

Guru Nanak Dev Engineering College, Ludhiana
(An Autonomous College under UGC Act)
Civil Engineering Department

Minutes of Meeting

The 3rd meeting of Board of Studies (Civil Engineering) was held on 25th May, 2015 in the office of Head of Department, Civil department and chaired by Dr. J N Jha (Professor & Head).

Following members were present in the meeting:

Dr. J N Jha – Chairman - Guru Nanak Dev Engineering College, Ludhiana

Dr. Harpal Singh – Member - Guru Nanak Dev Engineering College, Ludhiana,

Dr. H S Rai – Member- Guru Nanak Dev Engineering College, Ludhiana

Dr. B S Walia – Member- Guru Nanak Dev Engineering College, Ludhiana

Dr. Harvinder Singh – Member - Guru Nanak Dev Engineering College, Ludhiana

Er. Puneet Pal Singh Cheema – Member – Guru Nanak Dev Engineering College, Ludhiana

Er. Inderpreet Kaur – Member - Guru Nanak Dev Engineering College, Ludhiana

Dr. Sanjeev Aggarwal – Member- GZSPTU Campus, Bathinda - Subject Expert- VC Nominee

Er. Satish Kumar Tanwar – Member- Ultratech- Industry Representative,

Dr. S S Saini – Special Invitee – Former HoD (Civil) & Dean, IIT Roorkee

Er. Gurdeepak Singh - Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

Dr. Jagbir Singh - Special Invitee- Guru Nanak Dev Engineering College, Ludhiana

The Following decisions were taken against the Agenda items:

1. The proposal of Open Elective subject in B.Tech (Civil Engg.) – UG course 2014 admission batch onwards and to be implemented from 3rd semester (i.e. Aug.2015 session) was discussed and accepted with following minor changes in study scheme without changing the total credits of any year.(revised scheme attached)

S No	Sem	Subject code	Subject Name	Previous/Proposed Credits	Approved New Credits
1	3 rd	BTCE-305	Building Material & Construction	4	3
2	5 th	BTCE-403	Design of Concrete Structures – I	4	5
3	6 th	BTCE-601	Design of Concrete Structures – II	4	5
4	6 th	BTCE-605	Professional Practice	5	4
5	6 th	BTCE-ZZZ	Open Elective	3	4

2. The proposal of swapping two subjects of B.Tech (Civil Engg. - Batch 2014 onwards) mutually without changing the credits & total marks of respective semester was approved.

Subject Code	Subject Name	Previous Semester	New Semester
BTCE-607	Geotechnical Engineering Lab	5 th	6 th
BTCE-507	Environmental Engineering Lab	6 th	5 th

3. The proposed syllabus of 3rd & 4th semester for UG course (Batch 2014 & onwards) was approved.
4. The BOS suggests to change the nomenclature of two subjects of B.Tech (Civil Engg.- Batch 2014 onwards) as per their content detail from “Geotechnical Engineering” (5th semester) and “Foundation Engineering” (6th Semester) to “Geotechnical Engineering – I” (5th semester) and “Geotechnical Engineering – II” (6th semester) respectively.
5. It was also suggested to introduce more number of software related to civil engineering in list of software for training semester (7th/8th of UG course).
6. It was also suggested to introduce more number of subjects in list of open elective & also in the list of electives being offered in 7th/8th semester as per different categories to introduce the new concepts of modern technologies related to the course.
7. The proposed syllabus of 2nd & 3rd semester for all PG courses was approved.
8. BOS recommended a common nomenclature for subject codes of open electives being offered in PG courses by changing the current subject code e.g. **MTEV – XXX**, **MTST – XXX**, **MTGT – XXX** to **MTCE – XXX** to be implemented for Batch 2015 & onwards (list attached).
9. The board also suggests introducing more number of subjects in the list of open electives in PG courses.

The meeting ended with vote of thanks.

Dr. J N Jha
(Chairman)

1. Under Graduate Programme
a) For Batch 2014 & Onwards

Year	Credit
1 st Year	50
2 nd Year	55
3 rd Year	55
4 th Year	45
Total Credits	205

Physics Group

B.Tech. (1st semester)

Contact Hours: 32

Course Code	Course Name	Load Allocation			Marks Distribution			Credits
		L	T	P	Internal	External	Total	
BTAM-101	Engg. Mathematics-I	4	1	-	40	60	100	5
BTPH-101	Engg. Physics	3	1	-	40	60	100	4
BTHU-101	Communicative English	3	-	-	40	60	100	3
BTEE-101	Basic Electrical & Electronics Engg.	4	1	-	40	60	100	5
HVPE-101	Human Values and Professional Ethics	3	-	-	40	60	100	3
BTMP-101	Manufacturing Practices	-	-	6	60	40	100	3
BTPH-102	Engg. Physics Lab	-	-	2	30	20	50	1
BTHU-102	Communicative English Lab	-	-	2	30	20	50	1
BTEE-102	Basic Electrical & Electronics Engg.Lab	-	-	2	30	20	50	1
Total	5 Theory Courses + 4 Laboratory Courses	17	3	12	350	400	750	23

Course Code	Course Name	Load Allocation			Marks Distribution			Credits
		L	T	P	Internal	External	Total	
BTAM-101	Engg. Mathematics-I	4	1	-	40	60	100	5
BTCH-101	Engg. Chemistry	3	1	-	40	60	100	4
BTME-101	Elements of Mechanical Engg.	4	1	-	40	60	100	5
BTCS-101	Fundamentals of computer programming and IT	3	-	-	40	60	100	3
BTME-102	Engg. Drawing	1	-	6	40	60	100	4
EVSC-101	Environmental Science	2	-	-	40	60	100	2
BTCH-102	Engg. Chemistry Lab	-	-	2	30	20	50	1
BTCS-102	Fundamentals of computer programming and IT	-	-	4	30	20	50	2
BTME103	Engg. Computer graphics Lab	-	-	2	30	20	50	1
Total	6 Theory Courses + 3 Laboratory Courses	17	3	14	320	380	750	27

Course Code	Course Name	Load Allocation			Marks Distribution			Credits
		L	T	P	Internal	External	Total	
BTAM-102	Engg. Mathematics-II	4	1	-	40	60	100	5
BTPH-101	Engg. Physics	3	1	-	40	60	100	4
BTHU-101	Communicative English	3	-	-	40	60	100	3
BTEE-101	Basic Electrical & Electronics Engg.	4	1	-	40	60	100	5
HVPE-101	Human Values and Professional Ethics	3	-	-	40	60	100	3
BTMP-101	Manufacturing Practices	-	-	6	60	40	100	3
BTPH-102	Engg. Physics Lab	-	-	2	30	20	50	1
BTHU-102	Communicative English Lab	-	-	2	30	20	50	1
BTEE-102	Basic Electrical & Electronics Engg.Lab	-	-	2	30	20	50	1
Total	5 Theory Courses + 4 Laboratory Courses	17	3	12	350	400	750	23

Course Code	Course Name	Load Allocation			Marks Distribution			Credits
		L	T	P	Internal	External	Total	
BTAM-102	Engg. Mathematics-II	4	1	-	40	60	100	5
BTCH-101	Engg. Chemistry	3	1	-	40	60	100	4
BTME-101	Elements of Mechanical Engg.	4	1	-	40	60	100	5
BTCS-101	Fundamentals of computer programming and IT	3	-	-	40	60	100	3
BTME-102	Engg. Drawing	1	-	6	40	60	100	4
EVSC-101	Environmental Science	2	-	-	40	60	100	2
BTCH-102	Engg. Chemistry Lab	-	-	2	30	20	50	1
BTCS-102	Fundamentals of computer programming and IT	-	-	4	30	20	50	2
BTME103	Engg. Computer graphics Lab	-	-	2	30	20	50	1
Total	6 Theory Courses + 3 Laboratory Courses	17	3	14	320	380	750	27

Revised Scheme

Third Semester		Contact Hours: 31 Hrs						
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTAM-301	Engineering Mathematics-III*	3	1	-	40	60	100	4
BTCE-301	Fluid Mechanics-I	3	1	-	40	60	100	4
BTCE-302	Rock Mechanics & Engg. Geology	3	1	-	40	60	100	4
BTCE-303	Strength of Materials	3	1	-	40	60	100	4
BTCE-304	Surveying	3	1	-	40	60	100	4
BTCE-305	Building Materials & Construction	3	0	-	40	60	100	3
BTCE-306	Fluid Mechanics-I Lab	-	-	2	30	20	50	1
BTCE-307	Strength of Materials Lab	-	-	2	30	20	50	1
BTCE-308	Surveying Lab	-	-	3	30	20	50	2
BTCE-309	Workshop Training of 4 weeks duration after 2 nd semester Carpentry, Electrical, Plumbing, Masonry, CAD				30	20	50	1
Total		19	05	07	360	440	800	28

* This subject shall be taught by the faculty of Applied Science Department

Fourth Semester				Contact Hours: 28 Hrs				
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTCE-401	Geomatics Engineering	3	1	-	40	60	100	4
BTCE-402	Construction Machinery & Works Management	3	1	-	40	60	100	4
BTCE-403	Design of Concrete Structures-I	4	1	-	40	60	100	5
BTCE-404	Fluid Mechanics-II	3	1	-	40	60	100	4
BTCE-405	Irrigation Engineering-I	3	1	-	40	60	100	4
BTCE-406	Structural Analysis-I	3	1	-	40	60	100	4
BTCE-407	Concrete Technology Lab	-	-	2	30	20	50	1
BTCE-408	Structural Analysis Lab	-	-	2	30	20	50	1
BTCE-409	General Fitness				100	-	100	
Total		18	06	04	400	400	800	27

Fifth Semester				Contact Hours: 26 Hrs				
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTCE-501	Design of Steel Structures-I	3	1	-	40	60	100	4
BTCE-502	Geotechnical Engineering-I	3	1	-	40	60	100	4
BTCE-503	Structural Analysis-II	3	1	-	40	60	100	4
BTCE-504	Transportation Engineering-I	3	1	-	40	60	100	4
BTCE-505	Environmental Engineering-I	3	1	-	40	60	100	4
BTCE-506	Transportation Engineering Lab	-	-	2	30	20	50	1
BTCE-507	Environmental Engineering Lab	-	-	2	30	20	50	1
BTCE-508	Computer Aided Structural Drawing-I	-	-	2	30	20	50	1
BTCE-509	Survey Camp of 04 weeks duration after 4 th Semester				100	50	150	4
Total		15	05	06	390	410	800	27

Sixth Semester					Contact Hours: 30 Hrs			
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTCE-601	Design of Concrete Structures-II	4	1	-	40	60	100	5
BTCE-602	Elements of Earthquake Engineering	3	1	-	40	60	100	4
BTCE-603	Geotechnical Engineering-II	4	1	-	40	60	100	5
BTCE-ZZZ	Open Elective*	4	0	-	40	60	100	4
BTCE-605	Professional Practice	3	1	-	40	60	100	4
BTCE-606	Environmental Engineering-II	3	1	-	40	60	100	4
BTCE-607	Geotechnical Engineering Lab	-	-	2	30	20	50	1
BTCE-608	Computer Aided Structural Drawing-II	-	-	2	30	20	50	1
BTCE-609	General Fitness				100	-	100	
Total		20	06	04	400	400	800	28

Seventh/Eighth Semester								
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTCE-701	(a) Software Training*				150	100	250	7
	(b) Industrial Training	-	-	-	300	200	500	13
Total					450	300	750	20

***List of Software for Training any one may be learnt during Training Period**

Any software that enhances professional capability in civil engineering practice a partial indicative list is mentioned below:

***Changes in the credits are in () form.**

- | | |
|---------------------|-------------------------|
| 1. GT STRUDAL | 2. PRIMA VERA |
| 3. GEOTECH | 4. ARCVIEW GIS |
| 5. GEO 5 | 6. GEO STUDIO PROF 2004 |
| 7. AUTOCAD CIVIL 3D | 8. MX ROAD |

9. GEOMATIC

10. STAAD PRO

11. HDM-4

12. PLAXIS

13. Any other relevant software

Seventh/Eighth Semester					Contact Hours: 25 Hrs			
Course Code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
		L	T	P	Internal Marks	External Marks		
BTCE-801	Design of Steel Structures-II	3	1	-	40	60	100	4
BTCE-802	Disaster Management	4	0	-	40	60	100	4
BTCE-803	Irrigation Engineering-II	3	1	-	40	60	100	4
BTCE-804	Transportation Engineering-II	3	1	-	40	60	100	4
BTCE-XXX	Elective-I	3	0	-	40	60	100	3
BTCE-YYY	Elective- II	3	0	-	40	60	100	3
BTCE-805	Project	-	-	3	100	50	150	3
	General Fitness				100	-	100	
Total		19	03	03	440	410	850	25

* Elective I and Elective II should not be from the same group

List of Electives (7th /8th Semester):**• Structural Engineering**

BTCE- 806 Dynamics of Structures

BTCE- 807 Finite Element Methods

BTCE- 808 Advanced Reinforced Concrete Design

BTCE- 809 Pre-stressed Concrete

• Geotechnical Engineering

BTCE- 810 Ground Improvement Techniques

BTCE- 811 Soil Dynamics and Machine Foundation

BTCE- 812 Earth and earth Retaining Structures

BTCE- 813 Reinforced Earth and Geotextiles.

• Environmental/ Irrigation Engineering

BTCE- 814 Advanced Environmental Engineering

BTCE- 815 Environmental Impact Assessment

BTCE- 816 Flood Control and River Engineering

BTCE- 817 Hydrology and Dams

• Infrastructure / Transportation Engineering

BTCE- 818 Pavement Design

BTCE- 819 Traffic Engineering

BTCE- 820 Bridge Engineering

BTCE- 821 Infrastructure Developments and Management

List of Open Electives (6th Semester)

1. Numerical Methods in Engineering
2. Mechanical Vibrations
3. Modeling & Simulation
4. Optimization Techniques
5. Electrical Auditing & Management

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Civil Engineering Department

Course Scheme: M. Tech (Environmental Science & Engineering)—Full Time

Schedule of Teaching and Study Scheme (Batch 2015 & onwards)

Semester	Subjects	Credits	Contact Hours/week			No. of subjects	Distribution of marks		Total Credits
			L	T	P		Ext	Int	
1	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory-1	2	--	-	4	1	50	50	
2	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory -2	2	--	-	4	1	50	50	
3	Program elective	3	3	-	-	1	100	50	14
	Program elective	3	3	-	-	1	100	50	
	Pre-thesis seminar	4	-	-	4	1	50	50	
	Pre-thesis project	4	-	-	4	1	50	50	
4	Thesis/Dissertation	14	14	-	-	--	100	200	14
Total Marks and credits							1500	1000	68

List of Core Subjects

S. No.	Subject	Subject Code
1	Physico-Chemical Treatment Methods	MTEV-501
2	Environmental Chemistry and Microbiology	MTEV-502
3	Biological Treatment Methods	MTEV-503
4	Research Methodology	MTEV-504
5	Solid and Hazardous Waste Management	MTEV-505
6	Air Pollution and Control	MTEV-506

List of Laboratory/Practical work

S. No.	Subject	Subject Code
1	Laboratory-1	MTEV-507
2	Laboratory-2	MTEV-508
3	Pre-thesis seminar	MTEV-509
4	Pre-thesis project	MTEV-510
5	Thesis	MTEV-511

List of Program Electives

S. No.	Subject	Subject Code
1	Environmental Systems Engineering	MTEV-601
2	Physics of Environment	MTEV-602
3	Environmental Hydraulics and Hydrology	MTEV-603
4	Environmental Remote Sensing and GIS	MTEV-604
5	Urban Water Management	MTEV-605
6	Biodegradation and Bioremediation	MTEV-606
7	Climate Change and Sustainable Development	MTEV-607
8	Rural Water Supply and Environmental Sanitation	MTEV-608
9	Environmental Geotechnology	MTEV-609
10	Energy Technology and Alternate Energy Systems	MTEV-610
11	Strength of Materials	MTEV-611
12	Buried Structures	MTEV-612
13	Environmental Impact Assessment and Management	MTEV-613
14	Disaster Reduction and management	MTEV-614
15	Site Investigations	MTEV-615
16	Environmental Legislation and Auditing	MTEV-616
17	Air and Water Quality Modeling	MTEV-617
18	Environmental Biotechnology	MTEV-618
19	Industrial Waste Management	MTEV-619
20	Pollution Monitoring techniques	MTEV-620

List of subjects to be offered as 'Open Electives'

1	Experimental Methods in Engineering	MTCE-621
2	Numerical Methods in Engineering	MTCE-622
3	Instrumentation and model simulation	MTCE-623
4	Advanced Engineering Mathematics	MTCE-624
5	Probabilistic Methods in Engineering	MTCE-625
6	Limit Analysis	MTCE-626

Guru Nanak Dev Engineering College, Ludhiana
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Civil Engineering Department

Course Scheme: M. Tech (Structural Engineering)—Full Time

Schedule of Teaching and study Scheme (Batch 2015 & onwards)

Semester	Subjects	Credits	Contact Hours/week			No. of subjects	Distribution of marks		Total Credits
			L	T	P		Ext	Int	
1	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory-1	2	--	-	4	1	50	50	
2	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory -2	2	--	-	4	1	50	50	
3	Program elective	3	3	-	-	1	100	50	14
	Program elective	3	3	-	-	1	100	50	
	Pre-thesis seminar	4	-	-	4	1	50	50	
	Pre-thesis project	4	-	-	4	1	50	50	
4	Thesis/Dissertation	14	14	-	-	--	100	200	14
Total Marks and credits							1500	1000	68

List of Core Subjects

S. No.	Subject	Subject Code
1	Structural Dynamics	MTST-501
2	Bridge Engineering	MTST-502
3	Theory and Design of Plates, Shells and Grids	MTST-503
4	Research Methodology	MTST-504
5	Advanced Solid Mechanics & Structural Analysis	MTST-505
6	Plastic Analysis and Design of Steel Structures	MTST-506

List of Laboratory/Practical work

S. No.	Subject	Subject Code
1	Laboratory-1	MTST-507
2	Laboratory-2	MTST-508
3	Pre-thesis seminar	MTST-509
4	Pre-thesis project	MTST-510
5	Thesis	MTST-511

List of Program Electives

S. No.	Subject	Subject Code
1	Nonlinear Analysis and computer aided methods	MTST-601
2	Finite Element Methods	MTST-602
3	Non-destructive Testing and Composite Materials	MTST-603
4	High Rise Buildings	MTST-604
5	Structural Reliability	MTST-605
6	Structural Optimisation	MTST-606
7	Pre-stressed Concrete Structures	MTST-607
8	Analysis & Design of substructures	MTST-608
9	Soil-Structure Interaction	MTST-609
10	Earthquake Resistant Design of Masonry and RC Buildings	MTST-610
11	Buried Structures	MTST-611
12	Design of Highway and Airport Pavements	MTST-612
13	Environmental Impact assessment & Management	MTST-613
14	Disaster Reduction and Management	MTST-614
15	Site Investigations	MTST-615
16	Advanced Structure Design and detailing	MTST-616
17	Industrial Structures	MTST-617
18	Theory of elasticity and plasticity	MTST-618
19	Structural Stability	MTST-619
20	Ground Improvement	MTST-620

List of subjects to be offered as 'Open Electives'

1	Experimental Methods in Engineering	MTCE-621
2	Numerical Methods in Engineering	MTCE-622
3	Instrumentation and model simulation	MTCE-623
4	Advanced Engineering Mathematics	MTCE-624
5	Probabilistic Methods in Engineering	MTCE-625
6	Limit Analysis	MTCE-626

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Civil Engineering Department

Course Scheme: M. Tech (Geotechnical Engineering)—Full Time

Schedule of Teaching and study scheme (Batch 2015 & onwards)

Semester	Subjects	Credits	Contact Hours/week			No. of subjects	Distribution of marks		Total Credits
			L	T	P		Ext	Int	
1	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory-1	2	--	-	4	1	50	50	
2	Core subjects	4	4	-	-	3	100	50	20
	Program elective	3	3	-	-	1	100	50	
	Open elective	3	3	-	-	1	100	50	
	Laboratory -2	2	--	-	4	1	50	50	
3	Program elective	3	3	-	-	1	100	50	14
	Program elective	3	3	-	-	1	100	50	
	Pre-thesis seminar	4	-	-	4	1	50	50	
	Pre-thesis project	4	-	-	4	1	50	50	
4	Thesis/Dissertation	14	14	-	-	--	100	200	14
Total Marks and credits							1500	1000	68

List of Core Subjects

S. No.	Subjects	Subject Code
1	Soil Dynamics	MTGT-501
2	Advanced Foundation Engineering	MTGT-502
3	Applied Soil Mechanics	MTGT-503
4	Research Methodology	MTGT-504
5	Analysis of Settlement of Soils & Foundations	MTGT-505
6	Site Investigations	MTGT-506

List of Laboratory/Practical work

S. No.	Subject	Subject Code
1	Laboratory-1	MTGT-507
2	Laboratory-2	MTGT-508
3	Pre-thesis seminar	MTGT-509
4	Pre-thesis project	MTGT-510
5	Thesis	MTGT-511

List of Program Electives

S. No.	Subjects	Subject Code
1	Soil-Structure Interaction	MTGT-601
2	Rock Mechanics	MTGT-602
3	Geosynthetic Engineering	MTGT-603
4	Structural Design of Foundations	MTGT-604
5	Clay Mineralogy	MTGT-605
6	Retaining Structures	MTGT-606
7	Slope Stability Analysis	MTGT-607
8	Case Histories in Geotechnical Engineering	MTGT-608
9	Earth Anchors	MTGT-609
10	Design of Highway and Airport Pavements	MTGT-610
11	Strength of Materials	MTGT-611
12	Buried Structures	MTGT-612
13	Environmental Impact assessment & Management	MTGT-613
14	Advanced Soil Mechanics	MTGT-614
15	Disaster Reduction and management	MTGT-615
16	Environmental Geotechnology	MTGT-616
17	Ground Improvement	MTGT-617
18	Earthen Embankment	MTGT-618
19	Geomechanics	MTGT-619
20	Highway Materials & Construction	MTGT-620

List of subjects to be offered as 'Open Electives'

1	Experimental Methods in Engineering	MTCE-621
2	Numerical Methods in Engineering	MTCE-622
3	Instrumentation and model simulation	MTCE-623
4	Advanced Engineering Mathematics	MTCE-624
5	Probabilistic Methods in Engineering	MTCE-625
6	Limit Analysis	MTCE-626