



VIGNAN'S
Foundation for Science, Technology & Research
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-Estd. u/s 3 of UGC Act 1956

DEPARTMENT OF CIVIL ENGINEERING

Dt: 30/03/2019

Minutes of Board of Studies Meeting

Department of Civil Engineering has conducted a BoS meeting on 30/03/2019 in AFF-10, Gallery Hall, First Floor, U Block to discuss and finalize the draft copy of the R19 Curriculum for the B.Tech Civil Engineering Programme.

The following members were present and the comments/resolutions suggested have been recorded.

S.No.	Name of the Member	Designation	Internal/ External	Signature
1	Dr. D. Rama Seshu	Professor, Department of Civil Engineering, NIT Warangal	External	
2	Er. C. Sanakralingam	Vice President & Head- Special Projects, L&T Construction, Chennai	External	
3	Dr. N. Ruben	Asso. Professor & HoD	Internal	
4	Mr. P. Padma Rao	Asst. Prof.	Internal	
5	Mr. R. V. Ramana	Asst. Prof.	Internal	



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Dr. N. Ruben, Head, Department of Civil Engineering has welcomed all the members and presented the genesis of R19 regulation and importance of introducing Intra-disciplinary, inter-disciplinary and societal centric projects.

- I. P. Sathish, R19 Coordinator has shown all the course structure along with the contents and following suggestions/comments are received from the external members.

1.) IV Year – II Semester Courses:

In order to ensure proper involvement of students into academics to achieve a better control over their work load; a few courses need to be added to the final semester of the Programme. Preferably, online courses / MOOCs, of lesser difficulty may be allotted to ensure this.

Students may also be allowed to take up these courses in the previous semesters to reduce their work – load in the final semester. Hence, eligibility criteria for internship and short- listing should be completed by the end of the III Year – II Semester.

2.) Department Electives:

The department elective subjects maybe listed stream-wise and displayed to the students in the same manner. Due to this, the students will make a more informed decision and may even choose to pursue a set of electives belonging to the same stream.

This will also enable the department to float a consistent pool of electives belonging to all the streams of Civil Engineering. Refer APSCH R19 Model Curriculum,

3.) Course on Building Information Modeling (BIM):

BIM can be made a mandatory course. This will help the syllabus be a bit more future proof. Er. C. Sankaralingam – BoS member, has agreed to provide support to develop a proper curriculum for the same.

4.) Open Elective Courses to be offered by the Department:

Open Elective Courses to be offered stream-wise. A new stream on Building Technology for branches other than Civil will be useful to impart basic Civil Engineering knowledge to all budding engineers (irrespective of their branch/specialization). It will need



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to be constitutes with basics from Building Methods, Buildings Components, Materials, Green Building Concepts etc.

5.) Comments on Projects

Efforts in formulating such an exhaustive project list were appreciated. The BoS members analysed a few projects, chosen at random and questioned their execution and evaluation. They were satisfied with the justifications provided. They also suggested a few projects that could be incorporated into the list of projects.

6.) Proper Division and Patterning of Syllabus – Unit wise – All subjects:

The evaluation pattern and question paper pattern for the proposed syllabus were pondered upon and a few alternatives to the overall layout of the question paper were suggested.

In doing so, it was suggested that the syllabus must be given a consistent template, font choice and layout for all courses. All courses need to have proper names for each unit. Same format of font and font size must be followed for all courses, template to be built of for all courses.

Each unit must be divided into two portions (maximum). This will enable better clarity for lecture delivery and also improve the ease of setting a question paper. Care must be taken while clubbing the topics of a unit into two sub-divisions. They must ease the understanding the of the student and be creative enough to capture the users attention.

7.) Number of Experiments for laboratory Courses:

A Minimum of 15 number of laboratory experiments maybe provided for each laboratory course, out of which, depending on difficulty and time required, the student may be required to complete 10 experiments during the course duration.

8.) Surveying Laboratory – Demo Experiments:

Demo on obsolete technology/tools such as chain surveying use of cross-staff etc. must be performed to ensure that the student understands the development & history of surveying.

9.) Leaf Springs – Solid Mechanics Course

An experiment (or) an intra-departmental project on leaf springs to be included in to the curriculum.



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10.) Staad Pro:

Exposure of students to Staad Pro has to be increased. Ensure that students are skilled enough in Staad Pro, to undertake small-scale live projects. Course Syllabus must display this weightage/importance to Staad Pro.

Outcomes:

1. BoS members approved the revised curriculum (Structure, Syllabus and regulations) of B.Tech, Civil Engineering with percentage revision of 45% and it follows Choice Based Credit System.
2. Structure is provided in Annexure A. Major restructuring has taken place in the curriculum which is oriented towards Project based learning with inclusion of Interdisciplinary, Inter-departmental and Societal centric and industry related projects.
3. All the Courses in the Curriculum are designed to fall under either of the domains of employability or skill development. The mapping of the courses with employability or skill development is provided in Annexure B.
4. In all the courses of the revised curriculum (R19) substantial changes are made in the content and the list is provided in Annexure C.
5. Feedback from various stakeholders such as Students, Employers, Teachers, Alumni and parents is collected, analyzed and their suggestions are implemented in the curriculum.
6. The concept about intra, inter and societal projects are appreciable.
7. Credits for the NPTEL courses are appreciable, but faculty has to advise the students to choose advanced courses which are relevant to industry.

(Dr. D. Ramaseshu)

(Er. E. Sankarlingam)

(Dr. N. Ruben)

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DEPARTMENT OF CIVIL ENGINEERING**ANNEXURE-A****Course Structure-2019 Regulation****I Year Semester - I**

Sl.	Course Title	C
1	Engineering Mathematics - I (F)	5
2	Engineering Physics -I (B)	4
3	Basic Electrical and Electronics Engineering	4
4	Engineering Graphics and Design	3
5	Engineering Mechanics	4
6	Physical Fitness, Sports & Games -I	1
	Total	21

I Year Semester - II

Sl.	Course Title	L	T	P	C
1	Engineering Mathematics - II (F)	3	1	2	5
2	Engineering Chemistry - (B)	3	-	2	4
3	Programming for Problem Solving	3	-	2	4
4	English Proficiency and Communication Skills	-	-	2	1
5	Technical English Communication	1	-	2	2
6	Constitution of India	1	-	-	1
7	Basics of Engineering Products	2	-	2	3
8	Workshop	2	-	2	3
9	Physical Fitness, Sports & Games-II	-	-	3	1
	Total	15	1	21	24

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DEPARTMENT OF CIVIL ENGINEERING**II Year I Semester**

Sl.	Course Title	L	T	P	C
1	Probability and Statistics	3	1	-	4
2	Strength of Materials	3	1	-	4
3	Fluid Mechanics	3	-	2	4
4	Building Material and Concrete Technology	3		2	4
5	Surveying and Geomatics	3	-	2	4
6	Life Skills-I	-	-	2	-
7	Technical Seminar-I	-	-	2	1
8	Intra-disciplinary Project-I	-	-	3	1
9	Physical Fitness, Sports & Games-III	-	-	2	1
	Total	15	2	15	23

II Year II semester

Sl.	Course Title	L	T	P	C
1	Structural Analysis-I	3	-	2	4
2	Hydraulic Engineering	3	-	2	4
3	Environmental Engineering	2	1	-	3
4	Engineering Studies	2	-	-	3
5	Civil Engineering- Society and Global Impact	1	-	-	1
6	Engineering Geology	2	-	-	2
7	Open Elective - I	3	-	-	3
8	Life Skills - II	-	-	2	1
9	Technical Seminar - II	-	-	2	1
10	Intra-Disciplinary Projects - II	-	-	2	1
	Total	16	1	12	23

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DEPARTMENT OF CIVIL ENGINEERING**III Year I semester**

Sl.	Course Title	L	T	P	C
1	Water Resource Engineering	3	-	2	3
2	GeoTechnical Engineering	3		2	4
3	Design of Reinforced Concrete Structure	3	1	-	4
4	Short Term Industrial Training	1	-	-	1
5	Open Elective	3	-	-	3
	Department Elective	3			3
6	Professional Ethics, Human Values and Gender Equality	2			2
7	Soft Skills Laboratory	3	-	2	1
8	Employability Skills - I	-	-	2	0.5
9	Inter-Departmental Projects - I	-	-	4	2
10	Modular Course	-	-	-	1
	Total	19	2	6	24

III Year II semester

Sl.	Course Title	L	T	P	C
1	Structural Engineering-II	3	1	-	4
2	Transportation Engineering	2	-	2	3
3	Design of Steel Structures	3	1	2	4
4	Organisational Behaviour	2	-	2	2
5	Professional Communication Laboratory	-	-	2	1
6	Department Elective-I	3	-	-	3
7	Open Elective -II	2	-	-	2
8	Employability Skills - II	-	-	2	1
9	Inter-Departmental Projects - II	-	-	4	2
	Total	16	2	10	23



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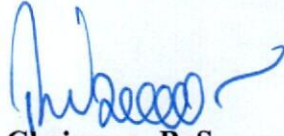
IV Year I semester

Sl.	Course Title	L	T	P	C
1	Construction Planning and Management	3	-	-	3
2	Engineering Economics, Estimation and Costing	3	-	2	4
3	Structural Computation and Design Laboratory	-	-	4	2
4	Design and analysis of Algorithms for Civil Engineering	2	-	-	2
	Department Elective-III	3	-	-	3
	Department Elective-IV	3	-	-	3
	Societal Centric & Industry Oriented Project	-	-	6	3
	Total	15	-	12	21

IV Year II semester

Sl.	Course Title	L	T	P	C
1	Internship / Project work	-	-	24	12
	Total	-	-	24	12

The courses that are highlighted denote implementation of 'Choice Based Credit System (CBCS)'


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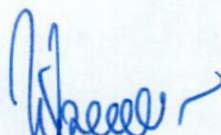
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DEPT. ELECTIVES

S.No	Title of the Elective Course
1.	Sustainable construction Methods
2.	Advanced Hydraulics
3.	Ecological Engineering
4.	Ground Improvement Techniques
5.	Remote Sensing & GIS
6.	Repair and Rehabilitation of Structures
7.	Structural Dynamics
8.	Foundation Engineering
9.	Railway and Airport Engineering
10.	Numerical Methods in Civil Engineering
11.	Instrumentation & Sensor Technologies for Civil Engineering Applications
12.	Bridge Engineering
13.	Pre-Stressed Concrete
14.	Urban Hydrology
15.	Traffic Engineering and Management
16.	Advanced Structural Design
17.	Finite Element Analysis

OPEN ELECTIVES

S.No	Title of the Elective Course
1.	Environmental pollution and Control
2.	Building Technology
3.	Disaster Management
4.	Solid Waste Management
5.	Environmental Impact Assessment


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DEPARTMENT OF CIVIL ENGINEERING**ANNEXURE – B****List of courses that enable employability or entrepreneurship or skill development in the R-19****B-Tech – Civil Engineering**

Sl.	Course Name	Nature of Course
1.	Probability and Statistics	Employability
2.	Strength of material	Skill Development
3.	Fluid Mechanics	Skill Development
4.	Building materials and Concrete Technology	Skill Development
5.	Surveying and geomatics	Skill Development
6.	Life Skills-I	Employability
7.	Technical Seminar-I	Employability
8.	Intra-disciplinary Project-I	Employability
9.	Physical Fitness, Sports & Games-III	Skill Development
10.	Structural Analysis- I	Skill Development
11.	Hydraulic Engineering	Skill Development
12.	Environmental Engineering	Skill Development
13.	Engineering Geology	Employability
14.	Civil Engineering-Societal & Global Impact	Employability
15.	Life Skills – II	Employability
16.	Technical Seminar – II	Employability
17.	Intra-Disciplinary Projects – II	Skill Development
18.	Water Resources Engineering	Skill Development
19.	Geo Technical Engineering	Employability
20.	Design of Reinforced Concrete Structures	Skill Development
21.	Short Term Industrial Training	Employability
22.	Employability Skills-I	Employability

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23.	Inter-departmental Project-I	Employability
24.	Modular Course	Employability
25.	Structural Analysis-II	Skill Development
26.	Transportation Engineering	Skill Development
27.	Design of Steel Structure	Skill Development
28.	Employability Skills – II	Employability
29.	Inter-Departmental Projects - II	Employability
30.	Construction Planning and Management	Skill Development
31.	Engineering Economics, Estimation and Costing	Employability
32.	Structural Computation Lab	
33.	Design and Analysis of Algorithms for Civil Engineering	Employability
34.	Sustainable Construction Methods	Entrepreneurship
35.	Advanced Hydraulics	Skill Development
36.	Ecological Engineering	Skill Development
37.	Ground Improvement Techniques	Skill Development
38.	Disaster Management	Skill Development
39.	Remote Sensing & GIS	Employability
40.	Structural Dynamics	Employability
41.	Repair and Rehabilitation of Structures	Employability
42.	Environmental pollution and Control	Employability
43.	Foundation Engineering	Employability
44.	Railway and Airport Engineering	Entrepreneurship
45.	Numerical Methods in Civil Engineering	Entrepreneurship
46.	Instrumentation & Sensor Technologies for Civil Engineering Applications	Entrepreneurship
47.	Bridge Engineering	Entrepreneurship



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48.	Pre-stressed Concrete	Entrepreneurship
49.	Traffic Engineering and Management	Entrepreneurship
50.	Advanced Structural Design	Employability
51.	Finite Element Analysis	Employability
52.	Building Technology	Employability
53.	Solid Waste Management	Employability
54.	Environmental Impact Assessment	Employability
55.	Project work/ Internship	Entrepreneurship


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ANNEXURE – C

List of new courses in the R19 B-Tech –Civil Engineering

Sl.	Course Name	Year-Semester
1.	Strength of material	II
2.	Fluid Mechanics	II
3.	Building materials and Concrete Technology	II
4.	Surveying and geomatics	II
5.	Life Skills-I	II
6.	Technical Seminar-I	II
7.	Intra-disciplinary Project-I	II
8.	Physical Fitness, Sports & Games-III	II
9.	Structural Analysis- I	II
10.	Hydraulic Engineering	II
11.	Environmental Engineering	II
12.	Engineering Geology	II
13.	Civil Engineering-Societal & Global Impact	II
14.	Life Skills – II	II
15.	Technical Seminar – II	II
16.	Intra-Disciplinary Projects – II	II
17.	Water Resources Engineering	III
18.	Geo Technical Engineering	III
19.	Design of Reinforced Concrete Structures	III
20.	Short Term Industrial Training	III
21.	Employability Skills-I	III
22.	Inter-departmental Project-I	III

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23.	Modular Course	III
24.	Structural Analysis-II	III
25.	Transportation Engineering	III
26.	Design of Steel Structure	III
27.	Employability Skills – II	III
28.	Inter-Departmental Projects - II	III
29.	Construction Planning and Management	IV
30.	Engineering Economics, Estimation and Costing	IV
31.	Structural Computation Lab	IV
32.	Design and Analysis of Algorithms for Civil Engineering	IV
33.	Sustainable Construction Methods	IV
34.	Advanced Hydraulics	IV
35.	Ecological Engineering	IV
36.	Ground Improvement Techniques	IV
37.	Disaster Management	IV
38.	Remote Sensing & GIS	IV
39.	Structural Dynamics	IV
40.	Repair and Rehabilitation of Structures	IV
41.	Environmental pollution and Control	IV
42.	Foundation Engineering	IV
43.	Railway and Airport Engineering	IV
44.	Numerical Methods in Civil Engineering	IV
45.	Instrumentation & Sensor Technologies for Civil Engineering Applications	IV
46.	Bridge Engineering	IV



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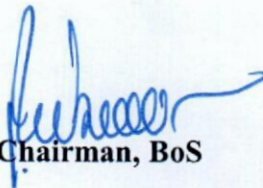
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47.	Pre-stressed Concrete	IV
48.	Traffic Engineering and Management	IV
49.	Advanced Structural Design	IV
50.	Finite Element Analysis	IV
51.	Building Technology	IV
52.	Solid Waste Management	IV
53.	Environmental Impact Assessment	IV
54.	Project work/ Internship	IV


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