

10-07-2021

Minutes of Board of Studies Meeting

Department of Civil Engineering has conducted a BoS meeting held on 10/07/2021 to discuss and finalize the R21 Curriculum for the B.Tech Civil Engineering Programme through Virtual Mode.

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

Sl. No.	Name of the Member	Designation	Internal/ External	Signature
1	Er. C. Sankarlingam	Vice-President & Head-Special Projects, L&T Construction, Chennai.	External	Attended Online
2	Dr. P. Jayabalan	Professor, Department of Civil Engineering, NIT Trichy.	External	
3	Dr. D. Ramaseshu	Professor, Department of Civil Engineering, National Institute of Technology, Warangal.	External	
4	Dr. Komaragiri Srinivasa Raju	Professor, BITS HYD	External	
5	Dr. Sridhar Raju	Assistant Executive Associate Professor, Department of Civil Engineering, BITS HYD	External	
6	Dr. N. Ruben	Chairman BoS	Internal	<i>Ruben</i>
7	Dr. A. Siva Sankar	Professor	Internal	<i>A. Siva Sankar</i>
8	Dr. D. Satish Chandra	Associate Professor	Internal	<i>Dr. D. Satish Chandra</i>
9	Dr. M. Karthikeyan	Associate Professor	Internal	<i>M. Karthikeyan</i>
10	Dr. P. Parthiban	Assistant Professor	Internal	<i>P. Parthiban</i>
11	Mr. M. V. Raju	Assistant Professor	Internal	<i>M. V. Raju</i>
12	Mr. R. V. Ramana	Assistant Professor	Internal	<i>R. V. Ramana</i>
13	Mr. M. Anirudh	Assistant Professor	Internal	<i>M. Anirudh</i>
14	Mr. B.J.N Satish	Assistant Professor	Internal	<i>B. J. N. Satish</i>
15	Ms. B. Ravali	Assistant Professor	Internal	<i>B. Ravali</i>

Agenda of the Meeting:

- I. Dr. N. Ruben, Head, Department of Civil Engineering has welcomed all the members and presented the genesis of R21 regulation and importance of introducing Intra-disciplinary, inter-disciplinary and societal centric projects.
- II. Mr.B.J.N.Satish, R21 Coordinator has shown all the course structure along with the contents and following suggestions/comments are received from the external members.

The suggestions given by BoS members are as follows:

1. Dr.K. Srinivas Raju:

- Introduce 'C' programming in first year.
- Think whether the student can understand data structures in II B. Tech-I sem.
- Regarding IT courses, course titles need to be changed.
- Consider AICTE norms and verify whether R21 is following those norms are not.
- Hydraulic engineering lab component should be included in Fluid Mechanics and the subject name should be renamed as Fluid Mechanics and hydraulic Machinery.
- For Structural Analysis-II subject lab component should be added.
- Reduce intra disciplinary projects II and mini project.
- Design and Analysis of Algorithms for Civil Engineering course should be reorganized in the curriculum.
- Course title has to be changed for "Programming for Problem Solving."
- NPTEL links are to be included in references of every course.
- Mention either Exercise/Experiment for computer science/IT courses.

2. Dr. D. RamaSeshu:

- Geotechnical engineering, lecture hours should be improved.
- Reduce credits for competitive coding and enhance credits for DRCS.
- Software Courses can offer as certificate courses.
- Rethink about merging of core courses.

3. Er. C. Sankarlingam:

- Civil Engineering courses should not loose core courses.
- But the core courses should not lose their essence.
- For Civil Engineering graduates, basics of computer courses is sufficient than in-depth knowledge.

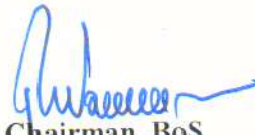


4. Dr. Sridhar Raju:

- Agreed for merging of Hydraulic Engineering component into Fluid Mechanics lab component.
- Foundation should be strong, either software courses or core courses.
- Software courses can offer as electives.
- The labs for FM (Fluid Mechanics) and HM (Hydraulic machines) needs to be merged instead of separate labs for both subjects offering in two semesters.
- In semester VI, more clarity is required between Competitive coding and Employability Skill-II.
- As far as possible minimize the overlapping like, Repetitive topics in IT courses.
- Comparison between AICTE norms and UGC w.r.t VFSTR need to be prepared (Pie Chart).
- Title change of one IT course is specified (Details shall be given).
- In IT courses, where experiments are involved, more emphasis need to be given "Civil related issues".
- For all courses, NPTEL links should be provided.
- Text book: Many text book references are 2000. Include latest edition text books and references.
- Some of the important core subjects like, Structural Analysis, water resources engg, Environmental Engg, Geotechnical Engg, Transportation Engg etc., has got credits of only 2 because of these IT courses.
- They specified that they should be increased by 4 which gives justice for Core Subjects.
- In syllabus, the Starting of the UNIT TOPIC should be made bold letters.
- Two BoS members quoted regarding R21 syllabus "Superficial in Everything and No depth in anything"
- The BoS members unanimously said that "Offer 4 IT courses in Four years (1 Subject in each year) and the remaining 4 courses can be taught as Certification courses". These certification courses improve the student's employability.

Outcomes of the Meeting:

1. BoS members approved the revised curriculum (Structure, Syllabus and regulations).
Course Structure is provided in Annexure A.
2. The Curriculum follows Choice Based Credit System and revision percentage is 45%.
3. 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.
4. 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.
5. In all the courses of the revised curriculum (R21) substantial changes are made in the content and the New courses list is provided in Annexure C.
6. Feedback from various stakeholders such as Students, Employers, Teachers, and Alumni are collected, analyzed and their suggestions are implemented in the curriculum.
7. The concept about intra, inter and societal projects are appreciable.
8. Credits for the NPTEL courses are appreciable, but faculty has to advise the students to choose advanced courses which are relevant to industry.



Chairman, BoS



ANNEXURE - A

Department of Civil Engineering

R-21 Course Structure

I Year I Semester

Sl.	Course Name	L	T	P	Credits
1	Engineering Mathematics - I (F)	3	1	-	4
2	Engineering Physics-I (B)	3	-	2	4
3	Basic Electrical and Electronics Engineering	3	-	2	4
4	Engineering Graphics & Design	-	-	2	1
5	Engineering Mechanics	3	1	-	4
6	Introduction to C Programming for problem solving	3	-	2	4
7	Physical Fitness, Sports & Games - I	-	-	3	1
	Total	15	2	11	22

I Year II Semester

Sl.	Course Name	L	T	P	Credits
1	Engineering Mathematics - II (F)	3	1	-	4
2	Engineering Chemistry (B)	2	-	-	2
3	Programming for Problem Solving	3	-	2	4
4	English Proficiency and Communication Skills	-	-	2	1
5	Technical English Communication	2	-	2	3
6	Constitution of India	1	-	-	1
7	Basic Engineering Products	2	-	2	3
8	Workshop	1	-	2	2
9	Physical Fitness, Sports & Games - II	-	-	3	1
	Total	14	1	13	21

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

Established under the UGC Act 1956

II Year I Semester

Sl.	Course Name	L	T	P	Credits
1	Data Structures	2	-	2	3
2	Probability and Statistics	3	1	-	4
3	Strength of Materials	3	-	-	3
4	Fluid Mechanics & Hydraulic machinery	3	-	2	4
5	Building Material and Concrete Technology	3	-	2	4
6	Surveying and Geomatics	3	-	2	4
7	Life Skills-I	-	-	2	-
8	Technical Seminar-I	-	-	2	1
9	Intra-disciplinary Projects-I	-	-	2	1
10	Physical Fitness, Sports & Games-III	-	-	2	1
11	Building planning and management using BIM/AUTO CADD	2		2	3
	Total	17	1	16	28

II Year II Semester

Sl.	Course Name	L	T	P	Credits
1	Structural Analysis - I	3		-	3
2	Hydraulic Engineering	3	-	0	3
3	Environmental Engineering	3	-	2	4
4	Engineering Geology	3	-	2	4
5	Data Base Management System	2	-	2	3
6	Environmental Studies	1	-	-	1
7	Life Skills - II	-	-	2	1
8	Technical Seminar - II	-	-	2	1
9	Intra-Disciplinary Projects - II	-	-	2	1



10	Modular course – I	1	0	0	1
	Total	17	1	14	22

III Year I Semester

Sl.	Course Name	L	T	P	Credits
1	Water Resources Engineering	3	0	-	3
2	Geo technical Engineering	3	-	2	4
3	Design of Reinforced Concrete Structures	3	1	-	4
4	Department Elective - I	3	-	-	3
5	Human Values, Professional Ethics & Gender Equity	2	-	-	2
6	Soft Skills Laboratory	-	-	2	1
7	Employability Skills – I	-	-	0	-
8	Inter-Departmental Projects – I	-	-	4	2
9	Modular Course – II	-	-	-	1
	Total	17	1	14	23

III Year II Semester

Sl.	Course Name	L	T	P	Credits
1	Structural Analysis -II	3	-	2	4
2	Transportation Engineering (Lab with MX ROAD)	3	-	2	4
3	Organizational Behavior	2	-	-	2
4	Professional Communications Lab	-	-	2	1
5	Department Elective - II	3	-	-	3
6	Open Elective – I (NPTEL/ Swayam)	3	-	-	3
7	Employability Skills - II	-	-	2	1
8	Inter-Departmental Projects - II	-	-	4	2
	Total	16	0	18	20



IV Year I Semester

Sl.	Course Name	L	T	P	Credits
1	Construction Planning and Management	3	-	-	3
2	Engineering Economics, Estimation and Costing	3	-	2	4
3	Design of Steel Structures (Lab with ETABS/ANSYS)	3		2	4
4	Remote Sensing and GIS	2	-	-	2
5	Department Elective – III (NPTEL/ Swayam)	3	-	-	3
6	Department Elective - IV (NPTEL/ Swayam)	3	-	-	3
7	Societal-Centric and Industry Related Projects	-	-	6	3
	Total	14	-	8	22

IV Year II Semester

Sl.	Course Name	L	T	P	Credits
1	Internship / Project work	-	-	24	12
	Total	-	-	24	12

The Courses that are highlighted denote implemented of “Choice based Credit System (CBCS)”


Chairman, BoS




VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be University)
Established under the UGC Act 1956

Department of Civil Engineering

R-21 Course Structure

Departmental Electives

Sl.	Course Name	L	T	P	Credits
1	Sustainable Construction Methods	3	-	-	3
2	Advanced Hydraulics	3	-	-	3
3	Ecological Engineering	3	-	-	3
4	Ground Improvement Techniques	3	-	-	3
5	Remote Sensing and GIS	3	-	-	3
6	Disaster Management	3	-	-	3
7	Repair and Rehabilitation of Structures	3	-	-	3
8	Structural Dynamics	3	-	-	3
9	Environmental Pollution and Control	3	-	-	3
10	Foundation Engineering	3	-	-	3
11	Railway and Airport Engineering	3	-	-	3
12	Numerical Methods in Civil Engineering	3	-	-	3
13	Instrumentation and Sensor Technologies for Civil Engineering Application	3	-	-	3
14	Bridge Engineering	3	-	-	3
15	Pre-Stressed Concrete	3	-	-	3
16	Urban Hydrology	3	-	-	3
17	Traffic Engineering and management	3	-	-	3
18	Advanced Structural Design	3	-	-	3
19	Finite Element Analysis	3	-	-	3


Chairman, BoS



ANNEXURE – B

All the Courses in the Curriculum are designed to fall under either of the domains of employability or skill development.

S.No	Course Name	Employability/Skill Development/Entrepreneurship
1	Engineering Mathematics - I (F)	Skill Development
2	Engineering Physics-I (B)	Skill Development
3	Basic Electrical and Electronics Engineering	Skill Development
4	Engineering Graphics & Design	Skill Development
5	Engineering Mechanics	Skill Development
6	Introduction to C Programming for problem solving	Skill Development
7	Physical Fitness, Sports & Games - I	Skill Development
8	Engineering Mathematics - II (F)	Skill Development
9	Engineering Chemistry (B)	Skill Development
10	Programming for Problem Solving	Skill Development
11	English Proficiency and Communication Skills	Skill Development
12	Technical English Communication	Skill Development
13	Constitution of India	Skill Development
14	Basic Engineering Products	Skill Development
15	Workshop	Skill Development
16	Physical Fitness, Sports & Games - II	Skill Development
17	Data Structures	Skill Development
18	Probability and Statistics	Skill Development
19	Strength of Materials	Skill Development
20	Fluid Mechanics & Hydraulic machinery	Skill Development
21	Building Material and Concrete Technology	Skill Development

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

-Estb. u/s 2 of UGC Act 1956

22	Surveying and Geomatics	Skill Development
23	Life Skills-I	Employability
24	Technical Seminar-I	Employability
25	Intra-disciplinary Project-I	Entrepreneurship
26	Physical Fitness, Sports & Games-III	Skill Development
27	Building planning and management using BIM/AUTO CADD	Skill Development
28	Structural Analysis - I	Skill Development
29	Hydraulic Engineering	Skill Development
30	Environmental Engineering	Skill Development
31	Engineering Geology	Skill Development
32	Data Base Management System	Skill Development
33	Environmental Studies	Skill Development
34	Life Skills – II	Employability
35	Technical Seminar - II	Employability
36	Intra-Disciplinary Projects - II	Entrepreneurship
37	Water Resources Engineering	Skill Development
38	Geo technical Engineering	Skill Development
39	Design of Reinforced Concrete Structures	Skill Development
40	Python Programming	Skill Development
41	Human Values, Professional Ethics & Gender Equity	Skill Development
42	Soft Skills Laboratory	Skill Development
43	Employability Skills - I	Employability
44	Inter-Departmental Projects - I	Entrepreneurship
45	Modular Course –II	Skill Development
46	Structural Analysis –II	Skill Development

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

Estd. in 1983 of UBC Act 1956

47	Transportation Engineering (Lab with MX ROAD)	Skill Development
48	Organizational Behavior	Skill Development
49	Professional Communications Lab	Skill Development
50	Department Elective - II	Skill Development
51	Open Elective – I (NPTEL/ Swayam)	Skill Development
52	Employability Skills – II	Employability
53	Inter-Departmental Projects – II	Entrepreneurship
54	Construction Planning and Management	Skill Development
55	Engineering Economics, Estimation and Costing	Skill Development
56	Design of Steel Structures (Lab with ETABS/ANSYS)	Skill Development
57	Remote Sensing and GIS	Skill Development
58	Department Elective – III (NPTEL/ Swayam)	Skill Development
59	Department Elective - IV (NPTEL/ Swayam)	Skill Development
60	Societal-Centric and Industry Related Projects	Entrepreneurship
61	Internship	Employability
62	Sustainable Construction Methods	Skill Development
63	Advanced Hydraulics	Skill Development
64	Ecological Engineering	Skill Development
65	Ground Improvement Techniques	Skill Development
66	Remote Sensing and GIS	Skill Development
67	Disaster Management	Skill Development
68	Repair and Rehabilitation of Structures	Skill Development
69	Structural Dynamics	Skill Development
70	Environmental Pollution and Control	Skill Development
71	Foundation Engineering	Skill Development



VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be University)
2019 U.S. 3 of USC Act 1956

72	Numerical Methods in Civil Engineering	Skill Development
73	Instrumentation and Sensor Technologies for Civil Engineering Application	Skill Development
74	Bridge Engineering	Skill Development
75	Pre-Stressed Concrete	Skill Development
76	Urban Hydrology	Skill Development
77	Traffic Engineering and management	Skill Development
78	Advanced Structural Design	Skill Development
79	Finite Element Analysis	Skill Development


Chairman, BoS



VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be University)
- Estd. u/s of UBC Act 1956

ANNEXURE – C

LIST OF NEW COURSES

S.NO	COURSE NAME
1	Introduction to C Programming for problem solving
2	Programming for Problem Solving
3	Data Base Management System
4	Python Programming
5	Remote Sensing and GIS
6	Data Structures
7	Building Material and Concrete Technology
8	Surveying and Geomatics
9	Building planning and management using BIM/AUTO CADD
10	Hydraulic Engineering
11	Environmental Engineering
12	Engineering Geology
13	Water Resources Engineering
14	Geo technical Engineering
15	Design of Reinforced Concrete Structures
16	Structural Analysis –II
17	Transportation Engineering (Lab with MX ROAD)
18	Construction Planning and Management
19	Engineering Economics, Estimation and Costing
20	Design of Steel Structures (Lab with ETABS/ANSYS)


Chairman, BoS