Lokesh, Professor, CED, Dr. AIT. Bangalore
11. Dr. S. Vijaya, Professor, CED, Dr. AIT. Bangalore
12. Dr. S.D. Venkataraj mohan, Professor, CED, Dr. AIT. Bangalore
13. Dr. S.G. Ramachandraiah, Associate Professor, CED, Dr. AIT. Bangalore
14. Dr. K.V. Manjunatha, Associate Professor, CED, Dr. AIT. Bangalore
15. Mr. R. Madhusudhan, Asst. Professor, CED, Dr. AIT. Bangalore
16. Mr. M. R. Suresh, Associate Professor, CED, Dr. AIT. Bangalore
17. Mr. T. Chandrashekariah, Associate Professor, CED, Dr. AIT. Bangalore
18. Mr. H.R.Srinivas, Asst. Prof. CED, Dr. AIT. Bangalore
19. Mr. H. Anantharam, Associate Professor, CED, Dr. AIT. Bangalore
20. Mr. G.P. Manjunath, Associate Professor, CED, Dr. AIT. Bangalore
21. Mr. M. Krishnamurthy, Associate Professor, CED, Dr. AIT. Bangalore
22. Mr. Ankesh, S.B, Asst. Professor, CED, Dr. AIT. Bangalore
23. Mr. Dharshan M.K, Asst. Professor, CED, Dr. AIT. Bangalore
24. Mrs. Poornima Biranagi, Asst. Professor, CED, Dr. AIT. Bangalore
25. Ms. Vaibhavi, Asst. Professor, CED, Dr. AIT. Bangalore
26. Mrs. Kavya,H.K Asst. Professor, CED, Dr. AIT. Bangalore

Agenda


- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to VIII Semester BE Civil Engineering courses to be introduced for the Academic year 2016-17.

- The BOS Chairman presented the proposed Curriculum design, the Scheme and Syllabus of BE Civil Engineering courses to be introduced for the academic year 2016-17 through power point. The hard copies of the proposed Scheme and Syllabus from I Semester to VIII semester BE Civil Engineering courses also distributed to all the members of BOS for a detailed review and sought their opinion with regard to any addition / correction / deletion / modification in the proposed syllabus and accordingly all the members of BOS after a thorough review and discussion made the following suggestions / corrections / modification as detailed below:
 1. Dr. Chandrakishen, Professor IISc, Bengaluru, suggested shifting analysis of trusses from unit 2 to unit 1 and deflection of beams (moment area method and conjugate beam method) from unit 1 to unit 2. Also suggested to change the title of the unit 5 as Analysis of indeterminate arches.
 2. In addition to the study of kinematics of rectilinear motion, Projectiles and kinetics of rigid bodies, the super elevation and banking portion is introduced in ECE and Engg. Mechanics of I Sem. BE for all branches of Engineering as per the decision taken in the departmental BOS meeting. The Board has accepted to include the suggestions.
 3. Dr. Chandrakishen, Professor IISc / BOS has suggested to modify the title of the subject CV31 Building Materials and Construction instead of Building Materials and Construction Technology and the suggestion has been incorporated.
 4. Dr. N S Kumar, member of VTU nominee has suggested including derivation of equations for thick and thin cylinders in addition to application in unit 4 in Strength of Materials.
 5. Dr. Udayashankar, Prof. of RVCE has suggested to give more credit to Structures subject but the members expressed to give maximum of 4 credits per subject.
 6. Dr. Nataraj has suggested to change the title of unit 4 in Fluid Mechanics as flow through pipes and suggested some reference books and the BOS has accepted.
 7. Dr. Chandrakishen, Professor IISc / Dr. K. Shantharaju / Dr. Gangadhar have advised to change load for footing as Proportioning of footing for equal settlement and the suggestion has been incorporated.

8. The Chairman proposed to introduce computer Aided RC drawing (Part-A) and Part-B, the design as per IS: 456-2000 in Design and drawing of RC Structures (CV61) as discussed in the department board meeting and the Board has accepted the proposal.
9. Dr. Nataraju. Professor of Civil Engg. SJCE proposed to incorporate Arch dams in Unit 2 of Hydraulic structures & irrigation design – drawing and the board has accepted to incorporate the same.
10. Dr. Nataraju. Professor of Civil Engg. SJCE / Dr. Udayashankar / Mamatha. A, Alumni representative advised to increase the credit for the Extensive Survey Project in VI Sem. BE but the board has not accepted.
11. Mr. T chandrasekaraiah, Associate Professor asked for more credit for Transportation Engineering-I, but the board suggested to keep the same credit and increase the number of hours of teaching.
12. The members of BOS suggested carrying out New Tank Project and Old Tank Project surveying at SS Ghati using Total Station and the chairman accepted the suggestion and incorporated.
13. Dr. N S Kumar, member of VTU nominee has suggested to remove tubular connection in welded joints in the subject Cv71, Design of Steel Structures and the BOS members agreed for the suggestion.
14. The Chairman proposed to introduce computer Aided steel drawing (Part-A) and Part-B, the design as per IS: 800-2007 in Design and drawing of Steel Structures (CV81) as discussed in the department board meeting and the Board has accepted the proposal.
15. Dr. N S Kumar, member of VTU nominee has suggested. to remove the design of bolted plate girder in the subject design and drawing of Steel Structures of VIII Sem. BE but the board rejected the proposal and to retain the same in the syllabus.
16. Dr. K.V. Lokesh suggested to incorporate Indoor Air Pollution in the subject CV755, Air Pollution and control (Unit 4) and the board has accepted to incorporate.
17. Dr. K. Shantharaju, Industrial Expert advised to include Construction Project Management (CV758) as Core subject instead of Elective but the board has not come to any conclusion because of credit allotment in the core subjects.

18. Dr. Udayashankar B.C. Prof of RVCE, suggested adding code books in the subject CV834, Advanced design of Steel Structures and the same is incorporated.
19. Dr. SDV / HAR / Dr. K.V. Lokesh suggested including environmental impact due to the construction activities in Highway project in the subject CV836, Environmental Impact Assessment as discussed in the department meeting and the board has accepted to incorporate the same in Unit 5.
20. Dr. Chandrakishen, Professor IISc / Dr. K. Shantharaju, Industrial Expert advised to include Repair and Rehabilitation of Structures as Elective and the board has accepted to include the subject in VI Semester electives.
21. The BOS members have suggested including NDT in concrete laboratory syllabus for 7th semester B. E. Since, the equipments required are procured under VTU research grants for the project "Health monitoring, repair and rehabilitation of structures" the suggestion is considered and implemented.
22. As per the suggestions of BOS members, the Advanced concrete Technology subject has been introduced in VI Sem. BE instead of VIII Sem. because to give more time for the students to carry out their main Project.
23. The BOS members suggested to procure latest licensed version soft ware's such as Auto CAD, STAAD Pro, E-Tabs, ANSYS etc for academic purpose.

With the long discussion, all the members are agreed to make changes and modification in the syllabus for the academic year 2016-17. With this, meeting was concluded with vote of thanks to the chair by Dr. K.V. Manjunath.


(Dr. B. Shivakumara swamy)
Chairman, BOS,
Prof. & Head, Dept. of Civil Engineering
Dr. AIT, Bangalore- 56.

W/c to Copy:

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**Dr. Ambedkar Institute of Technology
Department of Civil Engineering**

Minutes of the 7th BOS meeting held on 25.03.2017

The meeting commenced at 10.00AM on 25-03-2017 in the M Tech class room of the Silver jubilee building, Dr. AIT under the chairmanship of Dr. B. Shivakumaraswamy, HOD Civil Engineering Department. The Chairman welcomed all the members of BOS to the meeting and presented the scheme and syllabus of BE (Civil) and M Tech (CSE) for the approval. The following dignitaries of BOS attended the meeting

1. Dr. B. Shivakumaraswamy, Professor & Head, Dr. AIT. Bangalore
2. Dr. Chandrakishen, Professor of Civil Engineering, IISc, Bangalore.
3. Dr. Renukadevi, VTU Nominee, Professor of Civil Engg. CED, RVCE, Bengaluru
(23/03/2017).
4. Dr. Ravikumar A. S. Professor of Civil Engineering, CED, UVCE, Bangalore.
5. Dr. Mayanaik, Professor and Head, Civil Engineering, CED, BMSCE, Bangalore.
6. Prof. S. Bhavanishankar Professor of Civil Engineering, CED, UVCE, Bangalore.
7. Sri. Chinnasomaiah, Chief Engineer (Civil), KPC, Bengaluru
8. Mr. Rajagopal R.S, Scientist E, NAL, Bengaluru
9. Mr. Arunkumar ME, (PhD) Asst. Prof. EWIT, Bangalore
10. Dr. S. Vijaya, Professor, CED, Dr. AIT. Bangalore
11. Dr. S.D. Venkataraj mohan, Professor, CED, Dr. AIT. Bangalore
12. Dr. S.G. Ramachandraiah, Associate Professor, CED, Dr. AIT. Bangalore
13. Mr. R. Madhusudhan, Asst. Professor, CED, Dr. AIT. Bangalore
14. Mr. H.R. Srinivas, Associate. Prof. CED, Dr. AIT. Bangalore
15. Mr. M. R. Suresh, Associate Professor, CED, Dr. AIT. Bangalore
16. Dr. Chandraashekar, Associate. Prof. CED, Dr. AIT. Bangalore
17. Mr. T. Chandrashekariah, Associate Professor, CED, Dr. AIT. Bangalore
18. Dr. K.V. Lokesh, Professor, CED, Dr. AIT. Bangalore
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23. Mr. Ankesh, Asst. Professor, CED, Dr. AIT. Bangalore
24. Mr. Darshan M.K, Asst. Professor, CED, Dr. AIT. Bangalore
25. Miss Poornima, Asst. Professor, CED, Dr. AIT. Bangalore
26. Smt. Kavya H.K, Asst. Professor, CED, Dr. AIT. Bangalore
27. Smt. Vaibhavi B.D, Asst. Professor, CED, Dr. AIT. Bangalore
28. Smt. Supritha, Asst. Professor, CED, Dr. AIT. Bangalore

Agenda

- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to VIII Semester BE Civil Engineering courses to be introduced for the Academic year 2017 - 18.

- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to IV Semester M Tech structural Engineering courses to be introduced for the Academic year 2017 - 18.
- The BOS Chairman presented the proposed Curriculum design, the Scheme and Syllabus of BE Civil Engineering courses and also M Tech (Structural Engineering) to be introduced for the academic year 2017-18 through power point. The hard copies of the proposed Scheme and Syllabus from I Semester to VIII semester BE Civil Engineering courses also distributed to all the members of BOS for a detailed review and sought their opinion with regard to any addition / correction / deletion / modification in the proposed syllabus and accordingly all the members of BOS after a thorough review and discussion made the following suggestions / corrections / modification as detailed below:
 1. Dr. Chandrakishen, Professor of Civil Engineering, IISc suggested to introduce numerical problems in D'Alembert's Principle in the subject ECE and Engineering. Mechanics of I Sem. BE for all branches of Engineering (common subject for I year). The Board has accepted to include the suggestions.
 2. Prof. S. Bhavanishankar suggested to incorporate Cement Concrete blocks, Stabilized mud blocks, Sizes requirement of good blocks, Mortar- types and requirements content in the I unit of Building materials and Construction. Timber chapter is included in unit 3 which consists of doors and windows. The Board has accepted the suggestion.
 3. Dr. Ravikumar suggested to include the measurement of fluid flow through Venturi flume in the Fluid mechanics theory and the Board has accepted the suggestion.
 4. In the Surveying Practice-II syllabus, the contents such as difference in elevation between two points and gradient, Distance between two inaccessible points using Total Station is introduced as per the suggestion made by Chinnasomaiah, Industrial expert and the Board also accepted the same.
 5. Mr. M. R. Suresh expressed to include X-ray diffraction technique of identification of clay minerals, confined and un confined aquifer in unit 3 of Geotechnical engineering -I of V Sem BE, The Board has accepted after discussion.
 6. Dr. Ravikumar and Dr. Chandrakishen have suggested to introduce study of performance of Multi-stage centrifugal pump and Performance characteristics of

Francis Turbine in Fluid mechanics Lab since the equipments are available and the Board has accepted.

7. Description of Mano rail to introduce in transportation engineering –I has been accepted by the board as per the suggestion made by Mr. R. S Rajagopal Scientist E, NAL.
8. Dr. Chandrakishen, Professor IISc advised to include two reference books for Strength of Materials and Structural Analysis by Hibbeler.
9. Pile foundation unit is modified as per the advice of Internal and External BOS members in Geotechnical engineering II subject and the board has accepted the modifications.
10. The relative density for sand and determination of free swell and differential swell for soils, and assessing SBC of soil has been introduced in the subject Geotechnical engineering lab as per the discussion held in the meeting and the board has accepted.
11. The BOS members have suggested to have four CO's in the subject CV62 Transportation Engineering-II and the same is considered.
12. The syllabus content of the mini project has been discussed and accepted by the board.
13. DESIGN AND COMPUTER AIDED DRAWING OF STEEL STRUCTURES for VIII Sem. BE (Civil) has been introduced in place of Design and drawing of steel Structures. Here Part-A, Drawing shall be done using CAD and Practical examination is to be conducted separately for 40 marks. Part-B Design and drawing as per IS:800-2007 and Theory examination shall be conducted separately for 60 marks in 3 hours, the Board has accepted the modification.
14. The syllabus content of main project and seminar has been discussed in detail for VIII Sem. BE and accepted by the board.
15. The subject Advanced concrete Technology is shifted from VIII sem. BE to VII Sem. BE of 2014-15 batch to reduce the number of credits in VIII sem. BE as per the suggestions by the BOS members.
16. Dr. Renukadevi suggested one reference book "Engineering Mechanics by Ferdinand Singer for I semester BE Civil and it is incorporated.
17. Dr. Chandrakishen, suggested to have Advanced Design of Steel Structures as core subject than Design of Plates and shells in M Tech Second semester. The board has accepted the suggestion.

18. The board members discussed the syllabus content of mini project work and also main Project for M Tech (CSE) and accepted the same.
19. Dr. Chandrakishen and Sri. Chinnasomaiah have suggested to include Derivation of fourth order differential equation, relationship between moment and curvature and deflection and Raleigh-Ritz .method in design of Plates and Shells of II Semester M Tech and the board has accepted after thorough discussion.
20. Dr. Renukadevi Opined that Project Management and maintenance subject is essential for M Tech students and is to be incorporated in the syllabus. The BOS members agreed for the suggestion and it will be incorporated in the next academic year.
21. The BOS members suggested to procure latest Licensed version soft ware's such as Auto CAD, STAAD Pro, E-Tabs, Ansys etc for academic purpose. The BOS members expressed their happiness for having Research Methodology and Thesis writing in II Sem. M Tech (CSE).

With the long discussion, all the members are agreed to make changes and modification in the syllabus for the academic year 2017-18. With this, meeting was concluded with vote of thanks to the chair.



(Dr. B. Shivakumara swamy)
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**ADr. Ambedkar Institute of Technology
Department of Civil Engineering**

Minutes of the 8th BOS meeting held on 25.06.2018

The meeting commenced at 9.30AM on 25-06-2018 in the M Tech class room of the Silver jubilee building, Dr. AIT under the chairmanship of Dr. B. Shivakumaraswamy, HOD Civil Engineering Department. The Chairman welcomed all the members of BOS to the meeting and presented the scheme and syllabus of BE (Civil) and M Tech (CSE) for the approval. The following dignitaries of BOS attended the meeting

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11. Dr. S.G. Ramachandraiah, Associate Professor, CED, Dr. AIT. Bangalore
12. Mr. H.R. Srinivas, Associate. Prof. CED, Dr. AIT. Bangalore
13. Mr. M. R. Suresh, Associate Professor, CED, Dr. AIT. Bangalore
14. Mr. T. Chandrashekariah, Associate Professor, CED, Dr. AIT. Bangalore
15. Dr. K.V. Manjunatha, Associate Professor, CED, Dr. AIT. Bangalore

Agenda

- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to VIII Semester BE Civil Engineering courses to be introduced for the Academic year 2018 – 19.
- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to IV Semester M Tech Structural Engineering courses to be introduced for the Academic year 2018 - 19.
- The BOS Chairman presented the proposed Curriculum design, the Scheme and Syllabus of BE Civil Engineering courses and also M Tech (Structural Engineering) to be introduced for the academic year 2018-19 through power point. The hard copies of the proposed Scheme and Syllabus from I Semester to VIII semester BE Civil Engineering courses and M Tech also distributed to all the members of BOS for a detailed review as per AICTE / VTU guide lines and sought their opinion with regard to any addition / correction / deletion / modification in the proposed syllabus and accordingly all the members of BOS after a thorough review and discussion made the following suggestions / corrections / modification as detailed below:

1. The chairman draw the attention of BOS members regarding the limitations of credits and number of subjects as per the AICTE/VTU guide lines and emphasized on change of credits for few subjects in the benefit of students to introduce new syllabus.
2. As per the discussion in the college council meeting to reduce number of credits from 150 to 135 for Civil engineering courses (III Sem. to VIII Sem. BE) and 100 to 88 for M Tech (CSE) from the academic year 2018 – 19 onwards, the chairman presented and sought their approval.
3. The title of the some of the courses from existing scheme was re-named/changed and they are presented in the scheme of study.
4. Some of the existing courses are merged and made it as a single course / subject as presented in the scheme of study.
5. The scheme and syllabus for first/second semester common to students of all branches, 18CV14 / 24 Civil engineering and mechanics for three credits was discussed and got approval.
6. Dr. Renukadevi suggested to include applications in third unit of 18CV14/24 and it was approved also suggested one reference book “Engineering Mechanics by Ferdinand Singer it is incorporated..
7. In the present curriculum (2018-19) HS01 Environmental studies is introduced in third and fourth semester of BE for all branches.
8. Prof. S. Bhavanishankar suggested incorporating construction chemicals and new materials of construction in the subject 18CV31. Though it is relevant considering the advancement in the technology, but some of the members after going through the syllabus content opined that it is voluminous hence it is not included. He also suggested to include self compacting concrete (SCC) in the subject 18CV41 and the board has accepted.
9. Dr. K V Manjunath suggested shifting unit 1 of 18CV41 to 18CV31 and the board has not accepted.
10. Chinnasomaiah, Industrial expert suggested to change the teaching methodology from conventional to computer aided (Auto CAD) for the course Building planning and drawing and the board has accepted and the subject is renamed as computer Aided Building planning and drawing for the same credit for the students admitted to 2018-19.
11. Concrete and Highway materials lab is allotted to IV Sem. BE civil curriculum as per the suggestion of BOS members.

12. The extensive survey was converted as Advanced survey practice as a non credited course in the VI Sem. BE.
13. The course Hydraulic structures and Irrigation drawing is made it as departmental elective due to shortage of credits. However, Dr. Ravikumar suggested to include Reservoir planning in the core course Hydrology and Irrigation and the board has accepted.
14. The Electives in the various groups are discussed and one of the BOS member Sri Rajagopal R S suggested to keep Advanced Pre-stressed concrete Structure in group 5 and the board has accepted.
15. Prof. S. Bhavanishankar suggested incorporating, the assessment of residual strength of distressed structural elements in the main project of BE and M Tech and the board has accepted.
16. The board members suggested to give seminar / mini project topics from the important units of electives and the board has accepted.
17. Description of Mano rail in the course Railway, Airport and Harbour engineering has been accepted by the board as per the suggestion made by Mr. R. S Rajagopal Scientist E, NAL.
18. The BOS members are suggested to procure equipments for the structural engineering lab,(M Tech) to measure natural period, frequency and mode shapes and the board has accepted. The BOS members expressed their happiness for having Research Methodology and Thesis writing in II Sem. M Tech (CSE).
19. The BOS members expressed their views to modify the syllabus content of newly introduced subject Design of composite Structural Elements as an elective in IV Sem. M Tech. and Dr. Renukadevi suggested to keep Advanced Structural Analysis instead of the above subject.
20. The BOS members suggested to send M Tech students to CPRI Bengaluru or SERC Chennai to do their M Tech projects on transmission towers and advanced research and the board has accepted. Also The BOS members suggested to procure latest Licensed version soft ware's such as STAAD Pro, NASTRON (Analysis software) etc for academic purpose.

With the long discussion, all the members are agreed to make changes and modification in the syllabus for the academic year 2018-19. With this, meeting was concluded with vote of thanks to the chair.



(Dr. B. Shivakumara swamy)
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Dr. Ambedkar Institute of Technology
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Minutes of the 8th BOS meeting held on 25.05.2019

The meeting commenced at 9.30AM on 25-05-2019 in the Seminar hall of the Silver jubilee building, Dr. AIT under the chairmanship of Dr. B. Shivakumaraswamy, HOD Civil Engineering Department. The Chairman welcomed all the members of BOS to the meeting and presented the scheme and syllabus of BE (Civil) and M Tech (CSE) for the approval. The following dignitaries of BOS attended the meeting

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2. Dr. Chandrakishan, Professor, IISc, Bengaluru
3. Dr. Krishnaiah, VTU Nominee, Professor of Civil Engg. CED, MCE, Hassan
4. Dr. Renukadevi, Professor of Civil Engg. CED, RVCE, Bengaluru
5. Dr. Ramaraj, Professor and head of Civil Engineering, CED, DSCE, Bengaluru
6. Dr. M N Hegde, Professor, CED, Dr. AIT. Bengaluru
7. Dr. S. Vijaya, Professor, CED, Dr. AIT. Bengaluru
8. Dr. S.D. Venkataraj mohan, Professor, CED, Dr. AIT. Bengaluru
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11. Mr. T. Chandrashekariah, Associate Professor, CED, Dr. AIT. Bengaluru
12. Dr. K.V. Manjunatha, Associate Professor, CED, Dr. AIT. Bengaluru
13. Dr. Chandrashekar, Associate Professor, CED, Dr. AIT. Bengaluru
14. Dr. Raghunathan, Scientist E, SERC, Tower Testing research Centre
15. Sri. Chinnasomaiah, Chief Engineer (Civil), KPC, Bengaluru
16. Mrs. Nagashree MTech, (PhD), Asst. Prof. MSRIT, Bengaluru

Agenda

- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to VIII Semester BE Civil Engineering courses to be introduced for the Academic year 2019-20
- Review and approval of the proposed Scheme of Study and Syllabus from I Semester to IV Semester M Tech Structural Engineering courses to be introduced for the Academic year 2019-20.
- Review of curriculum as per the guide lines of AICTE/VTU.
- The BOS Chairman presented the proposed Curriculum design, the Scheme and Syllabus of BE Civil Engineering courses and also M Tech (Structural Engineering) to be introduced for the academic year 2019-20 through power point. The hard copies of the proposed Scheme and Syllabus from I Semester to VIII semester BE Civil Engineering courses and M Tech also distributed to all the members of BOS for a detailed review as per AICTE / VTU guide lines and sought their opinion with regard to any addition / correction / deletion / modification in the proposed syllabus and

accordingly all the members of BOS after a thorough review and discussion made the following suggestions / corrections / modification as detailed below:

1. The chairman draw the attention of BOS members regarding the reduction of credits and number of subjects as per the AICTE/VTU guide lines and emphasized on change of credits for few subjects in the benefit of students to introduce new syllabus.
2. The Curriculum design for BE Civil engineering courses (III Sem. to VIII Sem. BE) from 150 to 135 credits and M Tech (CSE) from 100 to 88 from the academic year 2019–20 onwards was presented by the chairman and sought their approval.
3. The syllabus content of few courses are merged and made it as a single course / subject as presented in the scheme of study.
4. The subject title of some of the courses from existing scheme was re-named and they are presented in the scheme of study.
5. The scheme and syllabus for first/second semester common to students of all branches, 18CV14/24 Civil engineering and mechanics for three credits was discussed and got approval.
6. Dr. Chandrakishen, Profesor IISc, Bengaluru has suggested to incorporate video clips during lecture hour in the class related to force system, cetroid, MI and friction in engineering mechanics course.
7. Chinnasomaiah, Industrial expert suggested to incorporate leadership in energy efficient design of components in Building material and construction course.
8. Mrs. Nagashree Alumni of Dr. AIT suggested including contents on re-use of building materials in CV31 course.
9. Dr. Chandrakishen, Profesor IISc, suggested reducing the syllabus in CV32 (SOM) by removing Merchant-Rankine's formula and Mohr's circle of strain.
10. Dr. Ramaraju & Dr. Chandrakishen, Profesor IISc suggested to remove chain / tape surveying, Compass surveying in Survey theory and to include the same in Surveying practice has self study component/demonstration. Also they have suggested to have one unit specially on Total Station.
11. The Internal and External members are agreed to combine Geology theory and Lab in order to reduce the number of credits as per the guide lines.
12. Dr. Chandrasekar sought to removal of EIA in HS01 subject and the members accepted the same.
13. Dr. Ramaraju suggested to include topic on method of determining the ground water quantity in the course water supply engineering

14. Dr. Renukadevi and Dr. K V Manjunath suggested to modify the contents of Unit 4 &5 of the subject Hydrology and Irrigation and the Board has accepted the same.
15. Dr. Chandrakishen and Dr. Raghunathan suggested including the knowledge curve in determining the strength parameters in Concrete technology.
16. Chinnasomaiah, Dr. Ramaraju suggested to introduce the Advanced Sequential Batch Reactor (ASBR) technology in Wastewater Treatment and Disposal subject.
17. Dr. Chandrakishen, Dr. Raghunathan, Nagashree and Dr. Renukadevi suggested to include plastic analysis instead of Kani's method in the subject Structural Analysis.
18. Dr. Chandrakishen & Chinnasomaiah, has suggested to include Metro rail system in one of the unit in the subject Transportation Engg II.
19. Dr. Ramaraju has suggested to include Radioactive solid waste in SWM & A case study on land fill liners in ISWM subject.
20. Dr. S D Venkataraj mohan & Dr. Raghunathan, suggested to include guide lines of Real Estate Regulation Act (RERA) in Estimating and costing subject
21. Dr. Ramaraju has suggested including experiments using high volume sampler in environmental Engineering Lab.
22. Chinnasomaiah, Dr. Ramaraju & Dr. S D Venkataraj mohan have suggested to include zero level discharge industrial wastewater in Unit IV of IWWT.
23. Dr. Ramaraju & Dr. S D Venkataraj mohan suggested to include ecology contents in CVE03 subject.
24. Dr. Raghunathan, suggested to include skill based design and fabrication in the design of Steel Structure.
25. Dr. Krishnaiah suggested to register Mooc / swayam online courses for final year students and staffs of the department.
26. Dr. Raghunathan has suggested to change the title of the course Structural engg Lab II as Computational Mechanics Lab and the Board has accepted.
27. One of the BOS members suggested to keep only Stiffness matrix method in Computational Structural Mechanics and the board has not accepted.
28. Dr. Chandrakishen, Dr. Raghunathan, has suggested to include design of Strut and Tie members in Advanced design of Steel Structure.
29. Dr. Renukadevi has suggested to change the title of unit V as continuous system in 18CSE13 Mechanics of deformable bodies.
30. Dr. Raghunathan and Chinnasomaiah, has suggested to include Geopolymer concrete in unit I of Special concrete.

31. Nagashree has suggested to incorporate micro structure of concrete using SEM and the board has accepted.
32. Dr. Chandrakishen, Dr. Raghunathan and Nagashree have suggested Design of Precast and composite Structure as one of the elective in any one of the Semester.
33. Dr. Raghunathan has suggested to include prefabrication of Buildings in the elective.
34. Dr. Raghunathan and Chinnasomaiah, has suggested to include Reliability and Risk Analysis in the course Reliability analysis of Structures.
35. Dr. Chandrakishen, has suggested to include concept of Pre-engineered structural components in the subject Advanced design of structures.
36. Dr. Chandrakishen, has suggested inclusion of non-linear analysis of structures in the course Finite element Analysis.
37. Dr. Raghunathan has suggested inclusion of topic Transmission Towers in Design of Tall Structures.
38. Dr. M N Hegde suggested to include MAT Lab, Eigen Value in the Structural Engg Lab -II.
39. Dr. Chandrakishen, has suggested inclusion transver girders in III unit of Design of Tall Structures.
40. Dr. Raghunathan and Nagashree have suggested to introduce Chapters on Patents and Intellectual Property rights in Research methodology course.

With the long discussion, all the members are agreed to make changes and modification in the syllabus for the academic year 2019-20. With this, meeting was concluded with vote of thanks to the chair.



(Dr. B. Shivakumara swamy)
Chairman, BOS,
Prof.& Head, Dept. of Civil Engineering
Dr. AIT, Bangalore- 56.

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Dr. Ambedkar Institute of Technology, Bangalore-56.

DEPARTMENT OF CIVIL ENGINEERING

No. CV/200/BOS/2020-21

Dated: August 14, 2020

FINAL BOARD of STUDIES (BOS) MEETING NOTIFICATION for UG and PG PROGRAMME

Subject: - Revision in the Existing Syllabus of I, II (common subject for both semester) and IV Semester and Syllabus Proposal for the V and VI Semester and also proposal for PG I & II semester (Structural Engineering) Reg.,

The internal Board of Studies (BOS) meetings held on Jul 09, 2020 considered the recommendations of the Department Academic Program Committee (DAPC) for the changes in the existing syllabus of I, II, III and IV Semester and proposal for the V and VI semester syllabus of the upcoming Odd Semester 2020-21.

The internal BOS committee decided as under for **UG Program:**

| Sl. No. | Semester | Unit | Existing Portion of the Syllabus | Modified Portion of the Syllabus | Remarks |
|---------|-------------------------|------|--|---|---|
| 1 | I & II (18CV14 / 24) | I | Force systems in 3-D analysis | Excluded in the upcoming syllabus | It is a common subject for all branches and it is find to be difficult to complete the syllabus in stipulated time. |
| 2 | | III | Screw Jacks and different Screw Jacks analysis in Friction | Excluded in the upcoming syllabus | |
| 3 | | IV | Mass Moment of Inertia of Circular, Plates, Cylinders, Cone, Sphere and Hook | Excluded in the upcoming syllabus | |
| 4 | | V | Curvilinear Motion, Super Elevation, D'Alembert's Principle and its application in plane motion and connected bodies | Excluded in the upcoming syllabus | |
| 5 | IV (18CVL46) | II | Introduced drawing, editing, modifying and other advanced AutoCAD tools. | Which was not include in the earlier Syllabus | Which is essential to use AutoCAD applications in Civil Engineering works. |

the modifications mentioned in the above table is for your kind review and approval.

The Proposed syllabus for V & VI Semester UG for the academic year 2020-21 is attached with this for your kind reference, review and approval.

The proposed syllabus for I & II semester PG Programme for the academic year 2020-21 is attached with this for your kind reference, review and approval.

Ms. Suma B. P bearing USN **1DA16CV123** has taken change of college from Govt., Engineering College, Kushalanagara to Dr. AIT in the year 2017-18. She falls 2 credits shortage to complete required 200 credits. Internal BOS committee proposed a project based course (CVPM78 – Minor project) for 2 credits to fulfill this and she completed the course in the academic year 2019-20.

Ms. Veena T A bearing USN **1DA15CV129** has taken change of college from Govt., Engineering College, Raichur to Dr. AIT in the year 2017-18. She falls 0.5 credits shortage to complete required 200 credits. Internal BOS committee proposed a seminar course (subject code yet to finalize) for 0.5 credits to fulfill this.

In this regard the BOS approval is required for the above students. Hence I request you all to go through the matter and give the approval.

Thanking you

Yours sincerely

 14/8/2020

Professor and Head
Department of civil Engineering
(Arnbedkar Institute of Technology)
Bangalore - 560 056.

**Dr. Ambedkar Institute of Technology
Department of Civil Engineering**

17/08/2020

Minutes of the Board of Studies (BOS) Meeting.

The online Board of Studies (BOS) meeting was held on 17-08-2020 at 11.00AM through Google Meet platform under the chairmanship of Dr. S Vijaya, Professor and Head of the Department, Department of Civil Engineering, Dr.Ambedkar Institute of Technology, Bengaluru - 56. The Chairman welcomed all committee members to the meeting. As per the meeting agenda the Chairman presented the scheme and syllabus of both UG & PG for the academic year 2020-21 for the approval and approval for the students (taken change from other VTU colleges) facing shortage of credits to fulfill the requirement to award the degree as per Autonomous norms.

The following members were present during the online meeting.

1. Dr. S. Vijaya, Professor & Head, Dr. AIT, Bengaluru
2. Dr. J. M Chandrakishan, Professor, IISc, Bengaluru
3. Dr. Renukadevi, Professor and Dean, RVCE, Bengaluru
4. Dr. Ramaraj, Professor& Head, DSCE, Bengaluru
5. Dr. H C Muddaraju, Asst professor, UVCE, Bengaluru
6. Dr. Raghunathan M. D, Scientist-E, SERC, Tower Testing Research Centre, Chennai
7. Sri. Chinnasomaiah, Chief Engineer (Civil), KPC, Bengaluru
8. Mrs. Nagashree, M.Tech, (Ph.D), Asst Professor, MSRIT, Bengaluru
9. Er. Amit Singh, Invitee Member, Professor & Head, IET, Ayodhya.
10. Dr. S. G. Ramachandraiah, Professor, CED, Dr. AIT, Bengaluru
11. Dr. S. D. Venkataraj Mohan, Professor, CED, Dr. AIT, Bengaluru
12. Dr. Chandrasekar, Associate Professor, CED, Dr. AIT, Bengaluru
13. Mr. S. B. Ankesh, Asst., Professor, CED, Dr. AIT, Bengaluru
14. Mr. Shreyas K, Asst., Professor, CED, Dr .AIT, Bengaluru
15. Mr. M. Naveen Kumar, Asst., Professor, CED, Dr. AIT, Bengaluru
16. Mr. M. K. Darshan, Asst., Professor, CED, Dr. AIT, Bengaluru
17. Mrs. Kavya H. K, Asst., Professor, CED, Dr. AIT, Bengaluru

The following 2 Members have sent the mail with their feedback and suggestions.

1. Dr. Krishnaiah A. J, VTU Nominee, Professor & Head, MCE, Hassan
2. Dr. L. R. Manjunatha, Chairman, ICI, Bengaluru Centre.



The meeting started with condolence for the misfortune demise of our beloved Professor Dr. B. Shivakumaraswamy, Professor & Dean, Department of Civil Engineering, Dr. AIT.

The chairman presented Power Point Presentation (PPT) with following contents:

1. Scheme and syllabus of UG
2. Scheme and syllabus of PG and
3. Compensating Credit for students taken transfer from other colleges.

1. Scheme and syllabus of UG

The meeting started by revised contents in I and II year UG syllabus for the approval and with a detailed discussion the board given approval for the same.

Further, there was a detailed discussion regarding the proposed scheme and syllabus for III year UG (IV and V semester) for the academic year 2020-21, which has been mailed in advance to all members and a detailed review took place in the meeting as follows:

- Sri. Chinnasomaiah, Chief Engineer (Civil), KPC, Bengaluru suggested to conduct the Extensive Survey project (CVP68) **for a minimum period of two weeks** and it was supported by Dr. J M Chandrakishen, Professor, IISc, Bangalore further Chairman conveyed to the committee that with in the college policy limitations it may be considered.
- Dr. J M Chandrakishen, Professor, IISc, Bengaluru discussed about the way of learning of the blended learning portions. Chairman elaborated the way of learning of the said portion to the committee and the members accepted it for implementation.
- Dr. Ramaraju, Professor & Head, DSCE, Bengaluru advised to make paper publication should be compulsory for VIII semester BE students. The Chairman conveyed that it is already in the system and it may be made it compulsory for the coming batches.

2. Scheme and syllabus of PG

- Dr. Renukadevi, Professor and Dean, RVCE, Bengaluru and Dr. J M Chandrakishan, Professor, IISc questioned the necessity of Project Phase I, in II semester and the Chairman clarified by giving practical necessity in the system for the PG project evaluation.
- Mrs. Nagashree, M.Tech, (Ph.D), Asst Professor, MSRIT, Bengaluru has suggested to make Design of Plates and Shells as a core subject. The Chairman considered the suggestion for implementation in the future.

3. Compensating Credit for the students taken transfer from other colleges

- Sri. Chinnasomaiah, Chief Engineer (Civil), KPC, Bengaluru suggested to manage the credits by NTPL or SWAYAM courses and Dr. J M Chandrakishan, Professor, IISc discussed about the limitations and impact of credits allotment in NTPL or SWAYAM courses. The Chairman conveyed to the committee about the limitations in the Autonomous examination system and the committee accepted for the same.

By the end of the meeting the committee approved the I and II year UG syllabus (with minor modification done) and proposed III year syllabus for the implementation in the academic year 2020-21 and also for the method applied for compensating the credits for the students taken transfer from other college.

The Chairman concluded the meeting by extending the vote of thanks to all committee members with due respect.


(Dr. S. Vijaya)

Chairman, BOS,

Prof. and Head, Dept. of Civil Engineering

Dr.AIT, Bangalore-560056

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Department of Civil Engineering,

Minutes of Board of Studies meeting (online) held on Friday, 26.11.2021 at 11.00 am to discuss the scheme and syllabus of 1st year UG courses as per NEP 2020 for the academic year 2021-22.

Members Present

| Category | Name of Person |
|---|--|
| Chairman | Dr. S Vijaya, Professor and HOD, CED, Dr. AIT, Bengaluru. |
| External Subject Experts | 1. Dr. J M Chandrakishen, Professor, IISc, Bengaluru. 2. Dr. M C Nataraj, Professor and Head, CED, MSRIT, Bengaluru. 3. Dr. Anjaneyappa, Professor, CED, RVCE, Bengaluru. 4. Dr. Maheshprabhu, Professor, CED, GEC, Ramanagar. |
| VTU Nominee | Dr. Balakrishna, VTU Nominee, Professor & Head, CED, BIT, Bengaluru. |
| Industry Representative | 1. Sri. Nagesh Puttaswamy, Zonal Head, WT & RMDT, Ultra Tech Cement Ltd. Bengaluru. 2. Dr. M S Sudarshan, Director, Strendant Testing & Proof Checking, Bengaluru. 3. Sri. H R Girish, CEO & MD, Girish Ventures, Strategic Consultants in Construction & Infrastructure Sector – India and Middle East, Bengaluru. |
| Alumni with P G Degree | Mr. Bhyravraj B, M.Tech, SSS Consultant, Nagarabhavi, Bengaluru. |
| Internal Faculty Members with various specialization (UG + PG). | Dr. C Nanjundaswamy, Professor, CED, Dr.AIT, Bengaluru Dr. S D Venkataraja Mohan, Professor, CED, Dr.AIT, Bengaluru Dr. S S Honnanagouder, Profesor, CED, Dr.AIT, Bengaluru Dr. Chandrasekar, Associate Professor, CED, Dr.AIT, Bengaluru. Dr. M N Hegde, Adjunct Faculty, CED, Dr.AIT, Bengaluru (PG) Mr. S B Ankesh, Asst Professor, CED, Dr.AIT, Bengaluru Mr. M K Darshan, Asst. Professor, CED, Dr.AIT, Bengaluru Mrs. Purnima K Biranagi, Asst Professor, CED, Dr.AIT, Bengaluru Mrs. Supritha R M, Asst. Professor, CED, Dr.AIT, Bengaluru Mr. Shreyas K, Asst Professor, CED, Dr.AIT, Bengaluru Mr. M Naveen Kumar, Asst Professor, CED, Dr.AIT, Bengaluru |
| Department Academic Program committee | Dr. S Vijaya, Professor and Head Dr. C Najundaswamy, Professor Dr. S D Venkataraja Mohan, Professor Dr. Chandrasekar, Associate Professor Dr. S Honnanagoudar, Professor |

| |
|---|
| <p>Mr. S B Ankesh, Assistant Professor Mr. M K Darshan, Assistant Professor Mrs. Purnima K Biranagi, Assistant Professor Mrs. Sowmya M, Assistant Professor Mrs. Supriya R M, Assistant Professor Ms. Sphoorthy S M, Assistant Professor Ms. Mary Bhagya Jyothi J, Assistant Professor Mr. Shreyas K, Assistant Professor Mr. Naveen Kumar M, Assistant Professor Mr. Sharath B, Assistant Professor Mr. Ashwin C A, Assistant Professor Dr. Rakesh C, Assistant Professor Ms. Sneha S D, Assistant Professor Mrs. Rajeshwari B, Assistant Professor Mrs. Madhu K S, Assistant Professor Mr. Tilak T N, Assistant Professor Mrs. Tejaswini B R, Assistant Professor Prof. B S Suresh Chandra, Adjunct Faculty Dr. R Madhusudhan, Adjunct Faculty Dr. H R Srinivas, Adjunct Faculty Dr. K V Manjunath, Adjunct Faculty Dr. M N Hegde, Adjunct Faculty Prof. G P Manjunath, Adjunct Faculty</p> |
|---|

The online meeting was held on 26-11-2021 at 11.00AM through Google Meet platform under the chairmanship of Dr. S Vijaya, Professor and HOD, Department of Civil Engineering, Dr.AIT, Bengaluru - 56.

The Chairman welcomed all the members of BoS and faculty of the department to the meeting and presented the scheme and syllabus of 1st year UG courses as per NEP 2020 for the academic year 2021-22 for approval.

The meeting proceeded with PPT presentation and members have offered suggestions as under.

- **Dr. M C Nataraj**, suggested that assignment has to be given more importance in evaluation procedure and it should be out of text books. And this suggestion has been endorsed by **Dr. Chandrakishen**. Other members suggested to reduce the content of dynamics and asked to justify the title of the Civil Engineering and mechanics subject.
- **Dr. M C Nataraj**, also suggested to check how many CO's can be given. If number of CO's is equal for all the subjects then it would be easy to map. And verify the words of CO's.
- **Dr. M C Nataraj**, suggested to justify the role of the teacher in Unit 5 (Blended learning). He mentioned that tutorials and lecture hours should be clearly mentioned and to relook into it.
- **Dr. Chandrakishen** suggested that, in Unit 4 teaching hours is only of 10hrs but this unit has to be given more importance, hence it is better to reduce the number of teaching hours in Unit 1 and 2 and can increase the number of teaching hours for unit 4.

- **Dr. Anjaneyappa**, suggested to replace the word 'determine' in CO's and asked to modify CO2.
- **Dr. Sudarshan**, suggested that more importance should be given to Elements of Civil Engineering part than mechanics part.
- **Dr. Nataraj**, mentioned that first unit is of basic civil engineering but remaining is all about mechanics. So it has to be verified.
- **Mr. Girish H R**, suggested to give more importance on practical applications of Rural Development course (1st year Ability Enhancement Course). He also suggested that there should be 50 marks guaranteed questions in Rural Development, so that students will learn inevitably. Also suggested to include hygienic and sustainability part.
- **Dr Anjeneyappa**, suggested if possible adding solar panels in energy contents. Remove the word 'technique' and 'modern', in unit 4. Content has to be reduced as the course is for 1 credit. Site visit can be carried out instead of videos and ppts.
- **Dr. Balakrishna**, also suggested to look into the content of Rural Development course, as it seems to be more for one credit.

The HOD has informed the members that, their suggestions will be considered wherever possible and thanked all the external and internal BoS members for their kind suggestions and discussion and the meeting was concluded.



(Dr. S. Vijaya)

Chairman, BOS,

Prof. and Head, Dept. of Civil Engineering


Dr.AIT, Bangalore-560056

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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION
B.E (Civil Engineering)
Batch 2017 - 2018
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)


| Sl No | Course and Course code | Course Title | Teaching Department | Teaching Hours/Week | | | Examination | | | | Credits |
|--------------|------------------------|---|---------------------|---------------------|----------|-------------------|-------------------|-----------|-----------|-------------|-----------|
| | | | | Theory Lecture | Tutorial | Practical/Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | | | | | | | | | |
| 1 | MA11 | Engineering Mathematics - I | Hu | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | PH12 | Engineering Physics | BS | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | CV13 | Elements of Civil Engineering & Engineering Mechanics | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 4 | MEL14 | Computer Aided Engineering Drawing | CV | -- | -- | 3 | 03 | 50 | 50 | 100 | 4 |
| 5 | EE15 | Basic Electrical Engineering | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 6 | MEL16 | Workshop Practice Lab | CV | -- | -- | 3 | 03 | 50 | 50 | 100 | 1.5 |
| 7 | PHL17 | Engineering Physics Lab | CV | -- | -- | 3 | 03 | 50 | 50 | 100 | 1.5 |
| 8 | HS02 | Constitution of India & Professional Ethics | CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 2 |
| 9 | KA19 | Kannada | CV | 2 | -- | -- | 03 | 50 | 50 | 100 | PP/NP |
| TOTAL | | | | | | | | | | | 25 |


Professor and Head
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 Dr. Ambedkar Institute of Technology,
 Bangalore - 560 056

UG-2017-18

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION
Batch 2017 - 2018
B.E. (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| II SEMESTER | | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | Credits | |
|--------------|-------|---------------------------------------|--------------|---------------------|----------------------|----------|--------------------|-------------------|-----------|-----------|-----------|-------------|
| | | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | | Total Marks |
| | | | | | | | | | | | | |
| 1 | MA21 | Engineering Mathematics - II | Hu | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 2 | CH22 | Engineering Chemistry | BS | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 3 | CS23 | Computer Concepts & C Programming | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 4 | ME24 | Elements of Mechanical Engineering | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 5 | EC25 | Basic Electronics | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 6 | CSL26 | Computer Concepts & C Programming Lab | CV | 3 | -- | 03 | 03 | 50 | 50 | 100 | 1.5 | |
| 7 | CHL27 | Engineering Chemistry Lab | CV | 3 | -- | 03 | 03 | 50 | 50 | 100 | 1.5 | |
| 8 | HS01 | Environmental Studies | CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 2 | |
| 9 | EN29 | English | CV | 2 | -- | -- | 03 | 50 | 50 | 100 | PP/NP | |
| TOTAL | | | | | | | | | | | 25 | |



Professor and Head
Department of Civil Engineering
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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION
Batch 2017 - 2018

B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

III SEMESTER

| Sl No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|--|---------------------|----------------------|----------|--------------------|-------------------|-------------|-----------|-------------|-----------|
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | | CIE Marks | SEE Marks | Total Marks | |
| 1 | MA31 | Engineering Mathematics - III | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 2 | CV31 | Building Materials & Construction | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 3 | CV32 | Strength of Materials | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 4 | CV33 | Surveying - I | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 5 | CV34 | Fluid Mechanics | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 6 | CV35 | Applied Engineering Geology | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 7 | CVL36 | Civil Engineering Material Testing Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 8 | CVL37 | Surveying Practice - I | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 9 | EN39 | Soft Skills | CV | 2 | -- | -- | 3 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | | | | | | | | 24 |



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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION

B.E (Civil Engineering)
Batch 2017 - 2018


Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| IV SEMESTER | | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | Credits | |
|--------------|------------------------|---------------------------------|---------------------|----------------------|----|--------------------|-------------------|-----------|-----------|---------|-------------|
| Sl No | Course and Course code | | | L | T | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | | Total Marks |
| | | | | | | | | | | | |
| 1 | MA41 | Engineering Mathematics - IV | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 2 | CV41 | Concrete Technology | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 3 | CV42 | Structural Analysis - I | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 4 | CV43 | Surveying - II | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 5 | CV44 | Hydraulics & Hydraulic Machines | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 6 | CV45 | Water Supply Engineering | CV | 3 | -- | 3 | 3 | 50 | 50 | 100 | 3 |
| 7 | CV46 | Building Planning & Drawing | CV | 1 | -- | 3 | 3 | 50 | 50 | 100 | 2 |
| 8 | CVL47 | Surveying Practice - II | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 9 | CVL48 | Applied Engineering Geology | | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 10 | EN49 | Employability Skills | CV | 2 | -- | -- | 3 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | | | | | | | | 26 |


Professor and Head
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SCHEME OF TEACHING AND EXAMINATION
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| V SEMESTER | | | | | | | | | | | |
|--------------|------------------------|--------------------------------------|---------------------|----------------------|----------|--------------------|-------------------|-----------|-----------|-------------|-----------|
| Sl No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | CV51 | Wastewater Treatment & Disposal | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 2 | CV52 | Design of RCC Structural Elements | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 3 | CV53 | Structural Analysis - II | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 4 | CV54 | Geotechnical Engineering - I | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 5 | CV55 | Hydrology & Irrigation Engineering | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 6 | CV56 | Transportation Engineering - I | CV | 3 | -- | 3 | 3 | 50 | 50 | 100 | 3 |
| 7 | CVL57 | Hydraulics & Hydraulic Machinery Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 8 | CVL58 | Computer Aided Design Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 10 | 19HSS1 | Aptitude & Verbal Ability Skills | CV | 2 | -- | -- | 3 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | | | | | | | | 23 |


Professor and Head
 Department of Civil Engineering,
 Dr. Ambedkar Institute of Technology
 Bangalore - 560 056

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION


Batch 2017 - 2018

B.E (Civil Engineering)

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

V SEMESTER

| Sl No | Course and Course code | Course Title | Teaching Dependent time | Teaching Hours /Week | | | Examination | | | Credits | |
|--------------|------------------------|--------------------------------------|-------------------------|----------------------|----------|--------------------|-------------------|-----------|-----------|---------|-------------|
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | | Total Marks |
| 1 | CV51 | Wastewater Treatment & Disposal | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 2 | CV52 | Design of RCC Structural Elements | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 3 | CV53 | Structural Analysis - II | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 4 | CV54 | Geotechnical Engineering - I | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 5 | CV55 | Hydrology & Irrigation Engineering | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 6 | CV56 | Transportation Engineering - I | CV | 3 | -- | 3 | 3 | 50 | 50 | 100 | 3 |
| 7 | CVL57 | Hydraulics & Hydraulic Machinery Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 8 | CVL58 | Computer Aided Design Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 |
| 10 | 19HS51 | Aptitude & Verbal Ability Skills | CV | 2 | -- | -- | 3 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | | | | | | | | 23 |


Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

| Sl No | Course and Course code | Course Title | Teaching Dependent | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits | |
|--------------|------------------------|---|--------------------|----------------------|----------|--------------------|-------------------|-------------|-----------|-------------|---------|-----------|
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | | CIE Marks | SEE Marks | Total Marks | | |
| 1 | HS03 | Management and Entrepreneurship | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 | |
| 2 | CV61 | Design & Computer Aided Drawing of RCC Structures | CV | 1 | -- | -- | 3 | 50 | 50 | 100 | 2 | |
| 3 | CV62 | Transportation Engineering - II | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 4 | CV63 | Geotechnical Engineering - II | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 5 | CV64 | Hydraulic Structures & Irrigation Design Drawing | CV | 2 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 6 | CV65 | Advanced Concrete Technology | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 7 | CV66X | Professional Elective - I | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 8 | CVL67 | Geotechnical Engineering Laboratory | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 | |
| 9 | CVL68 | Extensive Survey Project | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 | |
| 10 | CVP69 | Mini Project Work | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 2 | |
| 11 | 19HS61 | Analytical & Reasoning Skills | HS | 2 | -- | -- | 3 | 50 | -- | 50 | PP/NP | |
| TOTAL | | | | | | | | | | | | 26 |

Professional Elective - I

| Subject Code | Title of the Subject | Subject Code | Title of the Subject |
|--------------|----------------------|--------------|------------------------|
| CV661 | Theory of Elasticity | CV665 | Ground Water Hydrology |




| | | | |
|-------|---|-------|---------------------------------------|
| CV662 | Alternate Building materials & Technologies | CV666 | Solid Waste Management |
| CV663 | Ground Improvement Techniques | CV667 | Traffic Engineering |
| CV664 | Advanced Surveying | CV668 | Repair & Rehabilitation of Structures |

Dr


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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
 SCHEME OF TEACHING AND EXAMINATION
 Batch 2017 - 2018
 B.E (Civil Engineering)
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
VII SEMESTER

| Sl. No. | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits | |
|--------------|------------------------|---|---------------------|----------------------|-----------|----------------------|-------------------|-------------|-----------|-------------|---------|----|
| | | | | Theory Lecture | Tutorials | Practical/ Drawing P | | CIE Marks | SEE Marks | Total Marks | | |
| 1 | CV71 | Design of Steel Structures | BS | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 | |
| 2 | CV72 | Estimation and Valuation | CV | 2 | 2 | -- | 3 | 50 | 50 | 100 | 3 | |
| 3 | CV73 | Design of Prestressed Concrete Structures | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 4 | CV74X | Professional Elective - II | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 5 | CV75X | Professional Elective - III | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 | |
| 6 | CVL76 | Environmental Engineering Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 3 | |
| 7 | CVL77 | Concrete and Highway Materials Lab | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 1.5 | |
| 8 | CVEXX | Interdepartmental Elective - I | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 1.5 | |
| 9 | CVP78 | Project work Phase - I | CV | | | | | | | | 4 | |
| TOTAL | | | | | | | | | | | PP / NP | 23 |


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| Professional Elective - II | | Professional Elective - III | | Interdepartmental Elective | |
|----------------------------|---|-----------------------------|--|----------------------------|-----------------------------------|
| Subject Code | Title of the Subject | Subject Code | Title of the Subject | Subject Code | Title of the Subject |
| CV741 | Matrix Method of Structural Analysis | CV751 | Numerical methods in Civil Engineering | CVE01 | Integrated Solid Waste Management |
| CV742 | Advanced Design of RC Structures | CV752 | Rock Mechanics | CVE02 | Air Pollution and Control methods |
| CV743 | Design of Masonry Structures | CV753 | Pavement Materials and Construction | | |
| CV744 | Earth and Earth Retaining Structures | CV754 | Photogrammetry and Remote Sensing | | |
| CV745 | Highway Geometric Design | CV755 | Air Pollution and Control | | |
| CV746 | Open Channel Hydraulics | CV756 | Design and Drawing of Bridges. | | |
| CV747 | Rural Water Supply and Sanitation Engineering | CV757 | Structural Dynamics | | |
| | | CV758 | Construction Project Management | | |


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Batch 2017 - 2018
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bengaluru - 560 056.

VIII SEMESTER

| Sl No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
|--------------|------------------------|---|---------------------|----------------------|----------|--------------------|-------------------|-----------|-----------|-------------|-----------|
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | HS04 | Intellectual Property Rights | HSS | 2 | -- | -- | 3 | 50 | 50 | 100 | 2 |
| 2 | CV81 | Design and Computer Aided Drawing of Steel Structures | CV | -- | 1 | 3 | 3 | 50 | 50 | 100 | 2 |
| 3 | CV82X | Professional Elective - IV | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 4 | CV83X | Professional Elective - V | CV | 3 | -- | -- | 3 | 50 | 50 | 100 | 3 |
| 5 | CVEXX | Interdepartmental Elective - II | CV | 4 | -- | -- | 3 | 50 | 50 | 100 | 4 |
| 6 | CVP84 | Project work Phase - II | CV | -- | -- | 3 | 3 | 50 | 50 | 100 | 12 |
| 7 | CVS85 | Seminar | CV | -- | 4 | -- | 3 | 50 | 50 | 100 | 2 |
| TOTAL | | | | | | | | | | | 28 |

Professional Elective


Interdepartmental Elective

Professional Elective - IV

Professional Elective - V

Interdepartmental Elective - II

| | | | | | |
|--------------|--|--------------|-------------------------------------|--------------|--|
| Subject Code | Title of the Subject | Subject Code | Title of the Subject | Subject Code | Title of the Subject |
| CV821 | Advanced Pre-stressed Concrete Structures | CV831 | Finite Element Analysis | CVE03 | Ecology and Environmental Impact Assessment |
| CV822 | Advanced Foundation Design | CV832 | Reinforced Earth Structures | CVE04 | Remote Sensing and Geographic Information System |
| CV823 | Pavement Design | CV833 | Urban Transport Planning | | |
| CV824 | Earthquake Resistant Design of Structures | CV834 | Advanced Design of Steel Structures | | |
| CV825 | Industrial Waste Water Treatment | CV835 | Water Resources Engineering | | |
| CV826 | Quality Management System in Civil Engineering | CV836 | Environmental Impact Assessment | | |
| CV827 | Remote Sensing and Geographic Information System | CV837 | Infrastructure Development | | |


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Dr. Ambedkar Institute of Technology

(An Autonomous Institute, Affiliated to VTU, Accredited by NAAC with 'A' grade)

Department of CIVIL ENGINEERING

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2017-18

M. Tech in STRUCTURAL ENGINEERING

I Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--|---------------------|-------------------------|-----------------------------|-------------------|------------------------|------------|-----------|---------------------|
| | | | | Lecture | Tutorial/Seminar/Assignment | Practical/Project | CIE | SEE | Total | |
| 1. | CSE11 | Computational Structural Mechanics | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 2. | CSE12 | Advanced Design of RC Structures | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 3. | CSE13 | Mechanics of Deformable bodies | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 4. | CSE14 | Structural Dynamics | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 5. | CSE15X | Elective - 1 | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 6. | CSEL16 | Structural Engineering Lab - 1 | .... | - | - | 3 | 50 | 50 | 100 | 2 |
| 7. | CSE17 | Seminar | .... | - | 2 | - | 50 | - | 50 | 2 |
| 8. | CSE18 | Mini Project/Field work/ Technical visit | .... | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 400 | 300 | 50 | 21 |

Technical Seminar: Seminar on Advanced topics from refereed journals by each student.

ELECTIVE I

| Sl. No | Name of the Subject | Subject Code |
|--------|---|--------------|
| 1 | Advanced Design of Pre-stresses Concrete Structures | CSE151 |
| 2 | Special Concrete | CSE152 |
| 3 | Design of Pre-cast and Composite Structures | CSE153 |
| 4 | Reliability Analysis of Structures | CSE154 |

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Bangalore - 560 075

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Department of CIVIL ENGINEERING

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2017-18

M. Tech in STRUCTURAL ENGINEERING

Professor and Head

Department of Civil Engineering

Dr. Ambedkar Institute of Technology

Bangalore - 560 056.

II Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|-------------------------------------|---------------------|-------------------------|-------------------------------|---------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Project | CIE | SEE | Total | |
| 1. | CSE21 | Advanced Design of Steel Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 2. | CSE22 | Earthquake Resistant Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 3. | CSE23 | Finite Element Method of Analysis | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 4. | CSE24 | Design Concepts of Sub-structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 5. | CSE25X | Elective - II | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 6. | CSEL26 | Structural Engineering Lab - II | ..... | - | - | 3 | 50 | 50 | 100 | 2 |
| 7. | CSES27 | Research Methodology | ..... | - | 2 | - | 50 | 50 | 100 | 2 |
| 8. | CSEM28 | Seminar | ..... | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 400 | 350 | 750 | 21 |

ELECTIVE-II

| Sl. No | Name of the Subject | Subject Code |
|--------|---------------------------------------|--------------|
| 1 | Design of Tall Structures | CSE251 |
| 2 | Repair & Rehabilitation of Structures | CSE252 |
| 3 | Stability of Structures | CSE253 |
| 4 | Design of Plates and Shells | CSE254 |

Internship: All the students have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted for the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.


Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2017-18
M. Tech in STRUCTURAL ENGINEERING

III Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--|---------------------|-------------------------|-------------------------------|-----------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical /Field Work | CIE | SEE | Total | |
| 1. | CSE31 | Seminar/Presentation on Internship (After 8 weeks from the date of commencement) | .... | 04 | - | - | 50 | 50 | 100 | 4 |
| 2. | CSE32 | Report on Internship | ..... | 04 | - | - | 50 | 50 | 100 | 3 |
| 3. | CSE33 | Evaluation and Viva-Voce | ..... | 04 | - | - | 50 | 50 | 100 | 3 |
| 4 | CSE34 | Project Phase - 1 | ..... |  |  |  | 50 | 50 | 100 | 8 |
| Total | | | | | | | 200 | 200 | 400 | 18 |

Note:

- Technical Seminar:** CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory. The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report.
- Project Phase-1:** Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase - 1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session SEE as per the norms
- SEE as per the norms**
- Internship:** Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent SEE examinations after satisfying the internship requirements. Internship SEE shall be as per the norms.


Professor and Head
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Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION (Autonomous) 2017-18
M. Tech in STRUCTURAL ENGINEERING

IV Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits | |
|--|----------|--------------------------------------|---------------------|-------------------------|-------------------------------|-----------------------|------------------------|------------|------------|---------------------|--|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical /Field Work | CIE | SEE | Total | | |
| 1 | CSE41 | Design of Concrete Bridge Structures | ..... | - | - | - | 50 | 50 | 100 | 3 | |
| 2 | CSE42X | Elective - III | | | | | 50 | 50 | 100 | 3 | |
| | CSE43 | Project Phase - II | | | | | 50 | - | 50 | 2 | |
| | CSE44 | Evaluation of Project and Viva-Voce | | | | | 100 | 100 | 200 | 20 | |
| Total | | | | | | | 250 | 200 | 450 | 28 | |
| Grand Total (I to IV Semester) : 88 Credits | | | | | | | | | | | |

| Elective III | | Subject Code |
|--------------|---|--------------|
| 1 | Optimization Techniques | CSE421 |
| 2 | Design of Industrial Structures | CSE422 |
| 3 | Theory of Plasticity and Fracture Mechanics | CSE423 |
| 4 | Masonry structures | CSE424 |

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25. SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the norms.

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 Bangalore - 560 059.

Dr. Ambedkar Institute of Technology, Bengaluru – 560 056
Scheme of Teaching and Examination from the Academic Year 2018-19
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

I SEMESTER B.E (PHYSICS GROUP)

| Sl. No | Course and Course Code | Course Title | Teaching Department | Paper Setting Board | Teaching Hours / Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|------------------------------------|------------------------|-----------------------|-----------|-----------|-------------------|-------------|------------|-------------|-----------|
| | | | | | L | T | P | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA11 | Calculus and Linear Algebra | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC 18PH12 | Engineering Physics | Physics | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES 18EE13 | Basic Electrical Engineering | E and E Engineering | E and E Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES 18CV14 | Civil Engineering and Mechanics | Civil Engineering | Civil Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES 18MEL15 | Engineering Graphics and Design | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | -- | 2 | 03 | 50 | 50 | 100 | 3 |
| 6 | BC 18PHL16 | Engineering Physics Laboratory | Physics | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES 18EEL17 | Basic Electrical Engineering Laboratory | E and E Engineering | E and E Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu 18HS11/ 18HS12 | English/ Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | 13 | 06 | 08 | 21 | 350 | 350 | 700 | 20 |

Professor and Head

Department of Civil Engineering

Dr. Ambedkar Institute of Technology
 Bangalore - 560 056.



Ug- 2018-19

Dr. Ambedkar Institute of Technology, Bengaluru – 560 056
Scheme of Teaching and Examination from the Academic Year 2018-19
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
II SEMESTER B.E (CHEMISTRY GROUP)

| Sl. No | Course and Course Code | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | | Examination | | | | Credits |
|--------------|------------------------|---|------------------------------------|----------------------------------|----------------------|-----------|-----------|-------------------|------------|------------|-------------|-----------|
| | | | | | L | T | P | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA21 | Advanced Calculus and Numerical Methods | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC 18CH22 | Engineering Chemistry | Chemistry | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES 18CS23 | C Programming for Problem Solving | Computer Science and Engineering | Computer Science and Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES 18ELN24 | Basic Electronics | ECE/E and I/ TC | E and C Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES 18ME25 | Elements of Mechanical Engineering | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | BC 18CHL26 | Engineering Chemistry Laboratory | Chemistry | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES 18CSL27 | Computer Programming Laboratory | Computer Science and Engineering | Computer Science and Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu 18HSS21/ 18HSS22 | English /Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | 13 | 08 | 06 | 23 | 400 | 400 | 800 | 20 |

Note: BC: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

Professor



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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| Sl. No | | Course and Course Code | | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
|---|----|------------------------|---|--------------|---------------------|----------------------|-----------|-----------|-------------------|------------|------------|-------------|-----------|
| | | | | | | L | T | P | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC | 18MA31 | Transform calculus and Special functions | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 | |
| 2 | PC | 18CV31 | Building Materials and Construction | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 | |
| 3 | PC | 18CV32 | Strength of Materials | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 | |
| 4 | PC | 18CV33 | Surveying | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 | |
| 5 | PC | 18CV34 | Fluid Mechanics | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 3 | |
| 6 | PC | 18CV35 | Applied Engineering Geology | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 1 | |
| 7 | PC | 18CVL36 | Civil Engg. Material Testing Laboratory | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | PC | 18CVL37 | Surveying Practice | CV | --- | --- | 3 | 03 | 50 | 50 | 100 | 1 | |
| 9 | HS | 18HS31/32 | Constitution of India Professional Ethics and Human Rights/ Environmental Science | HS/CV | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 | |
| 10 | MC | 18HS33 | Soft skills (MC) | Humanities | 04 | - | -- | 03 | 50 | - | 50 | 0 | |
| | | | | | TOTAL | 19 | 02 | 05 | 29 | 500 | 450 | 950 | 24 |
| Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs | | | | | | | | | | | | | |
| 11 | MC | 18MAD31 | Basic Engg Mathematics - I | Mathematics | 02 | 01 | -- | 03 | 50 | | 50 | 0 | |

Note: BC: Science Course, PC: Professional Core. Hu: Humanities, MC: Mandatory Course.

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

IV SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|---------------------|----------------------|-----------|-----------|-------------------|-------------|------------|-------------|-----------|
| | | | | L | T | P | | CC Marks | SE Marks | Total Marks | |
| 1 | BC 18MA41 | Numerical methods and Probability | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV41 | Water Supply Engineering | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 3 | PC 18CV42 | Analysis of Determinate Structures | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 4 | PC 18CV43 | Hydraulics and Hydraulic Machines | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 5 | PC 18CV44 | Hydrology and Irrigation Engineering | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 6 | PC 18CV45 | Concrete Technology | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 7 | PC 18CVL46 | Computer Aided Building Planning and Drawing | CV | --- | 1 | 3 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL47 | Concrete & Highway materials Lab | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | HS 18HS41/42 | Constitution of India Professional Ethics and Human Rights/ Environmental Science | HS/CV | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 |
| 10 | MC 18HS43 | Employability skills (MC) | Humanities | 04 | - | -- | 03 | 50 | - | 50 | 0 |
| TOTAL | | | | 25 | 03 | 05 | 29 | 500 | 450 | 950 | 24 |

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| MC | 18MAD41 | Basic Engg Mathematics - II | Mathematics | 02 | 01 | -- | 03 | 50 | | 50 | 0 |
|----|---------|-----------------------------|-------------|----|----|----|----|----|--|----|---|
|----|---------|-----------------------------|-------------|----|----|----|----|----|--|----|---|

Note: BC: Science Course, PC: Professional Core, Hu: Humanities, NCMC: Non-Credit Mandatory Course.
 ENV: Environmental Studies, CIP: Constitution of India Professional Ethics and Human Rights

(Signature)

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

V SEMESTER

| Sl. No. | Course and Code | Course Description | Requiring Department | Teaching Hours /Week | | | | Duration in Semesters | Examination | | | Credits |
|--------------|-----------------|---|----------------------|----------------------|----------|-----------|------------|-----------------------|----------------|----------------|-------|---------|
| | | | | L | T | P | Assessment | | Internal Marks | Terminal Marks | | |
| 1 | HS 18HS51/52 | M&E / IPR (title as per BOS decision) | Hu | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 2 | PC 18CV51 | Wastewater Treatment and Disposal | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 3 | PC 18CV52 | Design of RCC Structural Elements | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 4 | PC 18CV53 | Analysis of Indeterminate Structures | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 5 | PC 18CV54 | Geotechnical Engineering | CV | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 | |
| 6 | PE 18CV55X | Professional Elective - 1 | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 7 | OE 18CV56X | Open Elective - A | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 8 | PC 18CVL57 | Hydraulics and Hydraulic Machinery Laboratory | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 9 | PC 18CVL58 | Computer Aided Design Laboratory | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 10 | HS 18HS55 | Placement Training | Hu | 2 | -- | -- | 03 | 50 | -- | 50 | PP/NP | |
| TOTAL | | | 25 | 25 | 4 | 30 | 500 | 450 | 950 | 25 | | |

Electives

Professional Electives - 1

| | |
|---------|-------------------------------|
| 18CV551 | Transportation Engineering |
| 18CV552 | Theory of Elasticity |
| 18CV553 | Ground Improvement Techniques |
| 18CV554 | Advanced Surveying |
| 18CV555 | Ground Water Hydrology |

OPEN ELECTIVE - A

| | |
|---------|-----------------------------------|
| 18CV561 | Air Pollution and Control |
| 18CV562 | Integrated Solid Waste Management |

Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department.

Selection of an open elective is not allowed provided:

- The candidate has studied the same course during the previous semesters of the programme.
- The syllabus content of open elective is similar to that of Departmental core courses or professional electives.
- A similar course, under any category, is prescribed in the higher semesters of the programme.

Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
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Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056

VI SEMESTER

| Sl. No | Course and Code | Course Title | Exam. Type | Teaching Hours/Week | | | | Duration in hours | Examination | | | Credits |
|--------------|-----------------|---|------------|---------------------|----------|----------|-----------|-------------------|-------------|------------|-------------|-----------|
| | | | | L | T | P | Practical | | SEE Marks | CIE Marks | Total Marks | |
| 1 | HS 18HS61/62 | M&E/IPR | Hu | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV61 | Design of Steel Structures | CV | 3 | 2 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | PC 18CV62 | Railways, Airport, Tunnel and Harbour Engineering | CV | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | PC 18CV63 | Foundation Engineering | CV | 2 | 2 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | PE 18CV64X | Professional Elective - 2 | CV | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | OE 18CV65X | Open Elective - B | CV | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 7 | PC 18CVL66 | Computer Aided Drawing of RC and Steel structures | CV | -- | -- | 2 | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL67 | Geotechnical Engineering Laboratory | CV | -- | -- | 2 | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | M 18CVM68 | Mini-Project | | | | | | 03 | 50 | 50 | 100 | 2 |
| 10 | PC 18CVL69 | Extensive Survey Project | CV | -- | -- | 2 | 2 | 03 | 50 | 50 | 100 | 1 |
| 11 | HS 18HS66 | Placement Training | Hu | 2 | -- | -- | -- | 03 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | 20 | 2 | 2 | 6 | 33 | 550 | 500 | 1050 | 24 |

Note: PC: Professional Core, PE: Professional Elective, OE: Open Elective, MP: Mini-Project, INT: Internship.

Internship: All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters.

A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester.

Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.


| Course code | Professional Electives - 2 | Electives | |
|-------------|---|-------------------|--|
| | | Open Elective - B | |
| 18CV641 | Pre-Stressed Concrete | | Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided. |
| 18CV642 | Alternate Building Materials and Technologies | | |
| 18CV643 | Traffic Engineering | | |

| | | |
|---------|--------------------------------------|---|
| 18CV644 | Open Channel Hydraulics | <ul style="list-style-type: none"> • The candidate has studied the same course during the previous semesters of the programme. • The syllabus content of open elective is similar to that of Departmental core courses or professional electives. • A similar course, under any category, is prescribed in the higher semesters of the programme. Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor. |
| 18CV645 | Earth and Earth Retaining Structures | |
| | Open Elective - B | |
| 18CV651 | Integrated Solid Waste Management | |
| 18CV652 | Photogrammetry and Remote Sensing | |



Professor and Head
Department of Civil Engineering
† Anbaskar Institute of Technology
Bangalore - 560 066

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

Professor and Head

Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

VII SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits | |
|--------------|------------------------|-----------------------------------|---|----------------------|-----------|----------|-------------------|-------------|------------|-------------|-----------|----|
| | | | | L | T | P | | CIE Marks | SEE Marks | Total Marks | | |
| 1 | MC 18HS71/72 | CMEP / OSHA | IM/CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 2 | |
| 2 | PC 18CV71 | Design of RC & Steel Structures . | CV | 4 | -- | -- | 03 | 50. | 50 | 100 | 4 | |
| 3 | PC 18CV72 | Estimation and Valuation | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 4 | PE 18CV73X | Professional Elective - 3 | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 5 | PE 18CV74X | Professional Elective - 4 | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 6 | OE 18CV75X | Open Elective - C | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 7 | PC 18CVL76 | Environmental Engg. Laboratory. | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | PC 18CVL77 | Advanced Civil Engg. Laboratory | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | Project 18CVP78 | Project Work Phase - I | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 2 | |
| 9 | INT 18CVI79 | Internship | (If not completed after VI semester examinations, it has to be carried out during the intervening vacations of VII and VIII semesters) | | | | | | | | | -- |
| TOTAL | | | | 19 | -- | 6 | 27 | 450 | 450 | 900 | 23 | |

Note:
 PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
 CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:
 All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters.
 A SEE examination will be conducted during VIII semester and prescribed credits shall be added to VIII semester.
 Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent SEE examination after satisfy the internship requirements.

| Course code | Professional Electives - 3 | Open Elective - B |
|-------------|-------------------------------------|-------------------|
| 18CV731 | Pavement Materials and Construction | |


| | | |
|---------|-----------------------------------|--|
| 18CV732 | Photogrammetry and Remote Sensing | Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided, ✓ The candidate has studied the same course during the previous semesters of the programme. ✓ The syllabus content of open elective is similar to that of Departmental core courses or professional electives. ✓ A similar course, under any category, is prescribed in the higher semesters of the programme. ✓ Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor. |
| 18CV733 | Environmental Impact Assessment | |
| 18CV734 | Design of Bridges | |
| 18CV735 | Structural Dynamics | |
| 18CV736 | Construction Project Management | |
| 18CV737 | Reinforced Earth Structures | |

Electives : 4

| Course code | Professional Elective |
|-------------|--|
| 18CV741 | Water Resources Engineering |
| 18CV742 | Advanced Foundation Design |
| 18CV743 | Pavement Design |
| 18CV744 | Earthquake Resistant Design of Structures |
| 18CV745 | Solid Waste Management |
| 18CV746 | Quality Management System in Civil Engineering |
| 18CV747 | Hydraulic Structures & Irrigation drawing |

Electives : B

| Course code | Open Elective - C |
|-------------|---|
| 18CV751 | Ecology and Environmental Impact Assessment |
| 18CV752 | Urban Transport Planning |
| 18CV753 | Photo Geology and Remote Sensing |


Professor
 Department of Civil Engineering
 Anbedkar Institute of Technology
 Bangalore - 560 030.

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2018-19
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| VIII SEMESTER | | | | | | | | | | | |
|---------------|------------------------|-------------------------|--|----------------------|-----------|----------|-------------------|------------|------------|-------------|-----------|
| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
| | | | | L | T | P | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | MC 18HS81/82 | CMEP / OSHA | IM / CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 2 |
| 2 | Project 18CVP81 | Project Work Phase - II | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 10 |
| 3 | Seminar 18CVS82 | Technical Seminar | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 4 | INT 18CV183 | Internship | (Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.) | | | | 03 | 50 | 50 | 100 | 2 |
| TOTAL | | | | 02 | -- | 4 | 12 | 200 | 200 | 400 | 15 |

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
 CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

Those, who have not pursued /completed the internship will be declared as failed and have to complete during subsequent SEE examination after they satisfy the internship requirements.

Total 175 Credit Distributions for all semester B.E. (Civil Engineering) Programme.

| Semester | I | II | III | IV | V | VI | VII | VIII | Total Credits |
|----------|----|----|-----|----|----|----|-----|------|---------------|
| Credits | 20 | 20 | 24 | 24 | 25 | 24 | 23 | 15 | 175 |

Dr. Ambedkar Institute of Technology

(An Autonomous Institute, Affiliated to VTU, Accredited by NAAC with 'A' grade)

Department of CIVIL ENGINEERING

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2018-19

M. Tech in STRUCTURAL ENGINEERING

II Semester M TECH

Professor and Head
Department of Civil Engineering
Ambedkar Institute of Technology
Bangalore - 560 086.

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--|---------------------|-------------------------|-----------------------------|-------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/Seminar/Assignment | Practical/Project | CIE | SEE | Total | |
| 1. | 18CSE21 | Advanced Design of Steel Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 2. | 18CSE22 | Earthquake Resistant Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 3. | 18CSE23 | Finite Element Method of Analysis | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 4. | 18CSE24 | Design Concepts of Sub Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 5. | 18CSE25X | ELECTIVE - II | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 6. | 18CSEL26 | Structural Engineering Laboratory - II | ..... | - | - | 3 | 50 | 50 | 100 | 2 |
| 7. | 18RM27 | Research Methodology | ..... | - | 2 | - | 50 | 50 | 100 | 2 |
| 8. | 18CSEM28 | Mini project/ Industry visit/ Field work | ..... | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 400 | 350 | 750 | 21 |

ELECTIVE-II

| Sl. No | Name of the Subject | Subject Code |
|--------|---|--------------|
| 1 | Design of Tall Structures | 18 CSE 251 |
| 2 | Repair and Rehabilitation of Structures | 18 CSE 252 |
| 3 | Stability of Structures | 18 CSE 253 |
| 4 | Design of Plates and Shells | 18 CSE 254 |

Internship: All the students have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and/or II and III semesters. A University examination shall be conducted during III se and the prescribed credit shall be counted for the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not takeup/comp internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.

III Semester M TECH

Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2018-19
M. Tech in STRUCTURAL ENGINEERING

Professor and Head
 Department of Civil Engineering
 Dr. Ambedkar Institute of Technology
 Bangalore - 560 056.

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--------------------------------------|---------------------|-------------------------|-------------------------------|------------------------|------------------------|-----|-------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1. | 18CSE31 | Design of Concrete Bridge Structures | .... | 04 | - | - | 50 | 50 | 100 | 4 |
| 2. | 18CSE32X | Professional Elective 3 | .... | 04 | - | - | 50 | 50 | 100 | 3 |
| 3. | 18CSE33X | Professional Elective 4 | .... | 04 | - | - | 50 | 50 | 100 | 3 |
| 4 | 18CSEI34 | Internship | .... |  |  |  | 50 | 50 | 100 | 8 |
| 5 | 18CSE35 | Technical Seminar | .... |  |  |  | 50 | - | 50 | 2 |
| 6. | 18CSE36 | Project phase - I | ..... | - | - | - | 50 | - | 50 | 2 |
| Total | | | | | | | | | | 22 |

Note:

- Technical Seminar:** CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory. The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session
- Project Phase-I:** Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prep relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase - I, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session
- SEE as per the norms

| Professional Elective 3 | | | Professional Elective 4 | | |
|-------------------------|---|--------------|-------------------------|--------------------------------------|--------------|
| Sl. No | Name of the Subject | Subject Code | Sl. No | Name of the Subject | Subject Code |
| 1 | Design of Industrial Structures | 18CSE321 | 1 | Optimization Techniques | 18CSE331 |
| 2 | Theory of Plasticity and Fracture Mechanics | 18CSE322 | 2 | Composites and Smart materials | 18CSE332 |
| 3 | Masonry structures | 18CSE323 | 3 | Advanced Structural Mechanics | 18CSE333 |
| | | 18CSE324 | 4 | Earth and Earth Retaining Structures | 18CSE334 |

4. **2. Internship:** Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent SEE examinations after satisfying the internship requirement. Internship SEE shall be as per the norms.

Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION (Autonomous) 2018-19
M. Tech in STRUCTURAL ENGINEERING

IV Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--|----------|---|---------------------|-------------------------|-------------------------------|------------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1 | 18CSEP41 | Project Work Phase II – Midterm Internal Evaluation | ..... | - | - | - | 50 | | 50 | 2 |
| 2 | 18CSEP42 | Project work evaluation and viva voce | | | | | 100 | 100 | 200 | 22 |
| Total | | | | | | | 150 | 100 | 250 | 24 |
| Grand Total (I to IV Semester) : 88 Credits | | | | | | | | | | |


1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. The CIE marks awarded for project work phase -2, shall be base the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25. SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the norms.

(Signature)
Professor and Head
Department of Civil Engineering
Ambedkar Institute of Technology
Bangalore - 562 056.

Dr. Ambedkar Institute of Technology, Bengaluru - 560 056
Scheme of Teaching and Examination from the Academic Year 2019-20
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
I SEMESTER B.E (PHYSICS GROUP)

| Sl. No | Course and Course Code | Course Title | Teaching Department | Paper Setting Board | Teaching Hours/Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|------------------------------------|------------------------|---------------------|-----------|-----------|-------------------|-------------|------------|-------------|-----------|
| | | | | | L | T | P | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA11 | Calculus and Linear Algebra | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC 18PH12 | Engineering Physics | Physics | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES 18EE13 | Basic Electrical Engineering | E and E Engineering | E and E Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES 18CV14 | Civil Engineering and Mechanics | Civil Engineering | Civil Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES 18MEL15 | Engineering Graphics and Design | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | -- | 2 | 03 | 50 | 50 | 100 | 3 |
| 6 | BC 18PHL16 | Engineering Physics Laboratory | Physics | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES 18EEL17 | Basic Electrical Engineering Laboratory | E and E Engineering | E and E Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu 18HS11/ 18HS12 | English/ Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | 13 | 06 | 08 | 21 | 350 | 350 | 700 | 20 |


Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

UG - 2019-20

Dr. Ambedkar Institute of Technology, Bengaluru - 560 056
Scheme of Teaching and Examination from the Academic Year 2019-20
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
II SEMESTER B.E (CHEMISTRY GROUP)

| Sl. No | Course and Course Code | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | | Examination | | | | Credits |
|--------------|------------------------|---|------------------------------------|----------------------------------|----------------------|-----------|-----------|-------------------|------------|------------|-------------|-----------|
| | | | | | L | T | P | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA21 | Advanced Calculus and Numerical Methods | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC 18CH22 | Engineering Chemistry | Chemistry | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES 18CS23 | C Programming for Problem Solving | Computer Science and Engineering | Computer Science and Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES 18ELN24 | Basic Electronics | ECE/E and I/ TC | E and C Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES 18ME25 | Elements of Mechanical Engineering | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | BC 18CHL26 | Engineering Chemistry Laboratory | Chemistry | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES 18CSL27 | Computer Programming Laboratory | Computer Science and Engineering | Computer Science and Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu 18HS21/ 18HS22 | English /Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | 13 | 08 | 06 | 23 | 400 | 400 | 800 | 20 |

Note: BC: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

A

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2019-20
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| III SEMESTER | | | | | | | | | | | |
|--|------------------------|---|---------------------|----------------------|-----------|-----------|-------------------|-------------|------------|-------------|-----------|
| Sl. No | Course and Course Code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits |
| | | | | L | T | P | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA31 | Transform calculus and Special functions | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV31 | Building Materials and Construction | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 3 | PC 18CV32 | Strength of Materials | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 4 | PC 18CV33 | Surveying | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 5 | PC 18CV34 | Fluid Mechanics | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 6 | PC 18CV35 | Applied Engineering Geology | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 7 | PC 18CVL36 | Civil Engg. Material Testing Laboratory | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL37 | Surveying Practice | CV | --- | --- | 3 | 03 | 50 | 50 | 100 | 1 |
| 9 | HS 18HS31/32 | Constitution of India Professional Ethics and Human Rights/ Environmental Science | HS/CV | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 |
| 10 | MC 18HS33 | Soft skills (MC) | Humanities | 04 | - | -- | 03 | 50 | - | 50 | 0 |
| TOTAL | | | | 19 | 02 | 05 | 29 | 500 | 450 | 950 | 24 |
| Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs | | | | | | | | | | | |
| 11 | MC 18MAD31 | Basic Engg Mathematics - I | Mathematics | 02 | 01 | -- | 03 | 50 | | 50 | 0 |

Note: BC: Science Course, PC: Professional Core, Hu: Humanities, MC: Mandatory Course.



Dr. Ambedkar Institute of Technology, Bengaluru-560 056
 SCHEME OF TEACHING AND EXAMINATION from Academic Year 2019-20
 B.E (Civil Engineering)
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)


IV SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|---------------------|----------------------|-------------------|----------------------------|-------------------|-------------|------------|-------------|-----------|
| | | | | Theory Lectur L | Tutori al T | Practical/ Drawing P | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BC 18MA41 | Numerical methods and Probability | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV41 | Water Supply Engineering | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 3 | PC 18CV42 | Analysis of Determinate Structures | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 4 | PC 18CV43 | Hydraulics and Hydraulic Machines | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 5 | PC 18CV44 | Hydrology and Irrigation Engineering | CV | 3 | --- | --- | 03 | 50 | 50 | 100 | 3 |
| 6 | PC 18CV45 | Concrete Technology | CV | 4 | --- | --- | 03 | 50 | 50 | 100 | 4 |
| 7 | PC 18CVL46 | Computer Aided Building Planning and Drawing | CV | --- | 1 | 3 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL47 | Concrete & Highway materials Lab | CV | --- | --- | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | HS 18HS41/42 | Constitution of India Professional Ethics and Human Rights/ Environmental Science | HS/CV | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 |
| 10 | MC 18HS43 | Employability skills (MC) | Humanities | 04 | - | -- | 03 | 50 | - | 50 | 0 |
| TOTAL | | | | 25 | 03 | 05 | 29 | 500 | 450 | 950 | 24 |

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| MC | 18MAD41 | Basic Engg Mathematics - II | Mathematics | 02 | 01 | -- | 03 | 50 | | 50 | 0 |
|----|---------|-----------------------------|-------------|----|----|----|----|----|--|----|---|
|----|---------|-----------------------------|-------------|----|----|----|----|----|--|----|---|

Note: BC: Science Course, PC: Professional Core, Hu: Humanities, NCMC: Non-Credit Mandatory Course.
 ENV: Environmental Studies, CIP: Constitution of India Professional Ethics and Human Rights


Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056

V SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|---------------------|----------------------|-----------|-------------------|-------------------|-------------|------------|-------------|-----------|
| | | | | Theory Lectur e | Tutori al | Practic al/ Drawi | | CIE Marks | SEE Marks | Total Marks | |
| 1 | HS 18HS51/52 | M&E / IPR (title as per BOS decision) | Hu | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV51 | Wastewater Treatment and Disposal | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 3 | PC 18CV52 | Design of RCC Structural Elements | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 4 | PC 18CV53 | Analysis of Indeterminate Structures | CV | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 5 | PC 18CV54 | Geotechnical Engineering | CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | PE 18CV55X | Professional Elective - 1 | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 7 | OE 18CV56X | Open Elective - A | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 8 | PC 18CVL57 | Hydraulics and Hydraulic Machinery Laboratory | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | PC 18CVL58 | Computer Aided Design Laboratory | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 10 | HS 18HS55 | Placement Training | Hu | 2 | -- | -- | 03 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | 25 | -- | 4 | 30 | 500 | 450 | 950 | 25 |

Electives

Professional Electives - 1

| | |
|---------|-------------------------------|
| 18CV551 | Transportation Engineering |
| 18CV552 | Theory of Elasticity |
| 18CV553 | Ground Improvement Techniques |
| 18CV554 | Advanced Surveying |
| 18CV555 | Ground Water Hydrology |

OPEN ELECTIVE - A

| | |
|---------|-----------------------------------|
| 18CV561 | Air Pollution and Control |
| 18CV562 | Integrated Solid Waste Management |

Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department.
 Selection of an open elective is not allowed provided:

- The candidate has studied the same course during the previous semesters of the programme.
- The syllabus content of open elective is similar to that of Departmental core courses or professional electives.

• A similar course, under any category, is prescribed in the higher semesters of the programme. Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.

VI SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours / Week | | | Duration in hours | Examination | | | Credits |
|--------------|------------------------|---|---------------------|-----------------------|----------|----------|-------------------|-------------|------------|-------------|-----------|
| | | | | L | T | P | | CIE Marks | SEE Marks | Total Marks | |
| 1 | HS 18HS61/62 | M&E/IPR | Hu | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV61 | Design of Steel Structures | CV | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | PC 18CV62 | Railways, Airport, Tunnel and Harbour Engineering | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | PC 18CV63 | Foundation Engineering | CV | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | PE 18CV64X | Professional Elective - 2 | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | OE 18CV65X | Open Elective - B | CV | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 7 | PC 18CVL66 | Computer Aided Drawing of RC and Steel structures | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL67 | Geotechnical Engineering Laboratory | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | M 18CVM68 | Mini-Project | | | | | 03 | 50 | 50 | 100 | 2 |
| 10 | PC 18CVL69 | Extensive Survey Project | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 11 | HS 18HS66 | Placement Training | Hu | 2 | -- | -- | 03 | 50 | -- | 50 | PP/NP |
| TOTAL | | | | 20 | 2 | 6 | 33 | 550 | 500 | 1050 | 24 |

Note: PC: Professional Core, PE: Professional Elective, OE: Open Elective, MP: Mini-Project, INT: Internship.

Internship: All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters.

A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester.

Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

Electives

| Course code | Professional Electives - 2 | Open Elective - B |
|-------------|---|--|
| 18CV641 | Pre-Stressed Concrete | Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided. |
| 18CV642 | Alternate Building Materials and Technologies | |
| 18CV643 | Traffic Engineering | |

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2019-20
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

| VIII SEMESTER | | | | | | | | | | | | |
|---------------|------------------------|-------------------------|--|----------------------|-----------|---------------------|-------------------|-------------|------------|-------------|-----------|--|
| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Duration in hours | Examination | | | Credits | |
| | | | | Theory Lecture | Tutorial | Practical / Drawing | | CIE Marks | SEE Marks | Total Marks | | |
| 1 | MC 18HS81/82 | CMEP / OSHA | IM / CV | L 2 | T -- | P -- | 03 | 50 | 50 | 100 | 2 | |
| 2 | Project 18CV/P81 | Project Work Phase - II | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 10 | |
| 3 | Seminar 18CV/S82 | Technical Seminar | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 4 | INT 18CV/183 | Internship | (Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.) | -- | -- | 4 | 03 | 50 | 50 | 100 | 2 | |
| TOTAL | | | | 02 | -- | 4 | 12 | 200 | 200 | 400 | 15 | |

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
 CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

Those, who have not pursued /completed the internship will be declared as failed and have to complete during subsequent SEE examination after they satisfy the internship requirements.

Total 175 Credit Distributions for all semester B.E. (Civil Engineering) Programme.

| Semester | I | II | III | IV | V | VI | VII | VIII | Total Credits |
|----------|----|----|-----|----|----|----|-----|------|---------------|
| Credits | 20 | 20 | 24 | 24 | 25 | 24 | 23 | 15 | 175 |

Professor and Head

**Department of Civil Engineering,
Dr. Ambedkar Institute of Technology**

Bangalore - 560 036.

Dr. Ambedkar Institute of Technology, Bengaluru-560 056

SCHEME OF TEACHING AND EXAMINATION from Academic Year 2019-20

B.E (Civil Engineering)

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

VII SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | | | Examination | | | | Credits |
|--------------|------------------------|---------------------------------|---|----------------------|-----------|-----------|----------|-------------------|-------------|------------|-------------|-----------|---------|
| | | | | Theory | Tutorial | Practical | Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | | |
| | | | | | | | | | | | | L |  | T | P |
| 1 | MC 18HS172 | CMEP / OSHA | IM/CV | 2 | -- | -- | -- | 03 | 50 | 50 | 100 | 2 | |
| 2 | PC 18CV71 | Design of RC & Steel Structures | CV | 4 | --- | --- | --- | 03 | 50 | 50 | 100 | 4 | |
| 3 | PC 18CV72 | Estimation and Valuation | CV | 4 | --- | --- | --- | 03 | 50 | 50 | 100 | 4 | |
| 4 | PE 18CV73X | Professional Elective - 3 | CV | 3 | --- | --- | --- | 03 | 50 | 50 | 100 | 3 | |
| 5 | PE 18CV74X | Professional Elective - 4 | CV | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 6 | OE 18CV75X | Open Elective - C | CV | 3 | -- | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 7 | PC 18CVL76 | Environmental Engg. Laboratory | CV | --- | --- | 2 | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | PC 18CVL77 | Advanced Civil Engg. Laboratory | CV | --- | --- | 2 | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | Project 18CVP78 | Project Work Phase - I | CV | -- | -- | 2 | 2 | 03 | 50 | 50 | 100 | 2 | |
| 9 | INT 18CV179 | Internship | (If not completed after VI semester examinations, it has to be carried out during the intervening vacations of VII and VIII semesters) | | | | | | | | | | -- |
| TOTAL | | | | 19 | -- | -- | 6 | 27 | 450 | 450 | 900 | 23 | |

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters.

A SEE examination will be conducted during VIII semester and prescribed credits shall be added to VIII semester.

Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent SEE examination after satisfy the internship requirements.

Electives

| Course code | Professional Electives - 3 | Open Elective - B |
|-------------|-------------------------------------|-------------------|
| 18CV731 | Pavement Materials and Construction | |

| | | |
|---------|-----------------------------------|--|
| 18CV732 | Photogrammetry and Remote Sensing | <p>Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department.</p> <p>Selection of an open elective is not allowed provided,</p> <ul style="list-style-type: none"> ✓ The candidate has studied the same course during the previous semesters of the programme. ✓ The syllabus content of open elective is similar to that of Departmental core courses or professional electives. ✓ A similar course, under any category, is prescribed in the higher semesters of the programme. ✓ Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor. |
| 18CV733 | Environmental Impact Assessment | |
| 18CV734 | Design of Bridges | |
| 18CV735 | Structural Dynamics | |
| 18CV736 | Construction Project Management | |
| 18CV737 | Reinforced Earth Structures | |

Electives : 4

| Course code | Professional Elective |
|-------------|--|
| 18CV741 | Water Resources Engineering |
| 18CV742 | Advanced Foundation Design |
| 18CV743 | Pavement Design |
| 18CV744 | Earthquake Resistant Design of Structures |
| 18CV745 | Solid Waste Management |
| 18CV746 | Quality Management System in Civil Engineering |
| 18CV747 | Hydraulic Structures & Irrigation drawing |

Electives : B

| Course code | Open Elective - C |
|-------------|---|
| 18CV751 | Ecology and Environmental Impact Assessment |
| 18CV752 | Urban Transport Planning |
| 18CV753 | Photo Geology and Remote Sensing |



Professor and Head
Department of Civil Engineering
Ambedkar Institute of Technology
Bangalore - 560 056.

Dr. Ambedkar Institute of Technology

(An Autonomous Institute, Affiliated to VTU, Accredited by NAAC with 'A' grade)

Department of CIVIL ENGINEERING

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2018-19, 2019 - 20

M. Tech in STRUCTURAL ENGINEERING


I Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--|---------------------|-------------------------|-------------------------------|---------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Project | CIE | SEE | Total | |
| 1. | 18CSE11 | Computational Structural Mechanics | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 2. | 18CSE12 | Advanced Design of RC Structures | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 3. | 18CSE13 | Mechanics of Deformable Bodies | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 4. | 18CSE14 | Structural Dynamics | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 5. | 18CSE15X | ELECTIVE - I | .... | 4 | - | - | 50 | 50 | 100 | 3 |
| 6. | 18CSEL16 | Structural Engineering Laboratory - I | .... | - | - | 3 | 50 | 50 | 100 | 2 |
| 7. | 18CSES17 | Technical Seminar | .... | - | 2 | - | 50 | - | 50 | 2 |
| 8. | 18CSEM18 | Mini project/ Industry visit/ Field work | .... | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 400 | 300 | 700 | 21 |

Technical Seminar: Seminar on Advanced topics from refereed journals by each student.

ELECTIVE I

| Sl.No | Name of the Subject | Subject Code |
|-------|---|--------------|
| 1 | Advanced Design of Pre-stressed Concrete Structures | 18CSE151 |
| 2 | Special Concrete | 18 CSE 152 |
| 3 | Design of Pre-cast and Composite Structures | 18 CSE 153 |
| 4 | Reliability Analysis of Structures | 18 CSE 154 |


Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

Dr. Ambedkar Institute of Technology

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Department of CIVIL ENGINEERING

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2018-19, 2019 - 20

M. Tech in STRUCTURAL ENGINEERING

Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 076

II Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--|---------------------|-------------------------|-----------------------------|--------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/Seminar/Assignment | Practical /Project | CIE | SEE | Total | |
| 1. | 18CSE21 | Advanced Design of Steel Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 2. | 18CSE22 | Earthquake Resistant Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 3. | 18CSE23 | Finite Element Method of Analysis | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 4. | 18CSE24 | Design Concepts of Sub Structures | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 5. | 18CSE25X | ELECTIVE - II | ..... | 4 | - | - | 50 | 50 | 100 | 3 |
| 6. | 18CSEL26 | Structural Engineering Laboratory - II | ..... | - | - | 3 | 50 | 50 | 100 | 2 |
| 7. | 18RM27 | Research Methodology | ..... | - | 2 | - | 50 | 50 | 100 | 2 |
| 8. | 18CSEM28 | Mini project/ Industry visit/ Field work | ..... | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 400 | 350 | 750 | 21 |

ELECTIVE-II

| Sl. No | Name of the Subject | Subject Code |
|--------|---|--------------|
| 1 | Design of Tall Structures | 18 CSE 251 |
| 2 | Repair and Rehabilitation of Structures | 18 CSE 252 |
| 3 | Stability of Structures | 18 CSE 253 |
| 4 | Design of Plates and Shells | 18 CSE 254 |

Internship: All the students have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and/or II and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted for the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not takeup/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.

Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2018-19, 2019 - 20
M. Tech in STRUCTURAL ENGINEERING

Professor and Head
Department of Civil Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 005.

III Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|--------------------------------------|---------------------|-------------------------|-------------------------------|------------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1. | 18CSE31 | Design of Concrete Bridge Structures | ..... | 04 | - | - | 50 | 50 | 100 | 4 |
| 2. | 18CSE32X | Professional Elective 3 | ..... | 04 | - | - | 50 | 50 | 100 | 3 |
| 3. | 18CSE33X | Professional Elective 4 | ..... | 04 | - | - | 50 | 50 | 100 | 3 |
| 4 | 18CSEI34 | Internship | ..... |  |  |  | 50 | 50 | 100 | 8 |
| 5 | 18CSE35 | Technical Seminar | ..... |  |  |  | 50 | - | 50 | 2 |
| 6. | 18CSEP36 | Project phase - 1 | ..... | - | - | - | 50 | - | 50 | 2 |
| Total | | | | | | | 300 | 200 | 500 | 22 |

| Professional Elective 3 | | | | Professional Elective 4 | | | |
|-------------------------|---|--------------|-------|--------------------------------------|--------------|--|--|
| Sl.No | Name of the Subject | Subject Code | Sl.No | Name of the Subject | Subject Code | | |
| 1 | Design of Industrial Structures | 18CSE321 | 1 | Optimization Techniques | 18CSE331 | | |
| 2 | Theory of Plasticity and Fracture Mechanics | 18CSE322 | 2 | Composites and Smart materials | 18CSE332 | | |
| 3 | Masonry structures | 18CSE323 | 3 | Advanced Structural Mechanics | 18CSE333 | | |
| | | 18CSE324 | 4 | Earth and Earth Retaining Structures | 18CSE334 | | |

Note:

1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory. The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session
2. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session
3. SEE as per the norms

4. **2. Internship:** Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent SEE examinations after satisfying the internship requirements. Internship SEE shall be as per the norms.


Dr. Ambedkar Institute of Technology
SCHEME OF TEACHING AND EXAMINATION (Autonomous) 2018-19, 2019 - 20
M. Tech in STRUCTURAL ENGINEERING

IV Semester M TECH

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--|----------|---|---------------------|-------------------------|-------------------------------|------------------------|------------------------|-----|-------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1 | 18CSEP41 | Project Work Phase II – Midterm Internal Evaluation | ..... | - | - | - | 50 | | 50 | 2 |
| 2 | 18CSEP42 | Project work evaluation and viva voce | | | | | 100 | 100 | 200 | 22 |
| Total | | | | | | | 150 | 100 | 250 | 24 |
| Grand Total (I to IV Semester) : 88 Credits | | | | | | | | | | |

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25. SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the norms.


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Bangalore - 560 058.

I SEMESTER B.E (PHYSICS GROUP)

| Sl. No. | Course and Course Code | | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | Examination | | | | | Credits |
|--------------|------------------------|-------------------|---|------------------------------------|------------------------|----------------------|-----------|--------------------|-------------------|------------|------------|-------------|-----------|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | | | | | | | | | | | |
| 1 | BC | 18MA11 | Calculus and Linear Algebra | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC | 18PH12 | Engineering Physics | Physics | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES | 18EE13 | Basic Electrical Engineering | E and E Engineering | E and E Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES | 18CV14 | Civil Engineering and Mechanics | Civil Engineering | Civil Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES | 18MEL15 | Engineering Graphics and Design | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | -- | 2 | 03 | 50 | 50 | 100 | 3 |
| 6 | BC | 18PHL16 | Engineering Physics Laboratory | Physics | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES | 18EEL17 | Basic Electrical Engineering Laboratory | E and E Engineering | E and E Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu | 18HS11/ 18HS12 | English/ Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | | 13 | 06 | 08 | 21 | 350 | 350 | 700 | 20 |

II SEMESTER B.E (CHEMISTRY GROUP)

| Sl. No. | Course and Course Code | | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | Examination | | | | | Credits |
|--------------|------------------------|-------------------|---|------------------------------------|----------------------------------|----------------------|-----------|--------------------|-------------------|------------|------------|-------------|-----------|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | | | | | | | | | | | |
| 1 | BC | 18MA21 | Advanced Calculus and Numerical Methods | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC | 18CH22 | Engineering Chemistry | Chemistry | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES | 18CS23 | C Programming for Problem Solving | Computer Science and Engineering | Computer Science and Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES | 18ELN24 | Basic Electronics | ECE/E and I/ TC | E and C Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES | 18ME25 | Elements of Mechanical Engineering | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | BC | 18CHL26 | Engineering Chemistry Laboratory | Chemistry | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES | 18CSL27 | Computer Programming Laboratory | Computer Science and Engineering | Computer Science and Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | Hu | 18HS21/ 18HS22 | English /Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | | 13 | 08 | 06 | 23 | 400 | 400 | 800 | 20 |

Note: BC: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

Definition of Credit:
1 hour Lecture (L) per week per semester = 1 Credit
2 hour Tutorial (T) per week per semester = 1 Credit
2 hour Practical/Laboratory/Drawing (P) per week per semester = 1 Credit.

Scheme of Teaching and Examination from the Academic Year 2020-21
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

I SEMESTER B.E (CHEMISTRY GROUP)


| Sl. No | Course and Course Code | | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | Examination | | | | Credits | |
|--------------|------------------------|-------------------|------------------------------------|------------------------------------|----------------------------------|----------------------|-----------|--------------------|-------------------|------------|------------|------------|-------------|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | | Total Marks |
| | | | | | | L | T |  |  |  |  |  |  | P |
| 1 | BC | 18MA11 | Calculus and Linear Algebra | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC | 18CH12 | Engineering Chemistry | Chemistry | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES | 18CS13 | C Programming for Problem Solving | Computer Science and Engineering | Computer Science and Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES | 18EC14 | Basic Electronics | ECE/E and I/ TC | E and C Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES | 18ME15 | Elements of Mechanical Engineering | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | BC | 18CHL16 | Engineering Chemistry Laboratory | Chemistry | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES | 18CSL17 | Computer Programming Laboratory | Computer Science and Engineering | Computer Science and Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | HS | 18HS11/ 18HS12 | English/ Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | | 13 | 08 | 06 | 23 | 350 | 350 | 700 | 20 |

II SEMESTER B.E (PHYSICS GROUP)

| Sl. No | Course and Course Code | | Course Title | Teaching Department | Paper Setting Board | Teaching Hours /Week | | Examination | | | | Credits | |
|--------------|------------------------|-------------------|---|------------------------------------|------------------------|----------------------|-----------|--------------------|-------------------|------------|------------|------------|-------------|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | Duration in hours | CIE Marks | SEE Marks | | Total Marks |
| | | | | | | L | T |  |  |  |  |  |  | P |
| 1 | BC | 18MA21 | Advanced Calculus and Numerical Methods | Mathematics | Science | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| 2 | BC | 18PH22 | Engineering Physics | Physics | Science | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 3 | ES | 18EE23 | Basic Electrical Engineering | E and E Engineering | E and E Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 4 | ES | 18CV24 | Civil Engineering and Mechanics | Civil Engineering | Civil Engineering | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 5 | ES | 18MEL25 | Engineering Graphics and Design | ME, Auto, IP, IEM, Mfg Engineering | Mechanical Engineering | 2 | -- | 2 | 03 | 50 | 50 | 100 | 3 |
| 6 | BC | 18PHL26 | Engineering Physics Laboratory | Physics | Science | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 7 | ES | 18EEL27 | Basic Electrical Engineering Laboratory | E and E Engineering | E and E Engineering | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 8 | HS | 18HS21/ 18HS22 | English/ Kannada | Humanities | Humanities | 1 | -- | 2 | 02 | 50 | 50 | 100 | 1 |
| TOTAL | | | | | | 13 | 06 | 08 | 23 | 400 | 400 | 800 | 20 |

Note: BS: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

Definition of Credit: 1 hour Lecture (L) per week per semester =1 Credit
2 hour Tutorial (T) per week per semester =1 Credit
2 hour Practical/Laboratory/Drawing (P) per week per semester =1 Credit.


Professor and Head
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T. Ambedkar Institute of Technology
Bangalore - 560 086.

SCHEME OF TEACHING AND EXAMINATION from Academic Year 2020-21
B.E (Civil Engineering)

Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

III SEMESTER

| Sl. No | Course and Course Code | Course Title | Teaching Department | Teaching Hours /Week | | | | Examination | | | | Credits |
|--------------|------------------------|--|---------------------|----------------------|-----------|---------------------|-------------------|-------------|------------|-------------|-----------|---------|
| | | | | Theory | Tutorial | Practical / Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | | |
| | | | | | | | | | | | L |  | T | P |
| 1 | BC 18MA31 | Mathematics (Title as per the decision of BoS in Sciences) | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 | |
| 2 | PC 18CV31 | Building Materials and Construction | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 3 | PC 18CV32 | Strength of Materials | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 4 | PC 18CV33 | Surveying | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| 5 | PC 18CV34 | Fluid Mechanics | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| 6 | PC 18CV35 | Applied Engineering Geology | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 1 | |
| 7 | PC 18CVL36 | Civil Engineering Material Testing Laboratory | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 8 | PC 18CVL37 | Surveying Practice | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| 9 | HS 18HS31/32 | Constitution of India Professional Ethics and Human Rights / Environmental Science | Humanities /Civil | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 | |
| 10 | MC 18HS33 | Soft skills | Humanities | 4 | -- | -- | 03 | 50 | -- | 50 | PP/NP | |
| TOTAL | | | | 25 | 02 | 04 | 29 | 500 | 450 | 950 | 24 | |

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs | | Mathematics | | | | Credits | |
|---|-------------|-------------------------|--------|-----------|---------------------|-----------|-----------|
| Sl. No | Course Code | Course Title | Theory | Tutorial | Practical / Drawing | | |
| 11 | MC 18MAD31 | Advance Mathematics - I | 02 | 01 | -- | 03 | |
| TOTAL | | | | 02 | 01 | -- | 03 |

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs | | Mathematics | | | | Credits | |
|---|-------------|-------------------------|--------|-----------|---------------------|-----------|-----------|
| Sl. No | Course Code | Course Title | Theory | Tutorial | Practical / Drawing | | |
| 11 | MC 18MAD31 | Advance Mathematics - I | 02 | 01 | -- | 03 | |
| TOTAL | | | | 02 | 01 | -- | 03 |

Note:

HODs are informed to accommodate one more laboratory in addition to the above courses if needed, without altering the total number of credits (TOTAL: 24).

(a) The mandatory non - credit courses Advance Mathematics I and II prescribed at III and IV semesters respectively, to lateral entry Diploma holders admitted to III semester of BE programs, are to be completed to secure

shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for SEE examination.

(b) The mandatory non - credit courses Advance Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III semester of BE programs, are to be completed to secure

eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme but considered as head of passing along with credit courses of the

programme to eligibility to VII semester.

Note: BC: Science Course, PC: Professional Core, Hu: Humanities, MC: Mandatory Course.

Professor Anil K. S. S.
Department of Civil Engineering
T. Ambedkar Institute of Technology
Bangalore - 560 026.

IV SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
|--------------|------------------------|---|---------------------|----------------------|-----------|--------------------|-------------|------------|-------------|-------------------|-----------|
| | | | | Theory | Tutorial | Practical/ Drawing | CIE Marks | SEE Marks | Total Marks | Duration in hours | |
| | | | | | | | | | | | |
| 1 | BC 18MA41 | Mathematics (Title as per the decision of BoS in Sciences) | Mathematics | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 |
| 2 | PC 18CV41 | Water Supply Engineering | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 3 | PC 18CV42 | Analysis of Determinate Structures | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 4 | PC 18CV43 | Hydraulics and Hydraulic Machines | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 5 | PC 18CV44 | Hydrology and Irrigation Engineering | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| 6 | PC 18CV45 | Concrete Technology | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 |
| 7 | PC 18CVL46 | Computer Aided Building Planning and Drawing | Civil | -- | 1 | 3 | 03 | 50 | 50 | 100 | 1 |
| 8 | PC 18CVL47 | Concrete and Highway materials Laboratory | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| 9 | HS 18HS41/42 | Constitution of India Professional Ethics and Human Rights/ Environmental Science | Humanities / Civil | 1 | -- | -- | 02 | 50 | 50 | 100 | 1 |
| 10 | MC 18HS43 | Employability skills | Humanities | 4 | -- | -- | 03 | 50 | - | 50 | PP/NP |
| TOTAL | | | | 24 | 03 | 05 | 29 | 500 | 450 | 950 | 24 |

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs | | Mathematics | 02 | 01 | -- | 03 | 50 | -- | 50 | PP/NP |
|---|------------|--------------------------|----|----|----|----|----|----|----|-------|
| 11 | MC 18MAD41 | Advance Mathematics - II | 02 | 01 | -- | 03 | 50 | -- | 50 | PP/NP |

Note: HODs are informed to accommodate one more laboratory in addition to the above courses if needed, without altering the total number of credits (TOTAL: 24).
 (a) The mandatory non - credit courses Advance Mathematics I and II prescribed at III and IV semesters respectively, to lateral entrant Diploma holders admitted to III semester of BE programs shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for SEE examination.
 (b) The mandatory non - credit courses Advance Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III semester of BE programs, are to be completed to secure eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme but considered as head of passing along with credit courses of the programme to eligibility to VII semester.

Note: BC: Science Course, PC: Professional Core, Hu: Humanities, NCMC: Non-Credit Mandatory Course.
 ENV: Environmental Studies, CIP: Constitution of India Professional Ethics and Human Rights



Professor and Head
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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2020-21
B.E (Civil Engineering)
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

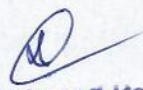
V SEMESTER

| Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | | Examination | | | | Credits |
|------------------------|---|---------------------|----------------------|----------|---------------------|-------------------|-------------|------------|-------------|-----------|---------|
| | | | Theory Lecture | Tutorial | Practical / Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | | |
| | | | L | T | P | | | | | | |
| S 18HS51/52 | M&E / IPR (title as per BOS decision) | Hu | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| C 18CV51 | Wastewater Treatment and Disposal | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| C 18CV52 | Design of RCC Structural Elements | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| C 18CV53 | Analysis of Indeterminate Structures | Civil | 4 | -- | -- | 03 | 50 | 50 | 100 | 4 | |
| PC 18CV54 | Geotechnical Engineering | Civil | 2 | 2 | -- | 03 | 50 | 50 | 100 | 3 | |
| PE 18CV55X | Professional Elective -1 | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| OE 18CVEXX | Open Elective -A | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 | |
| PC 18CVL56 | Hydraulics and Hydraulic Machinery Laboratory | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| PC 18CVL57 | Computer Aided Design Laboratory | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | |
| TOTAL | | | 22 | 2 | 4 | 27 | 450 | 450 | 900 | 25 | |

Note: Hu: Humanities, PC: Professional Core, MC: Mandatory Course,

Electives

| Course Code | Professional Electives -1 | Open Elective -A |
|------------------------|-------------------------------|--|
| CV551 | Transportation Engineering | <p>Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department.</p> <p>Selection of an open elective is not allowed provided:</p> <ul style="list-style-type: none"> The candidate has studied the same course during the previous semesters of the programme. The syllabus content of open elective is similar to that of Departmental core courses or professional electives. A similar course, under any category, is prescribed in the higher semesters of the programme. <p>Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.</p> |
| CV552 | Theory of Elasticity | |
| CV553 | Ground Improvement Techniques | |
| CV554 | Advanced Surveying | |
| CV555 | Ground Water Hydrology | |
| OPEN ELECTIVE-A | | |
| CVE01 | Air Pollution and Control | |
| CVE02 | Solid Waste Management | |


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SCHEME OF TEACHING AND EXAMINATION from Academic Year 2020-21
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

VI SEMESTER


| Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | Examination | | | | Credits |
|------------------------|---|--|----------------------|----------|--------------------|-------------------|------------|------------|-------------|-----------|
| | | | Theory Lecture | Tutorial | Practica / Drawing | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | L | T | P | | | | | |
| HS 18HS61/62 | M&E/IPR | Hu | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| PC 18CV61 | Design of Steel Structures | Civil | 3 | 2 | -- | 03 | 50 | 50 | 100 | 4 |
| PC 18CV62 | Railways, Airport, Tunnel and Harbour Engineering | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| PC 18CV63 | Foundation Engineering | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| PE 18CV64X | Professional Elective - 2 | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| OE 18CVEXX | Open Elective - B | Civil | 3 | -- | -- | 03 | 50 | 50 | 100 | 3 |
| PC 18CVL66 | Computer Aided Drawing of RC and Steel structures | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| PC 18CVL67 | Geotechnical Engineering Laboratory | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| MP 18CVP68 | Mini-Project | | | | 2 | 03 | 50 | 50 | 100 | 2 |
| PC 18CVL68 | Extensive Survey Project | Civil | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 |
| INT 18CVI69 | Industry Internship | (To be carried out during the intervening vacations of VI and VII semesters) | | | | -- | -- | -- | -- | -- |
| TOTAL | | | 18 | 2 | 6 | 30 | 500 | 500 | 1000 | 24 |

Professional Core, PE: Professional Elective, OE: Open Elective, MP: Mini-Project, INT: Internship.

Internship:
 All students admitted to III year of B.E. have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and / or VII and VIII semesters. A University examination will be conducted during VIII semester and prescribed credit are to be earned in VIII semester. Internship is considered as a head of passing and is considered for the award of degree. Those, who do not complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

Electives

| Course Code | Professional Electives - 2 | Open Elective - B |
|--------------------------|---|--|
| V641 | Pre-Stressed Concrete | Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided, • The candidate has studied the same course during the previous semesters of the programme. • The syllabus content of open elective is similar to that of Departmental core courses or professional electives. • A similar course, under any category, is prescribed in the higher semesters of the programme. Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor. |
| V642 | Alternate Building Materials and Technologies | |
| V643 | Traffic Engineering | |
| V644 | Open Channel Hydraulics | |
| V645 | Earth and Earth Retaining Structures | |
| Open Elective - B | | |
| EVE03 | Integrated Solid Waste Management | |
| EVE04 | Photogrammetry and Remote Sensing | |


Professor and Head
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SCHEME AND CREDITS FOR V TO VIII SEMESTER BE CIVIL ENGINEERING OF DR. A I T, B'LORE
SCHEME OF TEACHING AND CREDITS
B.E. CIVIL ENGINEERING
VII SEMESTER (2015-16 Batch)

| Sl. No. | Subject Code | Title of the Subject | Teaching Dept. | Teaching Hrs / Week | | | Credits |
|--------------|--------------|--|----------------|---------------------|-----------|-----------|-----------|
| | | | | L | T | P | |
| 1 | CV 71 | Design of Steel Structures | Civil | 04 | --- | --- | 4 |
| 2 | CV 72 | Estimation and Valuation | Civil | 02 | 02 | --- | 3 |
| 3 | CV 73 | Design of Pre Stressed Concrete Structures | Civil | 03 | --- | --- | 3 |
| 4 | CV 74X | Elective-II (Group B) | Civil | 03 | --- | --- | 3 |
| 5 | CV 75X | Elective-III (Group C) | Civil | 03 | --- | --- | 3 |
| 6 | CVL 76 | Environmental Engineering. Lab | Civil | --- | 03 | --- | 1.5 |
| 7 | CVL 77 | Concrete and Highway Materials lab. | Civil | --- | 03 | --- | 1.5 |
| 8 | | Interdepartmental Elective | | 04 | --- | --- | 04 |
| 9 | CVP84 | Project work Phase I | Civil | --- | --- | --- | --- |
| TOTAL | | | | 20 | 04 | 06 | 23 |

| Elective-II (Group B) | | Elective-III (Group C) | |
|-----------------------|---|------------------------|--|
| Subject Code | Title of the Subject | Subject Code | Title of the Subject |
| CV 741 | Matrix Method of Structural Analysis | CV 751 | Numerical methods in Civil Engineering |
| CV 742 | Advanced Design of RC Structures | CV 752 | Rock Mechanics |
| CV 743 | Design of Masonry Structures | CV 753 | Pavement Materials and Construction |
| CV 744 | Earth and Earth Retaining Structures | CV 754 | Photogrammetry and Remote Sensing |
| CV 745 | Highway Geometric Design | CV 755 | Air Pollution and Control |
| CV 746 | Open Channel Hydraulics | CV 756 | Design and Drawing of Bridges.: * (2 Hrs of Theory + 3 Hrs of Drawing) * (Exam Duration : 4 Hrs) |
| CV 747 | Rural Water Supply and Sanitation Engineering | CV 757 | Structural Dynamics |
| | | CV 758 | Construction Project Management |
| CVE01 | Integrated Solid Waste Management (IDE) | CVE02 | Air Pollution and Control methods (IDE) |

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Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2020-21
B.E (Civil Engineering)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

VIII SEMESTER

| Sl. No | Course and Course code | Course Title | Teaching Department | Teaching Hours /Week | | | | Duration in hours | Examination | | | Credits | | |
|--------------|------------------------|-------------------------|--|----------------------|-----------|---------------------|-----------|-------------------|-------------|------------|-----------|---------|-----------|-------------|
| | | | | Theory | Tutorial | Practical / Drawing | L | | T | P | CIE Marks | | SEE Marks | Total Marks |
| | | | | | | | | | | | | | | |
| 1 | MC 18HS81/82 | CMEP / OSHA | IM / CV | 2 | -- | -- | 03 | 50 | 50 | 100 | 2 | | | |
| 2 | Project 18CVP81 | Project Work Phase - II | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 10 | | | |
| 3 | Seminar 18CVS82 | Technical Seminar | CV | -- | -- | 2 | 03 | 50 | 50 | 100 | 1 | | | |
| 4 | INT 18CVI83 | Internship | (Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.) | -- | -- | -- | 03 | 50 | 50 | 100 | 2 | | | |
| TOTAL | | | | 02 | -- | 4 | 12 | 200 | 200 | 400 | 15 | | | |

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

Those, who have not pursued /completed the internship will be declared as failed and have to complete during subsequent SEE examination after they satisfy the internship requirements.

Total 175 Credit Distributions for all semester B.E. (Civil Engineering) Programme.

| Semester | I | II | III | IV | V | VI | VII | VIII | Total Credits |
|----------|----|----|-----|----|----|----|-----|------|---------------|
| Credits | 20 | 20 | 24 | 24 | 25 | 24 | 23 | 15 | 175 |



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SCHEME AND CREDITS FOR V TO VIII SEMESTER BE CIVIL ENGINEERING OF DR. A I T, B'LORE
SCHEME OF TEACHING AND CREDITS
B.E. CIVIL ENGINEERING
VIII SEMESTER (2015-16 Batch)

| Sl. No. | Subject Code | Title of the Subject | Teaching Dept. | Teaching Hrs / Week | | | Credits |
|--------------|--------------|---|----------------|---------------------|-----------|-----------|-----------|
| | | | | L | T | P | |
| 2 | CV 81 | Design and Computer Aided Drawing of Steel Structures | Civil | --- | 01 | 03 | 02 |
| 3 | CV 82X | Elective - IV (Group D) | Civil | 03 | --- | --- | 3 |
| 4 | CV 83X | Elective - V (Group E) | Civil | 03 | --- | --- | 3 |
| 5 | CVP 84 | Project work Phase II | Civil | --- | --- | 24 | 12 |
| 6 | CVS 85 | Seminar | Civil | --- | 04 | --- | 2 |
| 7 | HS 04 | Intellectual Property Rights | Humanities | 02 | --- | --- | 02 |
| 8 | CVE XX | Interdepartmental Elective | | 04 | --- | --- | 04 |
| TOTAL | | | | 12 | 05 | 27 | 28 |

| Elective-IV (Group D) | | | Elective-V (Group E) | | |
|-----------------------|---|--------------|--|--|--|
| Subject Code | Title of the Subject | Subject Code | Title of the Subject | | |
| CV 821 | Advanced Pre-stressed Concrete Structures | CV 831 | Finite Element Analysis | | |
| CV 822 | Advanced Foundation Design | CV 832 | Reinforced Earth Structures | | |
| CV 823 | Pavement Design | CV 833 | Urban Transport Planning | | |
| CV 824 | Earthquake Resistant Design of Structures | CV 834 | Advanced Design of Steel Structures | | |
| CV 825 | Industrial Waste Water Treatment | CV 835 | Water Resources Engineering | | |
| CV 826 | Quality Management System in Civil Engineering | CV 836 | Environmental Impact Assessment | | |
| CV 827 | Remote Sensing and Geographic Information System | CV 837 | Infrastructure Development | | |
| CVE 03 | Ecology and Environmental Impact Assessment (IDE) | CVE 04 | Remote Sensing and Geographic Information System (IDE) | | |

Note: Project Work shall be 12 Credits in VIII Sem. BE

(1)

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Dr. Ambedkar Institute of Technology

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2020-21, 2021-22 | Ambedkar Institute of Technology
Bengaluru - 560 056.

D.
Professor and Head
Department of Civil Engineering
Ambedkar Institute of Technology
Bengaluru - 560 056.

M. Tech in Structural Engineering

I semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|---|---------------------|-------------------------|-----------------------------|---------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/Seminar/Assignment | Practical / Project | CIE | SEE | Total | |
| 1 | 20CSE11 | Computational Structural Mechanics | | 4 | - | - | 50 | 50 | 100 | 3 |
| 2 | 20CSE12 | Advanced Design of RC Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 3 | 20CSE13 | Mechanics of Deformable Bodies | | 4 | - | - | 50 | 50 | 100 | 3 |
| 4 | 20CSE14 | Structural Dynamics | | 4 | - | - | 50 | 50 | 100 | 3 |
| 5 | 20CSE15X | ELECTIVE - I | | 4 | - | - | 50 | 50 | 100 | 3 |
| 6 | 20CSE16X | ELECTIVE - II | | 4 | - | - | 50 | 50 | 100 | 3 |
| 7 | 20CSEL17 | Structural Engineering Laboratory | | - | - | 3 | 50 | 50 | 100 | 2 |
| 8 | 20CSES18 | Technical Seminar* | | - | 4 | - | 50 | - | 50 | 2 |
| 9 | 20CSEM19 | Minor project/ Industry visit/ Field work | | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 450 | 350 | 800 | 24 |

*Technical Seminar: Seminar on Advanced topics from refereed journals by each student.

ELECTIVE - I

| Sl. No | Subject Code | Subject title |
|--------|--------------|---|
| 1 | 20CSE151 | Advanced Design of Pre-stressed Concrete Structures |
| 2 | 20CSE152 | Special Concrete |
| 3 | 20CSE153 | Design of Pre-cast and Composite Structures |
| 4 | 20CSE154 | Reliability Analysis of Structures |

ELECTIVE - II

| Sl. No | Subject Code | Subject title |
|--------|--------------|--------------------------------------|
| 1 | 20CSE161 | Optimization Techniques |
| 2 | 20CSE162 | Composites and Smart materials |
| 3 | 20CSE163 | Advanced Structural Mechanics |
| 4 | 20CSE164 | Earth and Earth Retaining Structures |

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION II SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

Professor and Head
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Dr. Ambedkar Institute of Technology
Bangalore - 560 056.

II semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|---|---------------------|-------------------------|-------------------------------|---------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Project | CIE | SEE | Total | |
| 1 | 20CSE21 | Advanced Design of Steel Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 2 | 20CSE22 | Earthquake Resistant Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 3 | 20CSE23 | Finite Element Method of Analysis | | 4 | - | - | 50 | 50 | 100 | 3 |
| 4 | 20CSE24 | Design Concepts of Substructures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 5 | 20CSE25X | ELECTIVE – III | | 4 | - | - | 50 | 50 | 100 | 3 |
| 6 | 20CSE26X | ELECTIVE – IV | | 4 | - | - | 50 | 50 | 100 | 3 |
| 7 | 20RM27 | Research Methodology | | 2 | -- | - | 50 | 50 | 100 | 2 |
| 8 | 20CSEL28 | Computational Structural Engineering Laboratory | | - | - | 3 | 50 | 50 | 100 | 2 |
| 9 | 20CSEP29 | Project Work Phase – I (Presentation of Synopsis) | | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 450 | 400 | 850 | 24 |

ELECTIVE-III

| Sl.No | Subject Code | Subject title |
|-------|--------------|---|
| 1 | 20CSE251 | Design of Tall Structures |
| 2 | 20CSE252 | Repair and Rehabilitation of Structures |
| 3 | 20CSE253 | Stability of Structures |
| 4 | 20CSE254 | Design of Plates and Shells |

ELECTIVE-IV

| Sl. No | Subject Code | Name of the Subject |
|--------|--------------|---|
| 1 | 20CSE261 | Design of Industrial Structures |
| 2 | 20CSE262 | Theory of Plasticity and Fracture Mechanics |
| 3 | 20CSE263 | Masonry structures |
| 4 | 20CSE264 | Design of Concrete Bridge Structures |

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

III semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|---|---------------------|-------------------------|-------------------------------|------------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1 | 20CSE31 | Self-Study – Massive Open Online Course (MOOC)* | | -- | 8 | -- | 50 | 50 | 100 | 4 |
| 2 | 20CSEI32 | Internship# | | -- | -- | 16 | 50 | 50 | 100 | 8 |
| 3 | 20CSES33 | Technical Seminar | | - | 4 | - | 50 | - | 50 | 2 |
| 4 | 20CSEP34 | Evaluation of Project Work Phase I | | - | - | 12 | 50 | 50 | 100 | 6 |
| Total | | | | | | | 200 | 150 | 350 | 20 |

* List of Massive Open Online Courses (NPTEL/SWAYAM) shall be decided in the Board of Studies meeting. Students shall register for MOOC during 1st /2nd /3rd semester and shall be completed before the last working day of the 3rd semester. The assignment and examination marks along with certificate should be submitted to the examination section.

The student shall make a midterm presentation of the activities undertaken during the first 8 weeks of internship to a panel comprising Internship Guide, a senior faculty from the department and Head of the Department.

The Department shall facilitate and monitor the student internship program.

The internship report of each student shall be submitted to the Institute.



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Dr. Ambedkar Institute of Technology

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION IV SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

IV semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|---|----------|---|---------------------|-------------------------|-------------------------------|------------------------|------------------------|-----|-------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1 | 20CSEP41 | Project Phase – II Midterm Internal Evaluation | | - | - | 8 | 100 | - | 100 | 2 |
| 2 | 20CSEP42 | Project Work Evaluation and Viva Voce | | - | 4 | 24 | 100 | 100 | 200 | 18 |
| Total | | | | | | | | | | |
| Grand Total (I to IV Semester) : 2300 Marks ; 88 Credits | | | | | | | | | | |


Professor and Head
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Scheme of Teaching and Examination for I /II Semester B.E., (Common to all B.E. Programmes) Academic Year:2021-22

Chemistry Cycle: I/II Semester

| Sl. No. | Course Category | Course Code | Course Title | Teaching Department | Teaching Hrs/ Week | | | | | Total | Duration (Hrs) | Examination | | | Credits |
|---------|-----------------|-----------------------|---|---------------------|--------------------|---|----|---|-------|-------|----------------|-------------|-----------|-------------|---------|
| | | | | | L | T | P | S | Total | | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BS | 21MAT101 | Calculus and Linear Algebra | Mathematics | 3 | 2 | 0 | 0 | 5 | 3 | 50 | 50 | 100 | 4 | |
| 2 | BS | 21MAT201 | Advanced Calculus and Numerical methods | Mathematics | 3 | 0 | 0 | 0 | 3 | 3 | 50 | 50 | 100 | 3 | |
| 3 | ES | 21CHT102/ 21CHT202 | Engineering Chemistry | Chemistry | 3 | 0 | 0 | 0 | 3 | 3 | 50 | 50 | 100 | 3 | |
| 4 | ES | 21CST103/ 21CST203 | Problem solving through Programming | Computer Science | 2 | 2 | 0 | 0 | 4 | 3 | 50 | 50 | 100 | 3 | |
| 5 | ES | 21EET104/ 21EET204 | Basic Electronics and Communication Engineering | Electronics | 2 | 2 | 0 | 0 | 4 | 3 | 50 | 50 | 100 | 3 | |
| 6 | BS | 21MET105/ 21MET205 | Elements of Mechanical Engineering | Mechanical | 2 | 2 | 0 | 0 | 4 | 3 | 50 | 50 | 100 | 3 | |
| 7 | ES | 21CHL106/ 21CHL206 | Engineering Chemistry Laboratory | Chemistry | 0 | 0 | 2 | 0 | 2 | 3 | 50 | 50 | 100 | 1 | |
| 8 | HS | 21CSL107/ 21CSL207 | Computer Programming Laboratory | Computer Science | 0 | 0 | 2 | 0 | 2 | 3 | 50 | 50 | 100 | 1 | |
| 9 | AE | 21HST108 | Communicative English | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | 21HST208 | Professional writing skills in English | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | 21CVT109 | Rural Development | Civil | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | 21HST209 | Health and Wellness | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | 21HSN110 | Career Development skill-I | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | 21HSN210 | Career Development skill-II | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 | |
| | | | | | Total | | | | | 30 | 500 | 450 | 900 | 20 | |

Note: BS: Basic Science Course, ES: Engineering Science Course, HS: Humanities & Social Science Course, AE: Ability Enhancement Course, MC: Mandatory Course, * No practical evaluation, L: Lecture, T: Tutorial, P: Practical/drawing, S: Self study, CIE: Continuous Internal Evaluation, SEE: Semester End Examination

Note -At the end of the second-semester summer internship shall be carried out - based on inter/intra institutional activities credited in the third semester. University /Institutions may swap few courses between a FIRST and SECOND semester to balance the workload teaching and laboratory schedule

Summer Internship - I: All the students admitted shall have to undergo a mandatory summer internship of 03 weeks during the vacation of II semesters. Summer Internship shall include Inter / Intra Institutional activities. Internship A University Viva-voce examination shall be conducted during III semesters and the prescribed credit shall be included in III semesters. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements

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Bengaluru - 560 056

UG - 2021 - 2022

Dr. Ambedkar Institute of Technology, Bengaluru-560056

Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (As per NEP2020)

Scheme of Teaching and Examination for I/II Semester B.E., (Common to all B.E. Programmes) Academic Year:2021-22

| Sl. No. | Course Category | Course Code | Course Title | Teaching Department | Teaching Hours/ Week | | | | | Total | Examination | | | Credits |
|---------|-----------------|-------------|---|---------------------|----------------------|---|----|---|----------------|-------|-------------|-----------|-------------|---------|
| | | | | | L | T | P | S | Duration (Hrs) | | CIE Marks | SEE Marks | Total Marks | |
| 1 | BS | 21MAT101 | Calculus and Linear Algebra | Mathematics | 3 | 2 | 0 | 0 | 5 | 3 | 50 | 50 | 100 | 4 |
| | | 21MAT201 | Advanced Calculus and Numerical methods | | | | | | | | | | | |
| 2 | BS | 21PHT102/ | Engineering Physics | Physics | 3 | 0 | 0 | 0 | 3 | 3 | 50 | 50 | 100 | 3 |
| | | 21PHT202 | | | | | | | | | | | | |
| 3 | ES | 21EET103/ | Basic Electrical Engineering | Electrical | 2 | 2 | 0 | 0 | 4 | 3 | 50 | 50 | 100 | 3 |
| | | 21EET203 | | | | | | | | | | | | |
| 4 | ES | 21CVT104/ | Elements of Civil Engineering & Mechanics | Civil | 3 | 0 | 0 | 0 | 3 | 3 | 50 | 50 | 100 | 3 |
| | | 21CVT204 | | | | | | | | | | | | |
| 5 | ES | 21MED105/ | Computer aided Engineering Drawing | Mechanical | 2 | 0 | 2 | 0 | 4 | 3 | 50 | 50 | 100 | 3 |
| | | 21MED205 | | | | | | | | | | | | |
| 6 | BS | 21PHL106/ | Engineering Physics Lab | Physics | 0 | 0 | 2 | 0 | 2 | 3 | 50 | 50 | 100 | 1 |
| | | 21PHL206 | | | | | | | | | | | | |
| 7 | ES | 21EEL107/ | Basic Electrical lab | Electrical | 0 | 0 | 2 | 0 | 2 | 3 | 50 | 50 | 100 | 1 |
| | | 21EEL207 | | | | | | | | | | | | |
| 8 | HS | 21HST108 | Communicative English | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 |
| | | 21HST208 | Professional writing skills in English | | | | | | | | | | | |
| 9 | AE | 21HST109 | Health and Wellness | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | 50 | 100 | 1 |
| | | 21CVT209 | Rural Development | | | | | | | | | | | |
| 10 | MC | 21HSN110 | Career Development skill-I | Humanities | 1 | 0 | 1* | 0 | 2 | 2 | 50 | - | PP/NP | 0 |
| | | 21HSN210 | Career Development skill-II | | | | | | | | | | | |
| | | | | | Total | | | | | 29 | 500 | 450 | 900 | 20 |

Note: BS: Basic Science Course,

AE: Ability Enhancement Course,

L: Lecture, T:Tutorial, P:Practical/drawing, S:Self study, CIE: Continuous Internal Evaluation, SEE: Semester End Examination

ES: Engineering Science Course,

MC: Mandatory Course,

* No practical evaluation,

HS: Humanities & Social Science Course,

PP/NP

Prof. Dr. S. Srinivasan

Department of Civil Engineering

Dr. Ambedkar Institute of Technology

Bangalore - 560011

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

I semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|---|---------------------|-------------------------|-------------------------------|--------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical /Project | CIE | SEE | Total | |
| 1 | 20CSE11 | Computational Structural Mechanics | | 4 | - | - | 50 | 50 | 100 | 3 |
| 2 | 20CSE12 | Advanced Design of RC Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 3 | 20CSE13 | Mechanics of Deformable Bodies | | 4 | - | - | 50 | 50 | 100 | 3 |
| 4 | 20CSE14 | Structural Dynamics | | 4 | - | - | 50 | 50 | 100 | 3 |
| 5 | 20CSE15X | ELECTIVE - I | | 4 | - | - | 50 | 50 | 100 | 3 |
| 6 | 20CSE16X | ELECTIVE - II | | 4 | - | - | 50 | 50 | 100 | 3 |
| 7 | 20CSEL17 | Structural Engineering Laboratory | | - | - | 3 | 50 | 50 | 100 | 2 |
| 8 | 20CSES18 | Technical Seminar* | | - | 4 | - | 50 | - | 50 | 2 |
| 9 | 20CSEM19 | Minor project/ Industry visit/ Field work | | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 450 | 350 | 800 | 24 |

*Technical Seminar: Seminar on Advanced topics from refereed journals by each student.
ELECTIVE - I

| Sl. No | Subject Code | Subject title |
|--------|--------------|---|
| 1 | 20CSE151 | Advanced Design of Pre-stressed Concrete Structures |
| 2 | 20CSE152 | Special Concrete |
| 3 | 20CSE153 | Design of Pre-cast and Composite Structures |
| 4 | 20CSE154 | Reliability Analysis of Structures |

ELECTIVE - II

| Sl. No | Subject Code | Subject title |
|--------|--------------|--------------------------------------|
| 1 | 20CSE161 | Optimization Techniques |
| 2 | 20CSE162 | Composites and Smart materials |
| 3 | 20CSE163 | Advanced Structural Mechanics |
| 4 | 20CSE164 | Earth and Earth Retaining Structures |

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Professor and Head

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION II SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

Professor and Head

Department of Civil Engineering

Dr. Ambedkar Institute of Technology

Bangalore - 560 056.

II semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|--------------|----------|---|---------------------|-------------------------|-------------------------------|---------------------|------------------------|------------|------------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Project | CIE | SEE | Total | |
| 1 | 20CSE21 | Advanced Design of Steel Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 2 | 20CSE22 | Earthquake Resistant Structures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 3 | 20CSE23 | Finite Element Method of Analysis | | 4 | - | - | 50 | 50 | 100 | 3 |
| 4 | 20CSE24 | Design Concepts of Substructures | | 4 | - | - | 50 | 50 | 100 | 3 |
| 5 | 20CSE25X | ELECTIVE - III | | 4 | - | - | 50 | 50 | 100 | 3 |
| 6 | 20CSE26X | ELECTIVE - IV | | 4 | - | - | 50 | 50 | 100 | 3 |
| 7 | 20RM27 | Research Methodology | | 2 | -- | - | 50 | 50 | 100 | 2 |
| 8 | 20CSEL28 | Computational Structural Engineering Laboratory | | - | - | 3 | 50 | 50 | 100 | 2 |
| 9 | 20CSEP29 | Project Work Phase - I (Presentation of Synopsis) | | - | - | 6 | 50 | - | 50 | 2 |
| Total | | | | | | | 450 | 400 | 850 | 24 |

ELECTIVE-III

| Sl. No | Subject Code | Subject title |
|--------|--------------|---|
| 1 | 20CSE251 | Design of Tall Structures |
| 2 | 20CSE252 | Repair and Rehabilitation of Structures |
| 3 | 20CSE253 | Stability of Structures |
| 4 | 20CSE254 | Design of Plates and Shells |

ELECTIVE-IV

| Sl. No | Subject Code | Name of the Subject |
|--------|--------------|---|
| 1 | 20CSE261 | Design of Industrial Structures |
| 2 | 20CSE262 | Theory of Plasticity and Fracture Mechanics |
| 3 | 20CSE263 | Masonry structures |
| 4 | 20CSE264 | Design of Concrete Bridge Structures |

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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2020-21, 2021-22

M. Tech in Structural Engineering

III semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits | |
|--------------|-----------|---|---------------------|-------------------------|-------------------------------|------------------------|------------------------|------------|------------|---------------------|-----------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | | |
| 1 | 20CSE31 | Self-Study – Massive Open Online Course (MOOC)* | | -- | 8 | -- | 50 | 50 | 100 | 4 | |
| 2 | 20CSEI32 | Internship# | | -- | -- | 16 | 50 | 50 | 100 | 8 | |
| 3 | 20CSEES33 | Technical Seminar | | - | 4 | - | 50 | - | 50 | 2 | |
| 4 | 20CSEP34 | Evaluation of Project Work Phase I | | - | - | 12 | 50 | 50 | 100 | 6 | |
| Total | | | | | | | 200 | 150 | 350 | 350 | 20 |

* List of Massive Open Online Courses (NPTEL/SWAYAM) shall be decided in the Board of Studies meeting. Students shall register for MOOC during 1st /2nd /3rd semester and shall be completed before the last working day of the 3rd semester. The assignment and examination marks along with certificate should be submitted to the examination section.

The student shall make a midterm presentation of the activities undertaken during the first 8 weeks of internship to a panel comprising Internship Guide, a senior faculty from the department and Head of the Department.

The Department shall facilitate and monitor the student internship program.

The internship report of each student shall be submitted to the Institute.



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Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION IV SEMESTER (Autonomous) 2020-21, 2021-22
M. Tech in Structural Engineering

IV semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits |
|----------------------------------|----------|---|---------------------|-------------------------|-------------------------------|------------------------|-------------------------|-----|-------|---------------------|
| | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Field Work | CIE | SEE | Total | |
| 1 | 20CSEP41 | Project Phase – II Midterm Internal Evaluation | | - | - | 8 | 100 | - | 100 | 2 |
| 2 | 20CSEP42 | Project Work Evaluation and Viva Voce | | - | 4 | 24 | 100 | 100 | 200 | 18 |
| Total | | | | | | | 200 | 100 | 300 | 20 |
| Grand Total (I to IV Semester) : | | | | | | | 2300 Marks ; 88 Credits | | | |



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