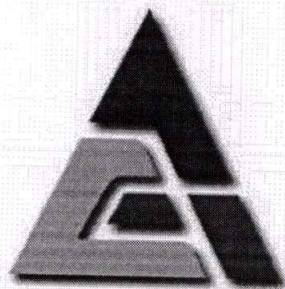


AMRITSAR GROUP OF COLLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,
(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

16th Meeting of Board of Studies

(15-05-2026)



**Department of Civil Engineering
Amritsar Group of Colleges, Amritsar**



Upain Kumar Bhatia <hod.ce@acetedu.in>

16th Board of Studies meeting

6 messages

Upain Kumar Bhatia <hod.ce@acetedu.in>

Tue, May 12, 2026 at 1:27 PM

To: sandeep.singla@chitkara.edu.in, Dr M P Singh Dhulka <mpsdhulka@gmail.com>, "Dr. Bharat Bhushan Jindal" <bharat.jindal@smvdu.ac.in>, nmpte@gmail.com, vikas.malhotra@jkcement.com

Dear Sir,

The 16th meeting of the Board of Studies is scheduled to be held on 15/05/2026 in the Department of Civil Engineering at 11:00 am. You are requested to make it convenient to attend the above meeting in the HOD(CE) office to discuss the enclosed agenda. Honorarium and TADA will be paid as per institute rules.

You are further requested to confirm your participation in the said meeting.

Yours faithfully

--

Regards

Dr. Upain Kumar Bhatia

PhD (Civil Engineering), M.Tech (WRE), MIE(I), MISH, MIWRS, MISTE

Professor and Head

Department of Civil Engineering


Amritsar Group of Colleges

Amritsar, Punjab (India)

M: 9416169949

email: upain.ce@acetedu.in, bhatia_u@rediffmail.com

website: www.agcamritsar.in

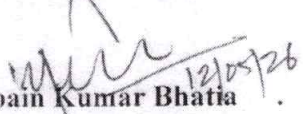
 **Agenda BOS 16 Meeting.pdf**

815K

 <p>AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle Autonomous College <small>Under Autonomous Category (Since 2014) Conferred by UGC</small></p>	Agenda BoS 16th Meeting	Department of Civil Engineering
	Date: 12-05-26	

Agenda for the 16th B.O.S (Board of Studies) Meeting Scheduled on 15/05/2026 at 11:00 AM.

1. To approve the minutes of 15th meeting of BoS held on 15.12.2025.
2. To discuss the proposed revised study scheme for 3rd to 8th semester of B. Tech. Civil Engineering and to finalize the study scheme for 3rd and 4th Semester of B. Tech Civil Engineering to be applicable for 2025 admitted batch and onwards.
3. To discuss and finalize the detailed syllabi and Course Outcomes for 3rd and 4th semester of B. Tech. Civil Engineering to be applicable for 2025 admitted batch and onwards.
4. To approve the courses to be offered in online mode through SWAYAM platform for 3rd semester students of B. Tech. Civil Engineering (2025 admitted batch).
5. To approve the courses to be offered in online mode through SWAYAM platform for 5th semester students of B. Tech. Civil Engineering (2024 admitted batch).
6. To approve the courses to be offered in online mode through SWAYAM platform for 7th semester students of B. Tech. Civil Engineering (2023 admitted batch).
7. To discuss the inclusion of the Entrepreneurship Mindset Curriculum courses in the 3rd and 4th semesters of B. Tech. Civil Engineering, applicable for 2025 admitted batch and onwards, as per the guidelines of IK Gujral Punjab Technical University and the Government of Punjab.
8. To discuss the inclusion of a non-credit mandatory course on Disaster Management and Preparedness, as prescribed by All India Council for Technical Education, in the curriculum of B. Tech. Civil Engineering (2025 admitted batch and onwards), subject to the availability of guidelines and syllabus from AICTE/IKGPTU.
9. To approve the change of dissertation topic and supervisors for the M.tech (Civil Engineering) for the candidate namely Khushboo (2000903).
10. To approve the Supervisor of Batch 2024 admitted M.Tech Civil Engineering Students.
11. To apprise the BoS regarding synopsis presentation for M. Tech. (Civil Engineering) candidates, namely Mr. Faisal Bhat (2459395), Harmanpreet Singh (2412608), Joshanjit Singh (2412610), Raghia Sharma (2132441) and Khusboo (2000903).
12. To apprise the BoS of the Internal presentation's submission for M. Tech. (Civil Engineering) candidates, namely Mehbooba Mohamad (2234160) and Iqra Hameed (2234159).
13. To apprise the BoS of the successful External viva-voce examination submission for M. Tech. (Civil Engineering) candidates, namely Mehbooba Mohammad (2234160), Iqra Hameed (2234159), Anjali (2132439) and Tahir Yasin (2234162).
14. To apprise the BoS of the results of Nov 2025 examinations.
15. To apprise the BoS of the new academic initiatives taken during Jan-June 2026.
 - a) List of top performers in Nov-2025 examinations.
 - b) Major activities/events organized by the department.
16. Any other agenda with the permission of the chair.


Dr. Upain Kumar Bhatia
 Chairman, Board of Studies
 Civil Engineering, AGC Amritsar

Internal Members of Board of Studies

Amritsar Group of Colleges
Amritsar.

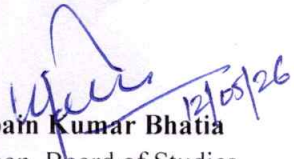
Subject: 16th meeting of Board of Studies in Civil Engineering, AGC Amritsar.

Dear Sir

The 16th meeting of **Board of Studies** is scheduled to be held on **15/05/2026** in the Department of Civil Engineering at 11:00 am. You are requested to make it convenient to attend the above meeting in HOD(CE) office to discuss the enclosed agenda.

You are further requested to confirm your participation in the said meeting.

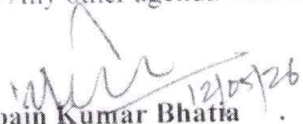
Yours Faithfully


Dr. Upam Kumar Bhatia
Chairman, Board of Studies
Civil Engineering, AGC Amritsar

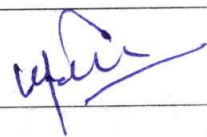

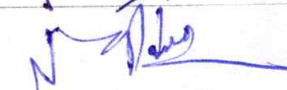

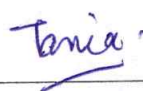


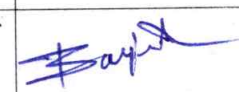
 <p>AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle Autonomous College Under Punjab University (since 2016) Certified by UGC</p>	<p align="center">Agenda BoS 16th Meeting</p>	<p align="center">Department of Civil Engineering</p>
	<p align="center">Date: 12-05-26</p>	


Agenda for the 16th B.O.S (Board of Studies) Meeting Scheduled on 15/05/2026 at 11:00 AM.

1. To approve the minutes of 15th meeting of BoS held on 15.12.2025.
2. To discuss the proposed revised study scheme for 3rd to 8th semester of B. Tech. Civil Engineering and to finalize the study scheme for 3rd and 4th Semester of B. Tech Civil Engineering to be applicable for 2025 admitted batch and onwards.
3. To discuss and finalize the detailed syllabi and Course Outcomes for 3rd and 4th semester of B. Tech. Civil Engineering to be applicable for 2025 admitted batch and onwards.
4. To approve the courses to be offered in online mode through SWAYAM platform for 3rd semester students of B. Tech. Civil Engineering (2025 admitted batch).
5. To approve the courses to be offered in online mode through SWAYAM platform for 5th semester students of B. Tech. Civil Engineering (2024 admitted batch).
6. To approve the courses to be offered in online mode through SWAYAM platform for 7th semester students of B. Tech. Civil Engineering (2023 admitted batch).
7. To discuss the inclusion of the Entrepreneurship Mindset Curriculum courses in the 3rd and 4th semesters of B. Tech. Civil Engineering, applicable for 2025 admitted batch and onwards, as per the guidelines of IK Gujral Punjab Technical University and the Government of Punjab.
8. To discuss the inclusion of a non-credit mandatory course on Disaster Management and Preparedness, as prescribed by All India Council for Technical Education, in the curriculum of B. Tech. Civil Engineering (2025 admitted batch and onwards), subject to the availability of guidelines and syllabus from AICTE/IKGPTU.
9. To approve the change of dissertation topic and supervisors for the M.tech (Civil Engineering) for the candidate namely Khushboo (2000903).
10. To approve the Supervisor of Batch 2024 admitted M.Tech Civil Engineering Students.
11. To apprise the BoS regarding synopsis presentation for M. Tech. (Civil Engineering) candidates, namely Mr. Faisal Bhat (2459395), Harmanpreet Singh (2412608), Joshanjit Singh (2412610), Raghia Sharma (2132441) and Khusboo (2000903).
12. To apprise the BoS of the Internal presentation's submission for M. Tech. (Civil Engineering) candidates, namely Mehbooba Mohamad (2234160) and Iqra Hameed (2234159).
13. To apprise the BoS of the successful External viva-voce examination submission for M. Tech. (Civil Engineering) candidates, namely Mehbooba Mohammad (2234160), Iqra Hameed (2234159), Anjali (2132439) and Tahir Yasin (2234162).
14. To apprise the BoS of the results of Nov 2025 examinations.
15. To apprise the BoS of the new academic initiatives taken during Jan-June 2026.
 - a) List of top performers in Nov-2025 examinations.
 - b) Major activities/events organized by the department.
16. Any other agenda with the permission of the chair.


Dr. Upain Kumar Bhatia
 Chairman, Board of Studies
 Civil Engineering, AGC Amritsar

Attendance Sheet

Sr. No.	Name	Signature
1.	Dr. Upain Kumar Bhatia	
2.	Dr. Bharat Bhushan Jindal (External Expert)	—
3.	Dr. Sandeep Singla (External Expert)	
4.	Dr. Maninder Pal Singh (External Expert)	
5.	Er. Vikas Malhotra (External Expert)	—
6.	Er. Nipun Madan (Alumnus)	—
7.	Er. Sandeep Sharma	—
8.	Er. Vijay Kumar	—
9.	Er. Rohit Thakur	
10.	Er. Tania Dadwal	
11.	Er. Kaiser Saleem	
12.	Ms. Kulbir Kaur	
13.	Ms. Baljeet Kaur	



Dr. Upain Kumar Bhatia 15/05/2026
Chairman, Board of Studies
Civil Engineering, AGC Amritsar

AMRITSAR GROUP OF COLLEGES

**Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,
(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)**

Proceedings of 16th Meeting of Board of Studies

**Department of Civil Engineering
Amritsar Group of Colleges,
Amritsar**

 <p>AMRITSAR GROUP OF COLLEGES</p> <p>NAAC Grade "A" 3rd Cycle under Autonomous Category</p> <p>Autonomous College (Since 2014) Conferred by UGC</p>	<p>Proceedings 16thBoS Meeting</p>	<p>Department of Civil Engineering</p>
	<p>Date: 15.05.2026</p>	

**MINUTES OF THE 16th MEETING OF BOARD OF STUDIES
(15-05-2026)**

16th Meeting of Board of Studies in Civil Engineering, Amritsar Group of Colleges was held on 15.05.2026(Friday) at 11:00 am. The following attended the meeting:

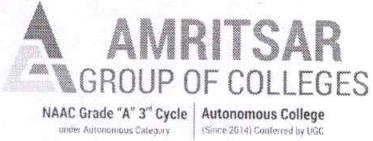
1. Dr. Upain Kumar Bhatia, HoD, DCE, AGC Amritsar - in Chair
2. Dr. Sandeep Singla, Asst Director Academics, Chitkara University - External Member
3. Dr. Maninder Pal Singh, Assistant Professor GNDU Amritsar - External Member
4. Er. Rohit Thakur, Assistant Professor, AGC Amritsar
5. Er. Tania Dadwal, Assistant Professor, AGC Amritsar
6. Er. Kaiser Wani, Assistant Professor, AGC Amritsar
7. Ms. Baljeet Kaur, Assistant Professor, AGC Amritsar
8. Ms. Kulbir Kaur, Assistant Professor, AGC Amritsar

The following members could not attend the meeting:

1. Dr. Bharat Bhushan Jindal, Assoc. Prof, SMVDU, J&K - External Member
2. Er. Vikas Malhotra, Zonal Head GM, JK Cement Ltd. - External Member
3. Er. Nipun Madan, Alumnus (2014-18), CE, AGC Amritsar - Alumnus AGC
4. Er. Sandeep Sharma, Associate Professor, CE, AGC Amritsar
5. Er. Vijay Kumar, Assistant Professor, CE, AGC Amritsar

Minutes of the meeting are as follows:

1. The minutes of 15th meeting of BoS held on 15.12.2025 were approved as no further comments were received for the same.
2. The scheme for 3rd to 8th semester of B. Tech Civil Engineering was discussed and finalized the scheme for 3rd and 4th semester of B. Tech Civil Engineering, applicable to 2025 admitted batch and onwards. **(Annexure – I)**
3. The detailed syllabi and course outcomes for 3rd and 4th semester of B. Tech Civil Engineering were discussed and finalized for recommendation and will be applicable to 2025 admitted batch and onwards. **(Annexure – II)**
4. The members of the Board of Studies authorized the Chairman, BoS, to approve up to 40% of the total courses in the 3rd semester of B.Tech. Civil Engineering for the 2025 admitted batch through the SWAYAM platform in online mode, as and when the list of courses for the July–December 2026 session is notified by SWAYAM.
5. The members of the Board of Studies authorized the Chairman, BoS, to approve up to 40% of the total courses in the 5th semester of B.Tech. Civil Engineering for the

 <p>AMRITSAR GROUP OF COLLEGES</p> <p>NAAC Grade "A" 3rd Cycle Autonomous College (Since 2014) Conferred by UGC</p>	<p>Proceedings 16th BoS Meeting</p>	<p>Department of Civil Engineering</p>
	<p>Date: 15.05.2026</p>	

- 2024 admitted batch through the SWAYAM platform in online mode, as and when the list of courses for the July–December 2026 session is notified by SWAYAM.
6. The members of the Board of Studies authorized the Chairman, BoS, to approve up to 40% of the total courses in the 7th semester of B.Tech. Civil Engineering for the 2023 admitted batch through the SWAYAM platform in online mode, as and when the list of courses for the July–December 2026 session is notified by SWAYAM.
 7. The members of the Board of Studies authorized the Chairman, BoS, to approve the subjects under the **Entrepreneurship Mindset Curriculum** to be offered in the 3rd and 4th semesters of B.Tech. Civil Engineering for the students admitted from the 2025 batch onwards, as and when the same are notified by the Government of Punjab through I.K. Gujral Punjab Technical University.
 8. Members were apprised of the communication from AICTE through email dated 24.11.2025 regarding inclusion of a non-credit mandatory course on **Disaster Management and Preparedness** in the curriculum of all AICTE approved UG Programmes w.e.f. January 2026. Since the detailed syllabus is not yet available on AICTE website, the Board resolved to include this course in 5th semester (or later) of B.Tech. Civil Engineering, subject to the availability and notification of the prescribed curriculum.
 9. The change of the thesis topic and Supervisors of MTech (Civil Engineering) for candidate namely **Khushboo (2000903)** was approved. (**Annexure-III**)
 10. The Supervisors for MTech (Civil Engineering) for candidates admitted in 2024-25 were discussed and finalized. (**Annexure – IV**)
 11. The members of BoS were apprised of the synopsis Presentation of M. Tech (Civil Engineering) for the candidates namely **Faisal Bhat (2459395), Harmanpreet Singh (2412608), Joshanjit Singh (2412610), Raghia Sharma (2132441)** and **Khusboo (2000903)**. (**Annexure – V**)
 12. The members of BoS were apprised of the Internal Presentation of M. Tech (Civil Engineering) for the candidate namely **Mehbooba Mohamad (2234160)** and **Iqra Hameed (2234159)**. (**Annexure – VI**)
 13. The members of BoS were apprised of the successful external viva-voce examination of M. Tech (Civil Engineering) for the candidates namely **Mehbooba Mohammad (2234160), Iqra Hameed (2234159), Anjali (2132439)** and **Tahir Yasin (2234162)**. (**Annexure-VII**)
 14. The members of BoS were apprised of the results of the Nov-2025 examinations. (**Annexure – VIII**)

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15/05/26

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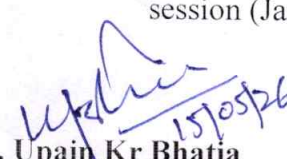
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15. The members of BoS were apprised of the following academic initiatives taken during Jan-May 2026.

- a. **Top performers of Nov-2025 Examinations:** The members of BoS were apprised of the following students who secured top positions in November-2025 examinations.

Semester	Name of Student	Roll No.	Position
3 rd	Gurpreet Kaur Bath	2411552	1 st
5 th	Dharohar Acharya	2342010	1 st
7 th	Siddhi Vinayak Chaudhary	2233546	1 st

- b. **Major activities/events:** The members of BoS were apprised of various activities/events organized by the department during the current semester session (Jan-Jun 2026). (**Annexure – IX**)

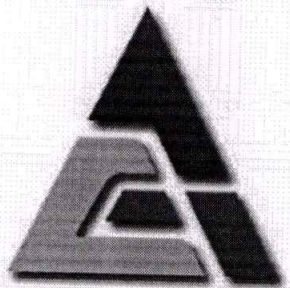

Dr. Upain Kr Bhatia
 Chairman, Board of Studies
 Civil Engineering, AGC Amritsar





Scheme and Syllabus

**3rd and 4th Semester
B.TECH (CIVIL ENGINEERING)
for Batch 2025-26 and onwards**



**Department of Civil Engineering
Amritsar Group of Colleges, Amritsar**

B.Tech Civil Engineering | 2025

SCHEME OF B. TECH CIVIL ENGINEERING									
3 rd	B.Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
	AGCE - 25301	Strength of Materials	3	1	-	40	60	100	4
	AGCE - 25302	Concrete Technology	3	-	-	40	60	100	3
	AGCE - 25303	Environment Engineering - I	3	1	-	40	60	100	4
	AGCE - 25304	Fluid Mechanics	3	1	-	40	60	100	4
	AGCE - 25305	Building Materials & Construction	3	-	-	40	60	100	3
	AGCE - 25306	Strength of Materials - Lab	-	-	2	50	-	50	1
	AGCE - 25307	Concrete Technology - Lab	-	-	2	50	-	50	1
	AGCE - 25308	Fluid Mechanics - Lab	-	-	2	50	-	50	1
	AGCE-25309	Applied AI Tools - Lab	-	-	2	50	-	50	1
	***	(Entrepreneurship Mindset Curriculum)#	-	-	4	60	40	100	2
	AGMC-25001	Indian Constitution (Mandatory Course)	1	-	-	-	-	-	-
			16	3	12				
		Contact Hours =	31			460	340	800	24

to be included as and when released by Government of Punjab through IKG PTU.

4 th	B.Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
			L	T	P	Internal	External		
	AGCE - 25401	Structural Analysis	3	1	-	40	60	100	4
	AGCE - 25402	Survey	3	1	-	40	60	100	4
	AGCE - 25403	Environment Engineering - II	3	-	-	40	60	100	3
	AGCE - 25404	Mathematics for Civil Engineering	3	-	-	40	60	100	3
	AGCE - 25405	Design of Concrete Structures	3	1	-	40	60	100	4
	AGCE - 25406	Survey - Lab	-	-	2	50	-	50	1
	AGCE - 25407	Environment Engineering - Lab	-	-	2	50	-	50	1
	AGCE - 25408	Building Construction Drawing	-	-	2	50	-	50	1
	***	(Entrepreneurship Mindset Curriculum)#	-	-	4	60	40	100	2
	AGMC-25002	Essence of Indian Knowledge Tradition (Mandatory Course)	1	-	-	-	-	-	-
			16	3	10				
		Contact Hours =	29			410	340	750	23

to be included as and when released by Government of Punjab through IKG PTU.

Handwritten signature and date:
15/05/26

SCHEME OF B.TECH CIVIL ENGINEERING									
5 th	B.Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
			L	T	P	Internal	External		
	AGCE - 25501	Geotechnical Engineering	3	1	-	40	60	100	4
	AGCE - 25502	Irrigation Engineering - I	3	-	-	40	60	100	3
	AGCE - 25503	Transportation Engineering - I	3	-	-	40	60	100	3
	AGCE - 25504	Advance Structural Analysis	3	1	-	40	60	100	4
	AGCE - 25505	Design of Advanced Concrete Structures (Skill Course-I)	1	-	4	50	-	50	3
	AGCE - 25506	Structural Analysis Lab	-	-	2	50	-	50	1
	AGCE - 25507	Concrete Structures Drawing	-	-	2	50	-	50	1
	AGCE - 25508	Geotechnical Engineering Lab	-	-	2	50	-	50	1
	***	Entrepreneurship Mindset Curriculum	-	-	4	60	40	100	2
	AGCE - 25509	Survey Camp (On-site Training)	-	-	-	100	-	100	1
			13	2	14	520	280	800	23
		Contact Hours =	29						

6 th	B.Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
			L	T	P	Internal	External		
	AGCE - 25601	Design of Steel Structures - I	3	1	-	40	60	100	4
	AGCE - 25602	Hydrology	3	1	-	40	60	100	4
	AGCE - 25603	Transportation Engineering - II	3	-	-	40	60	100	3
	AGCE - 25604x	Professional Elective Course - I	3	-	-	40	60	100	3
	AGCE - 25605	Professional Practices (Skill Course-II)	1	-	4	50	-	50	3
	AGCE - 25606	Transportation Engineering - Lab	-	-	2	50	-	50	1
	AGCE - 25607	Additional Experiments in Civil Engineering Lab	-	-	2	50	-	50	1
	AGCE - 25608	MS Office - Lab	-	-	2	50	-	50	1
	***	Entrepreneurship Mindset Curriculum	-	-	4	60	40	100	2
	AGMC- 25003	Disaster Reduction and Preparedness	2	-					-
			16	3	10	410	240	650	22
		Contact Hours =	29						

Handwritten signature and date:
15/05/26

B.Tech Civil Engineering | 2025

SCHEME OF B. TECH CIVIL ENGINEERING									
7 th	B. Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
			L	T	P	Internal	External		
	AGCE25701	Design of Steel Structures-II	3	1	-	40	60	100	4
	AGCE25702	Irrigation Engineering – II	3	1	-	40	60	100	4
	AGCE 25703x	Professional Elective Course-II [#]	3	-	-	40	60	100	3
	AGCE 25704x	Professional Elective Course-III [#]	3	-	-	40	60	100	3
	AGOE 257yy	Open Elective Course	3	-	-	40	60	100	3
	AGCE 25704	Project	-	-	4	100	-	100	2
	AGCE 25705	Irrigation Engineering Drawing	-	-	2	50	-	50	1
	AGCE 25706	Steel Structures Drawing	-	-	2	50	-	50	1
			15	2	8				
		Contact Hours =	25			400	300	700	21
<p>#AGCE 25703x and AGCE 25704x shall be offered in online mode through SWAYAM platform. The student shall opt any one subjects from each of the <i>list of Professional Elective Courses II</i> and <i>list of Professional Elective Courses III</i> as per availability on SWAYAM platform. Student shall produce the course completion certificate at the end of the semester or appear in End-Semester-Examination for this course for transfer of credits as per the policy of AGC Amritsar.</p>									

8 th	B. Tech (Civil Engineering)								
Semester	Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
			L	T	P	Internal	External		
	AGCE-25801	Semester Training	-	-	-	300	200	500	12
			0	0	0	300	200	500	12
		Contact Hours =	0						

W. P. S.
15/05/2026

3rd Semester

Wfer
15/05/26

Annexure-II
B.Tech Civil Engineering | 2025

3 rd Semester		AGCE-25301: Strength of Materials			
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Deconstruct complex loading systems to analyze internal stresses, strains, and thermal deformations in structural.
CO-2	Construct Mohr's circle transformations and execute computational verifications of principal stresses using Excel spreadsheets.
CO-3	Analyze shear-force and bending-moment distributions using both traditional equilibrium equations and algorithmic plotting tools.
CO-4	Compare flexural and transverse shear stress distributions across simple, built-up, and composite flitched sections.
CO-5	Investigate structural stability variations in buckled columns and the torsional behavior of circular shafts and springs.
CO-6	Evaluate structural component safety limits under combined loading by applying classical engineering failure theories.

Content	CO
Simple Stress and Strains: Introduction; Concept of stress and strain; Stress-strain curves for ductile, brittle materials; Generalized Hooke's law, Stress-strain diagram of ductile and brittle material, compound and composite bars, thermal stresses. Elastic constants, relations between various elastic constants and its use; Lateral strain, volumetric strain, Poisson's ratio	CO-1
Complex stress and strains: Introduction; Normal stress, tangential stress; Rectangular block subjected to normal stress along and across two planes, combination of normal and tangential stress; Concept of principal stress and its computation; Mohr circle; Principal strains, computation of principal stresses from the principal strains. Computational verification of Principal Stresses and Mohr's Circle using Excel	CO-2
Shear force and Bending moment diagrams: General equilibrium equations, Introduction to the concept of reaction diagrams—shear force and bending moment; Role of sign conventions; Relationship between load, shear force and bending moment. Types of loads, beams, supports; Shear force and bending moment diagrams: simply supported, overhang and cantilever beams subjected to any combination of point loads, uniformly distributed and varying load, and moment. Algorithm-based plotting of SFD and BMD for multi-load beams using Excel solvers or basic programming.	CO-3
Bending and Shear Stresses: Introduction; Assumptions and derivation of flexural formula for straight beams; Centroid of simple and built-up section, second moment of area; Bending stress calculation for beams of simple and built-up section, composite sections (flitched sections); Shear stress; Variation of bending and shear stress along the depth of section.	CO-4
Columns and Struts: Stability of Columns; Buckling load of an axially loaded columns with various end conditions; Euler's and Rankine's formula; Columns under eccentric load, lateral load.	CO-5
Torsion of Circular shafts: Torsion, basic assumptions, derivation of torsion equation; Sections under combined bending and torsion, equivalent bending and torsion.	
Springs: Introduction; Classification; Applications Failure theories: Maximum principal stress theory, Maximum shear stress theory, Distortion, Energy theory, Strain Energy theory.	CO-6

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References:

- Strength of Material by S. Ramamrutham
- Mechanics of Materials: E. Popov
- Strength of Materials: Rajput
- Strength of Materials: Sadhu Singh
- Strength of Materials by Gere, Cengage Learning.

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3 rd Semester		AGCE-25302: Concrete Technology			
Internal Marks:	40		L	T	P
External Marks:	60		3	0	0
Total Marks:	100		Credits		3

Course Outcomes: After studying the course, students will be able to:

CO-1	Analyze the engineering performance and selection criteria of various concrete types and structural grades for specialized industrial applications.
CO-2	Evaluate the chemical kinetics, hydration properties, and structural impacts of standard cements, admixtures, and supplementary cementitious materials (SCMs).
CO-3	Classify and optimize aggregate grading configurations by evaluating their mechanical properties, moisture parameters, and fineness modulus.
CO-4	Correlate water-cement ratios with microstructural properties to analyze the behavior of self-compacting, fiber-reinforced, and high-performance concretes.
CO-5	Implement regulatory standard techniques for the batching, mixing, transportation, specialized placement, and consolidation of fresh concrete.
CO-6	low-carbon concrete mix proportions using standard IS codes integrated with artificial intelligence-based optimization models.

Content

Content	CO
Introduction: Concrete as a structural material, Constituent materials of concrete. Types of concretes, grades of concrete, advantages and disadvantages of concrete. Applications of concrete.	CO-1
Cement: Types, basic chemistry, heat of hydration, testing of cement (Fineness, Consistency, Setting times, soundness, strength), Types of Portland cements, expansive cements, pozzolanas. Admixtures, types of admixtures. Supplementary Cementitious Materials (SCMs) like Ground Granulated Blast-furnace Slag (GGBS), Rice Husk Ash, and Silica Fume.	CO-2
Aggregates: Classification of Aggregates, Mechanical properties (Bond, strength, toughness, hardness, specific gravity, bulk density, porosity and absorption, moisture content, bulking of sand, sieve analysis, fineness modulus, grading of aggregates, maximum aggregate size.	CO-3
Properties of Fresh and Hardened Concrete: Water-Cement Ratio, Workability, factors affecting workability, methods of determination of workability, density of fresh concrete, Compressive strength, flexural strength, split tensile strength, effect of water-cement ratio on strength of concrete. Self-Compacting Concrete (SCC). Fiber Reinforced Concrete (FRC), High-Performance Concrete (HPC).	CO-4
Handling of Concrete: Batching and mixing, mixing time, concrete mixers, transportation of concrete, Ready Mix concrete, pumped concrete, vibration of concrete, internal and external vibrators, reverberation, shotcrete, curing of concrete.	CO-5
Mix-Design: Factors to be considered, water cement ratio, durability, workability, cement and aggregate content, design of concrete mix by IS-Code method (IS 10262: 2009). Artificial Intelligence-Based Optimization of Sustainable Low-Carbon Concrete Mix Design.	CO-6

References:

- Concrete Technology by M.L. Gambhir, Tata Mc Graw Hills, New Delhi.
- Concrete Technology by M.S. Shetty, S. Chand and Co. New Delhi.
- Concrete Technology by A.M. Neville and J.J. Brooks, Pearson publishers, New Delhi.
- Properties of Concrete by A.M. Neville, Pearson publishers, New Delhi.

3 rd Semester	AGCE-25303: Environmental Engineering – I				
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Apply population forecasting models to estimate future water demands for community water supply schemes.
CO-2	Analyze surface and groundwater source potentials, selection criteria, and hydraulic intake transmission configurations.
CO-3	Evaluate pump operating curves and mechanical efficiencies to optimize pump selection for distribution stations.
CO-4	Examine physical, chemical, and bacteriological water parameters against standard statutory drinking water criteria
CO-5	Design standard water treatment units integrated with AI-driven predictive systems for smart water quality monitoring.
CO-6	Deconstruct complex urban water distribution networks, balancing reservoirs, and rural rainwater harvesting setups to optimize transmission.

Content	CO
Introduction: Beneficial uses of water, water demand, per capita demand, variations in demand, water demand for fire-fighting, population forecasting and water demand estimation.	CO-1
Water sources and development: Surface and ground water sources; Selection and development of sources; Assessment of potential; Flow measurement in closed pipes, intakes and transmission systems.	CO-2
Pumps and pumping stations: Types of pumps and their characteristics and efficiencies; Pump operating curves and selection of pumps; pumping stations.	CO-3
Quality and Examination of Water: Impurities in water, sampling of water, physical, chemical and bacteriological water quality parameters, drinking water quality standards and criteria.	CO-4
Water treatment: Water treatment schemes; Basic principles of water treatment; Design of plain sedimentation, coagulation and flocculation, filtration – slow, rapid and pressure; Disinfection units; Fundamentals of water softening, fluoridation and defluorination, and water desalination and demineralization, taste and odour removal. AI-Driven Predictive System for Smart Wastewater Treatment and Water Quality Monitoring.	CO-5
Transportation of Water: Pipes for transporting water and their design, water distribution systems and appurtenances; Water supply network design and design of balancing and service reservoirs; operation and maintenance of water supply systems. Rural water supply: Principles, selection of source, rain water harvesting, quantitative requirements, low-cost treatment techniques.	CO-6

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References:

- Water Supply Engineering- Environmental Engg. (Vol. – I) by B.C. Punmia, Ashok Jain, Arun Jain, Laxmi Publications, New Delhi.
- Environmental Engg. - A design Approach by Arcadio P. Sincero and Gregoria P. Sincero, Prentice Hall of India, New Delhi.
- “Environmental Engg.” By Howard S. Peavy, Donald R. Rowe & George Tchobanoglous, McGraw Hill, International Edition
- Water Supply Engineering- Environmental Engg. (Vol. – I) by S.K. Garg, Khanna Publishers, Delhi.
- Water Supply and Sewerage by Steel EW and McGhee, Terence J.; McGraw Hill.

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3rd Semester	AGCE-25304: Fluid Mechanics			
Internal Marks:	40			
External Marks:	60		L	T
Total Marks:	100		3	1
			Credits	
				4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Analyze fundamental fluid properties, surface tension behaviors, and rheological variations between Newtonian and non-Newtonian regimes.
CO-2	Determine hydrostatic forces on submerged geometries and assess stability parameters for floating structures using meta-centric principles.
CO-3	Apply standard flow measurement devices, including manometers, meters, and notches, to calculate pipeline and open-channel discharges.
CO-4	Analyze fluid motion using continuity, Euler, and Bernoulli formulations to solve complex kinematic and dynamic flow profiles.
CO-5	Evaluate laminar-to-turbulent transitions using critical Reynolds criteria integrated with machine learning-assisted CFD simulation models.
CO-6	Investigate boundary layer developments, thickness parameters, and shear characteristics across smooth or rough flow boundaries.

Content	CO
Fluid and their properties: Concept of fluid, difference between solids, liquids and gases; ideal and real fluids, density, specific weight and relative density, viscosity and its dependence on temperature; surface tension and capillarity, vapour pressure and cavitation, Newtonian and non-Newtonian fluids, laminar and turbulent flow.	CO-1
Fluid Statics: Concept of pressure, Pascal's law and its engineering hydrostatic paradox. Action of fluid pressure on plane (horizontal, vertical) submerged surface, resultant force and centre of pressure, force on a curved surface due to hydrostatic pressure. Buoyancy and floatation, stability of floating and submerged bodies, Meta centric height and its determination.	CO-2
Flow Measurement: Manometers, Pitot tubes, venturi meter and orifice meters, orifices, mouth pieces, notches (Rectangular and V-notches) and weirs (Sharp crested Weirs).	CO-3
Fluid Kinematics: Classification of fluid flows, velocity and acceleration of fluid particle, local and convective acceleration, normal & tangential acceleration streamline, path line and streak line, flow rate and discharge mean velocity continuity equation in Cartesian co-ordinates. Rotational flows- Rotational velocity and circulation, stream & velocity potential functions.	CO-4
Fluid Dynamics: Euler's equation, Bernoulli's equation and steady flow energy equation; representation of energy changes in fluid system, impulse momentum equation.	
Laminar: meaning of terms, Flow through circular section pipe, flow between parallel plates, stokes law. Transition from laminar to turbulent, Critical velocity and critical Reynolds Number,	
Turbulent: - Turbulent flows, Equation for velocity distribution in smooth and rough pipes (no derivation).	CO-5
Machine Learning Assisted CFD Model for Turbulent Flow Prediction and Analysis	
Boundary Layer Analysis: Assumption and concept of boundary layer theory. Boundary-layer thickness, displacement, momentum & energy thickness, Laminar sub-layer, smooth and rough boundaries.	CO-6

References:

- Fluid Mechanics & Hydraulic Machines : Dr. R.K. Bansal
- Hydraulic and Fluid Mechanic by P.N.Modi & S.M.Seth
- Engineering Fluid Mechanics by R.J.Garde & A.G.Mirajgaoker
- Fluid Mechanics by Douglas JF, Gasiorek JM, Swaffield JP; Pitman
- Fluid Mechanics : Streetes VL & Wylie EB; McGraw Hill book company.
- Introduction to Fluid Mechanics by Robert W.Fox& Alan T.McDonald

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Annexure-II
B.Tech Civil Engineering | 2025

3 rd Semester		AGCE-25305: Building Materials and Construction				
Internal Marks:	40			L	T	P
External Marks:	60			3	0	0
Total Marks:	100			Credits		3

Course Outcomes: After studying the course, students will be able to:	
CO-1	Analyze the engineering properties, characteristics, and quality-control test metrics of building stones, aggregates, and bricks.
CO-2	Evaluate concrete and cement performance data to select optimal sustainable materials for 3D-printed and automated low-carbon construction applications.
CO-3	Compare the physical properties and structural applications of advanced composites, plastics, ferrous metals, and polymers.
CO-4	Implement engineering code requirements to supervise, inspect, and identify defects in stone, brick, and composite masonry works.
CO-5	Investigate the structural behavior, failure mechanisms, and design conditions of primary building elements from foundations to roofs.
CO-6	Apply regulatory building standards to integrate and coordinate plumbing, electrical, HVAC, acoustic, and fire-safety services.

Content	CO
Building Stones and Aggregates: General, Characteristics of a good building stone, Common building stone of India & their Uses-Artificial stones, Classification of aggregate, properties, sieve analysis, fineness modulus. Bricks: General, Qualities of good bricks, Classification of bricks, Tests on bricks.	CO-1
Cement: Composition of cement, Manufacturing process (brief), Varieties of cement, Hydration of cement, Properties, testing of cement. Selection of suitable type of cement. Plaster, Plastering and pointing. Concrete: Introduction, Constituents, batching of materials, Manufacturing process, transportation and placing of concrete, compaction of concrete, curing of concrete workability, Methods to determine workability, segregation and bleeding of concrete, Strength of concrete and factors affecting it. BIS method of mix design. Artificial Intelligence-Based Sustainable Building Material Selection for Low-Carbon Smart Construction. 3D Printed Concrete Structures Emerging technology in automated building construction.	CO-2
Miscellaneous materials: Plastic: Definition, classification, characteristics and uses, extruded profiles, pipes and their fittings. Steel: Commercial forms of iron & steel & their uses. Composite Materials: Ferro-cement, Wood-plastic composite (WPC), Fibre reinforced plastics, Fibre reinforced concrete, Fly ash concrete, Light-weight concrete and Polymer concrete.	CO-3
Masonry Construction: Introduction, terms used in brick & stone masonry, Dressing of stones, Classifications of stone masonry, bonds in brick work, reinforced brick work, Defects in brick masonry, composite stone & brick masonry, glass block masonry.	CO-4
Building Components: Walls: Load bearing and non-load bearing walls, Thickness considerations, partition and cavity walls. Foundation: functions and Types of foundations, causes of failures of foundation and remedial measures Arches and Lintels: Functions of arches and lintels, terms used in Arches; different types of arches.	CO-5

<p>Roofs and Floors: Terms used, Types of roof trusses and roof coverings, types of floors commonly used and their suitability for different buildings, Doors and Windows: terms used, location of doors and windows, types of doors and windows, ventilators. Stairs & Stair cases: Terms used, Suitability of location, stairs in multi-storeyed buildings, residential and public buildings, dimensions, classification, types of stairs,</p> <p>Damp Proofing: Causes and Sources of dampness in buildings, bad effects of dampness, methods of damp proofing, materials used for DPC.</p>	
<p>Building Services: Plumbing service, Electrical services, Air conditioning, Acoustics and sound insulation, Fire protection measures, Lift & escalators.</p>	CO-6

References:

- Building Construction by Sushil Kumar, Standard Publisher and Distributors.
- Building Construction by B. C. Punima, Laxmi Publisher House
- Building Material, Rangawala
- Concrete Technology, MS Shetty

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3rd Semester	AGCE-25306: Strength of Materials - Lab				
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:

CO-1	Analyze stress-strain data from tension testing to distinguish mechanical behavior in ductile and brittle materials.
CO-2	Compare compressive deformation properties and failure profiles between ductile and brittle specimens under axial loading.
CO-3	Execute Izod and Charpy impact tests to quantify and compute energy absorption and material toughness.
CO-4	Determine material indentation resistance using standard Rockwell and Brinell hardness testing configurations.
CO-5	Investigate shear stress-strain behaviours and torsional structural failures in circular specimens.
CO-6	Design and validate a structural mini-project that practically solves a mechanics-of-solids engineering challenge.

Experiment	CO
1. Draw Stress Strain curve for Ductile and Brittle material in tension.	CO-1
2. Draw Stress Strain curve for Ductile and Brittle material in compression.	CO-2
3. To determine the impact strength by Izod and Charpy test.	CO-3
4. To determine hardness of given material by Rockwell & Brinell hardness testing machine.	CO-4
5. Draw shear stress, shear strain curve for ductile / brittle material in torsion strength test.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25301 (Strength of Materials)	CO-6

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3 rd Semester		AGCE-25307: Concrete Technology - Lab			
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO-1	Execute standard laboratory testing to determine cement consistency and setting times.
CO-2	Analyze the compressive strength parameters and grade compliance of standard cement samples.
CO-3	Examine aggregate fineness modulus, particle distribution, and specific gravity metrics.
CO-4	Assess fresh concrete workability and rheological behavior using standard testing methodologies.
CO-5	Investigate compressive and split tensile strength development profiles in hardened concrete specimens.
CO-6	Design and validate an advanced mix or physical prototype for a concrete technology mini-project.

Experiment	CO
To determine the Standard Consistency of cement. To determine the IST and FST of cement.	CO-1
To determine the compressive strength of cement.	CO-2
To determine the Fineness Modulus of given aggregate sample by sieve analysis. To determine the Specific gravity of Fine and Coarse Aggregates.	CO-3
To determine the workability of fresh concrete by various methods.	CO-4
To determine the compressive strength and split tensile strength of concrete.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25302 (Concrete Technology)	CO-6

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3 rd Semester		AGCE-25308: Fluid Mechanics - Lab			
Internal Marks:	50	L	T	P	
External Marks:	-	0	0	2	
Total Marks:	50	Credits			1

Course Outcomes: After studying the course, students will be able to:

CO-1	Determine the meta-centric height and stability parameters of floating vessels under variable loading configurations.
CO-2	Analyze energy transformations and head interdependencies in variable area ducts to verify Bernoulli's theorem.
CO-3	Calibrate orifice-meter devices to evaluate discharge coefficients and fluid velocity through pressurized pipelines.
CO-4	Examine venturi-meter performance metrics and energy losses across varying pressure differentials.
CO-5	Compute open-channel volumetric flow rates using standard rectangular and V-notch hydraulic profiles.
CO-6	Design and validate an experimental fluid systems prototype for a mechanics mini-project challenge.

Experiment	CO
1. To determine meta-centric height of a floating vessel under loaded / unloaded conditions.	CO-1
2. To verify Bernoulli's energy equation by studying flow through variable area duct.	CO-2
3. To determine the coefficient of discharge for an orifice-meter.	CO-3
4. To determine the coefficient of discharge for a venture-meter.	CO-4
5. To determine the discharge coefficient for a Vee notch or rectangular notch.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25304 (Fluid Mechanics)	CO-6

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3 rd Semester		AGCE-25309: Applied AI Tools - Lab			
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO-1	Identify and explore different AI tools and their applications.
CO-2	Apply AI tools for summarization, communication, and basic data analysis tasks.
CO-3	Demonstrate prompt engineering techniques for generating effective AI-based content.
CO-4	Create AI-assisted presentations, images, and multimedia content using generative AI tools.
CO-5	Analyze speech, text, and video outputs generated through AI-powered multimedia tools
CO-6	Design and develop a professional resume and LinkedIn profile using AI-powered tools.

Experiment		CO
Machine Exercise 1: Exploring AI Tools in Daily Life and Professional Applications <ol style="list-style-type: none"> Access different AI tools and explore their interfaces. Use AI tools to perform the following activities: <ol style="list-style-type: none"> Generate study notes using NotebookLM Draft an email Create a short article Prepare a daily planner Use an AI tool to create a professional event plan for a seminar, workshop, cultural fest, startup event, or awareness campaign including objectives, schedule, and promotional ideas. Use AI tools to prepare awareness content such as posters, slogans, or short write-ups on cyber safety, environmental conservation, women empowerment, or digital literacy etc. <p>Suggested Tools: ChatGPT, Claude AI, Google Gemini and NotebookLM</p>		CO-1
Machine Exercise 2: AI Tools for Analysis and Communication <ol style="list-style-type: none"> Use AI tools to summarize lengthy articles, reports, research papers, or government schemes and compare the summarized output with the original content. Use AI tools to analyze simple datasets such as sales reports, survey data, sports statistics, weather data, class result analysis or healthcare records, and identify trends and observations from the data. <p>Suggested Tools: ChatGPT, Claude AI, Google Gemini, NotebookLM and Microsoft Copilot</p>		CO-2
Machine Exercise 3: Prompt Engineering for Smart Content Creation <ol style="list-style-type: none"> Study the structure of effective prompts and identify the key elements that improve AI-generated responses. Create prompts for applications such as resume summary, invitation letter, presentation outline, and generate outputs using AI tools. Perform Zero-shot and Few-shot prompting on the same topic and compare the quality and accuracy of the generated responses. Use role-based prompting techniques such as "Act as a career counsellor," "Act as a travel guide," and "Act as a teacher" to generate different styles of responses. 		CO-3

5. Refine prompts to improve output quality and generate responses in bullet, table, and paragraph formats while documenting prompt variations and outputs.	
Suggested Tools: ChatGPT, Claude AI, Google Gemini and Microsoft Copilot	
Machine Exercise 4: AI-Based Presentation and Image Generation <ol style="list-style-type: none"> 1. Create an AI-generated presentation on a social, educational, or environmental topic using Gamma AI or Canva AI. 2. Generate AI-based images from text prompts related to smart cities, healthcare, tourism, education, or sustainable development. 3. Modify and refine text prompts to improve the quality and creativity of generated images and presentation content. 4. Document prompts used and generated outputs 	CO-4
Suggested Tools: Canva AI and Gamma AI	
Machine Exercise 5: AI Tools for Speech and Video Content Creation <ol style="list-style-type: none"> 1. Convert written text into speech using AI voice-generation tools 2. Perform speech-to-text conversion using AI tools and compare the accuracy of generated transcripts. 3. Create a short educational, promotional, or awareness video using AI video-generation tools. 	CO-5
Suggested Tools: Wispr Flow, HeyGen, Elevenlabs and Speechify	
Machine Exercise 6: AI-Assisted Resume Building and LinkedIn Profile Optimization <ol style="list-style-type: none"> 1. Create and design a professional resume using AI-powered design tools such as Canva and refine the content using ChatGPT, Gemini, Claude, or Microsoft Copilot. 2. Develop or optimize a LinkedIn profile by generating AI-assisted profile headlines, summaries, skills, experience descriptions 	CO-6
Suggested Tools: ChatGPT, Claude AI, Google Gemini, Microsoft Copilot and LinkedIn	

Note: The AI tools mentioned in this syllabus are suggestive in nature. Equivalent or related AI tools/platforms may also be used for demonstrating and performing the prescribed activities and concepts. Open Source Platforms to be preferred.

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Annexure-II
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3 rd Semester		***: Entrepreneurship Mindset Curriculum			
Internal Marks:	-		L	T	P
External Marks:	-		0	0	4
Total Marks:	-		Credits		2

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Annexure-II
B.Tech Civil Engineering | 2025

3rd Semester	(Mandatory Course): AGMC-25001: Indian Constitution				
Internal Marks:	-		L	T	P
External Marks:	-		1	0	0
Total Marks:	-		Credits		0

Content	CO
Meaning of the constitution law and constitutionalism. Historical perspective of the Constitution of India. Salient features and characteristics of the Constitution of India. Scheme of the fundamental rights. The scheme of the Fundamental Duties and its legal status. The Directive Principles of State Policy – Its importance and implementation. Federal structure and distribution of legislative and financial powers between the Union and the States. Parliamentary Form of Government in India – The constitution powers and status of the President of India. Amendment of the Constitutional Powers and Procedure. The historical perspectives of the constitutional amendments in India. Emergency Provisions: National Emergency, President Rule, Financial Emergency. Local Self Government – Constitutional Scheme in India. Scheme of the Fundamental Right to Equality. Scheme of the Fundamental Right to certain Freedom under Article 19. Scope of the Right to Life and Personal Liberty under Article 21	-

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4th Semester


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4 th Semester	AGCE-25401: Structural Analysis				
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Analyze structural determinacy and apply geometric methods to compute slopes and deflections in beams.
CO-2	Evaluate deformations using energy formulations and critique AI-driven models for predictive structural damage detection.
CO-3	Deconstruct internal forces, radial shear, and normal thrust in three-hinged arches and stiffening girders.
CO-4	Construct shear-force and bending-moment envelopes for structural elements subjected to moving rolling loads.
CO-5	Apply the Muller-Breslau principle to draw influence line diagrams for displacements and truss bar forces.
CO-6	Analyze maximum tension, cable geometry, and tower pressures in cables and suspension bridge systems.

Content	CO
Determinate Structures: Concept of determinacy; Governing differential equation for slope and deflection of straight beams, determination of slope and deflection by Geometric methods (Double integration; Macaulay's method; Moment area method; Conjugate beam method).	CO-1
Analysis of plane trusses, compound trusses and complex trusses using method of joints, method of sections and tension coefficients. Determination of slope and deflection of beams, frames and trusses by Energy Methods (Strain energy, Betti's and Maxwell's laws of reciprocal deflections, virtual work and Castigliano's theorems) AI & Machine Learning in Structural Engineering: Predictive structural behaviour, Smart monitoring systems, AI-based damage detection	CO-2
Arches and Girders: Analysis of determinate arches, Internal forces Reaction diagram-- Bending moment, shear force, radial shear, normal thrust diagrams. Analysis of three-hinged arch of various shapes under different loading conditions. Analysis of three hinged stiffening girders under different loading conditions.	CO-3
Moving Loads and Influence Line Diagrams: Concept of influence line diagram, rolling loads; Bending moment and shear force diagrams due to single and multiple concentrated rolling loads, uniformly distributed moving loads; Equivalent UDL;	CO-4
Muller Breslau principle; Influence lines for beams, girders with floor beams and frames; calculation of the maximum and absolute maximum shear force and bending moment; Concept of envelopes; Influence line for displacements; Influence line for bar force in trusses.	CO-5
Analysis of Cables and Suspension Bridges: General cable theorem, shape, elastic stretch of cable, maximum tension in cable, cables under different loading conditions. pressure on supporting towers, suspension bridges.	CO-6

References:
<ul style="list-style-type: none"> • Basic structural Analysis C.S.Reddy; Tata McGraw-Hill Education • Analysis of Structures Vol- I and Vol.-II Vazirani&Ratwani; Khanna Publishers • Intermediate structural Analysis C.K.Wang; McGraw-Hill • Advanced Structural Analysis, A.K. Jain, Nem Chand & Bros., Roorkee. • Theory of Structures, Vol. I, S.P. Gupta &G.S.Pandit, Tata McGraw Hill, New Delhi.

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4th Semester	AGCE-25402: Survey				
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Apply chain, compass, and plane table techniques to measure distances, angles, and areas of irregular boundaries.
CO-2	Determine elevations and reduced levels using rise-and-fall, height-of-instrument, and trigonometric levelling methodologies.
CO-3	Analyze spatial terrains using contour maps to deduce horizontal equivalents, interpolation paths, and project reservoir capacities.
CO-4	Investigate traverse closures and point locations using theodolites, tacheometers, and systematic error adjustment rules.
CO-5	Deconstruct aerial photographs and electromagnetic remote sensing data to determine scales, elevations, and surface interactions.
CO-6	Evaluate geospatial data using GIS, GPS, and robotic total stations to plan automated infrastructure layouts.

Content	CO
Basic Surveying: Definition, principles of surveying, types of surveys, maps, scale of map. Calculation of areas by application of Formulae - The Trapezoidal Rule and The Simpson's Rule. Chain Surveying: Measurement of distances with chain and tape, chain and tape corrections, Ranging, direct & indirect ranging, offsets, Compass Surveying: bearing and its measurement with prismatic compass, calculation of angles from bearings. Plane Table Surveying: Setting up the plane table and methods of plane tabling.	CO-1
Levelling: Definitions of terms used in levelling, types of Levels, setting up a Level, booking and reducing the levels by rise & fall method and height of instrument method, correction due to curvature and refraction, Trigonometric Levelling: Height, distance and RL of inaccessible objects.	CO-2
Contouring: Definition, horizontal equivalent, contour interval, characteristics of contours, methods of contouring, interpolation of contours, uses of contour maps.	CO-3
Theodolites and Tacheometers: Temporary & permanent adjustment of transit Theodolite, traversing with a Theodolite, adjustment of closing error by Bowditch & transit rules. Calculation of vertical and horizontal distances, Subtense bar. Tacheometric levelling with both angle of depression and elevation, errors due to curvature & refraction.	CO-4
Photogrammetry & Remote Sensing: Introduction, Basic Principles of photogrammetry, Photo-Theodolite, Elevation of a Point by Photographic Measurement, Aerial Camera, Scale of Vertical Photograph, Introduction to remote sensing, interaction of EMR with Earth Surface Working Principles and Instrumentation.	CO-5
GIS & GPS: Introduction, concepts and terminology, Utility of GIS, Essential components of a GIS, Introduction, working principle and various applications of GPS related to Civil Engineering. Total Station & Smart Stations: Digital total station, Robotic total stations, Automated angle and distance measurements.	CO-6

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References:

- Surveying, by C.L. Kochher – Danpat Rai & Sons
- Surveying, Volume – I & II, by B.C. Punmia, Ashok K. Jain and Arun K. Jain – Laxmi Publications (P) Ltd.
- Surveying – III (Higher Surveying), by B.C. Punmia, Ashok K. Jain and Arun K. Jain – Laxmi Publications (P) Ltd.
- Surveying by Kanetkar
- Kaplan, E.D., Understanding GPS : Principles and applications
- Campbell, J.B. Taylor and Francis, "Introduction to Remote Sensing".

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Annexure-II
B.Tech Civil Engineering | 2025

4th Semester	AGCE-25403: Environmental Engineering - II				
Internal Marks:	40		L	T	P
External Marks:	60		3	0	0
Total Marks:	100		Credits		3

Course Outcomes: After studying the course, students will be able to:	
CO-1	Analyze urban sanitation configurations and community sewage generation profiles to design sustainable municipal sewerage networks.
CO-2	Implement plumbing layout regulations and drainage principles to establish efficient residential house drainage systems.
CO-3	Examine domestic and industrial wastewater characteristics by evaluating BOD kinetics, sampling metrics, and statutory effluent limits.
CO-4	Design primary and secondary wastewater unit processes, including activated sludge systems and sludge handling systems.
CO-5	Evaluate performance parameters and design frameworks for low-cost sanitation facilities, stabilization ponds, and constructed wetlands.
CO-6	Critique plant operation protocols alongside IoT-driven smart waste collection systems and advanced nutrient removal technologies.

Content	CO
Introduction: Terms & definitions, systems of sanitation and their merits and demerits. Separate system, Combined system and Partially combined system of sewerage, choice of sewerage system and suitability to Indian conditions.	CO-1
Sewerage System: Generation and estimation of community Sewage, flow variations, storm water flow. Design of sewers, construction & maintenance of sewers, sewer appurtenances.	
House Drainage: Principles of house drainage, traps, sanitary fittings, systems of plumbing, drainage lay out for residences.	CO-2
Characteristics of Sewage: Composition of domestic and industrial sewage, grab and composite sampling. Physical, Chemical and microbiological characteristics of sewage, biological decomposition of sewage, BOD and BOD kinetics, effluent disposal limits.	CO-3
Treatment of Sewage: Introduction to unit operations and processes - Primary treatment; screening (theory), grit chamber (theory), rectangular and circular sedimentation tanks (theory and design), Secondary treatment units; Activated Sludge Process (theory and design), High rate and Low rate trickling filters (theory and design). Sludge Handling and disposal; thickening, stabilization, dewatering, drying and disposal.	CO-4
Low Cost Sanitation Systems: Imhoff tanks (theory and design), septic tank (theory and design), soakage pit/soil absorption systems; stabilization ponds (theory and design); macrophyte ponds (Theory); oxidation ponds (theory and design), Oxidation ditches (Theory); and constructed wetland systems.	CO-5
Wastewater Treatment Plants and Advanced Wastewater Treatment: Treatment Plants; site selection, plant design, operation and maintenance aspects. Advanced wastewater treatment for nutrient removal, disinfection and polishing. Solid Waste Management using IoT: Smart bins, Sensor-based waste collection, Route optimization systems.	CO-6

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References:

- Waste Water Engineering. (Environmental Engineering-II) by B.C.Punmia, Ashok Jain, Laxmi Publications, New Delhi.
- Environmental Engineering. - A design Approach by Arcadio P. Sincero and Gregoria P. Sincero, Prentice Hall of India, New Delhi.
- "Waste Water Engineering - Treatment and Reuse" by Metcalf & Eddy, TMH, New Delhi.
- "Environmental Engineering." By Howard S. Peavy, Donald R. Rowe & George Tchobanoglous, McGraw Hill, International Edition
- Environmental Engineering (Vol. II) by S.K. Garg, Khanna Publishers, Delhi.

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Annexure-II
B.Tech Civil Engineering | 2025

4 th Semester	AGCE-25404: Mathematics for Civil Engineering				
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

Course Outcomes: After studying the course, students will be able to:	
CO-1	Apply differential and partial calculus techniques to determine optima and solve structural engineering challenges.
CO-2	Compute geometric volumes and fluid properties using multiple integration and ordinary differential equations.
CO-3	Analyze linear structural configurations and simultaneous systems using matrix operators and eigenvalue attributes.
CO-4	Apply vector field operators and classical integral theorems to model fluid dynamics and environmental fluxes.
CO-5	Analyze civil engineering experimental data using probabilistic distributions, regression models, and numerical interpolation.
CO-6	Evaluate complex structural or mechanical transformations and numerical solutions using Fourier, Laplace, or programming software (MATLAB/Python).

Content	CO
Differential Calculus & Applications: Functions and limits, Continuity and differentiability, Partial differentiation, Maxima and minima, Jacobians, Applications in engineering problems.	CO-1
Integral Calculus & Differential Equations: Definite and indefinite integration, Multiple integrals, Area and volume calculations, Ordinary differential equations, First and second order differential equations, Applications in structural and fluid engineering.	CO-2
Matrices & Linear Algebra: Matrices and determinants, Rank of matrix, Eigenvalues and eigenvectors, System of linear equations, Cayley-Hamilton theorem, Applications in structural systems.	CO-3
Vector Calculus: Vector differentiation, Gradient, divergence, and curl, Line, surface, and volume integrals, Green's theorem, Gauss divergence theorem, Stoke's theorem.	CO-4
Probability, Statistics & Numerical Methods: Probability theory, Random variable, Statistical analysis, Correlation and regression, Numerical method, Interpolation and numerical integration.	CO-5
Advanced Engineering Mathematics & Computational Applications: Fourier series, Laplace transforms, Complex variables, Numerical solutions using software, MATLAB/Python basics for engineering calculations, Applications in modern civil engineering.	CO-6

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References:

- Higher Engineering Mathematics Author: B. S. Grewal Publisher: Khanna Publishers
- Advanced Engineering Mathematic Author: Erwin Kreyszig Publisher: Wiley India / John Wiley & Sons
- Engineering Mathematics Authors: N. P. Bali, Manish Goyal Publisher: Laxmi Publications
- Engineering Mathematics Author: B. V. Ramana Publisher: Tata McGraw-Hill Education
- Advanced Engineering Mathematics Authors: R. K. Jain, S. R. K. Iyengar Publisher: Narosa Publishing House
- Numerical Methods for Engineers Authors: Steven C. Chapra, Raymond P. Canale Publisher: McGraw-Hill Education
- Introductory Methods of Numerical Analysis Author: S. S. Sastry Publisher: PHI Learning Pvt. Ltd.
- Probability and Statistics for Engineers Author: Richard A. Johnson Publisher: Pearson Education
- Fundamentals of Mathematical Statistics Authors: S. C. Gupta, V. K. Kapoor Publisher: Sultan Chand & Sons
- MATLAB for Engineers Author: Holly Moore Publisher: Pearson Education
- Python for Everybody Author: Charles R. Severance Publisher: Shroff Publishers & Distributor

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Annexure-II
B.Tech Civil Engineering | 2025

4th Semester	AGCE-25405: Design of Concrete Structures				
Internal Marks:	40		L	T	P
External Marks:	60		3	1	0
Total Marks:	100		Credits		4

CO-1	Compare Working Stress and Limit State design philosophies while evaluating code compliance alternatives.
CO-2	Compute neutral axis depths and governing design moments for reinforced concrete sections.
CO-3	Design singly reinforced rectangular beams considering flexure, shear, bond, and development length.
CO-4	Design flanged and doubly reinforced concrete beams under complex transverse loading.
CO-5	Design short and slender compression members under uniaxial or biaxial bending.
CO-6	Design and detail structural layout configurations for one-way and two-way slabs.

Content	CO
Objectives and Methods of Analysis and Design, Properties of Concrete and Steel. Design Philosophies of Working Stress Method and Limit State Method, Limit State of Collapse – Flexure. Structural Analysis and Design Automation in Automated sizing of RCC members, Reinforcement optimization, Load prediction and distribution, Code compliance checking, Rapid generation of structural alternatives.	CO-1
Computation of Parameters of Governing Equations Determination of Neutral Axis Depth and Computation of Moment of Resistance	CO-2
Numerical Problems on Singly Reinforced Rectangular Beams Shear, Bond, Anchorage, Development Length and Torsion	CO-3
Doubly Reinforced Beams – Theory and Problems Flanged Beams – Theory and Numerical Problems	CO-4
Compression Members: Definitions, Classifications, Guidelines and Assumptions, Design of Short Axially Loaded Compression Members, Design of Short Compression Members under Axial Load with Uniaxial and biaxial Bending, Preparation of Design Charts, Design of Slender Columns	CO-5
Reinforced Concrete Slabs: One-way slabs and Two-way Slabs	CO-6

References:

- Properties of Concrete by A.M.Neville – Prentice Hall
- Concrete Technology by M.S.Shetty. – S.Chand& Co.;
- Concrete Technology by M.L. Gambhir. – Tata Mc. Graw Hill Publishers, New Delhi
- Concrete Technology by A.R. Santha Kumar, Oxford university Press, New Delhi
- Advanced Design of Structures N. Krishna Raju
- Advanced RCC Design Pillai&Mennon; Tata MacGraw Hill
- Limit State Design Ramachandra
- Limit State Design A.K. Jain
- Limit State Design of Reinforced Concrete P.C. Vergese

Upendra
15/05/26

4 th Semester	AGCE-25406: Survey - Lab				
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:

CO-1	Execute chain and compass surveying procedures to measure line bearings, take offsets, and plot plan details.
CO-2	Implement plane table radiation and intersection methods to plot physical field details directly onto sheets.
CO-3	Analyze field levelling data using Rise-and-Fall or Height-of-Instrument methods to determine precise point elevations.
CO-4	Determine horizontal and vertical angles on open or closed traverses using transit theodolite configurations.
CO-5	Investigate spatial distances and relative elevations through stadia intervals using optical tacheometer configurations.
CO-6	Design and validate a practical survey mini-project to solve real-world layout or mapping challenges.

Experiment	CO
Ranging a line, measuring its bearing and taking offsets to plot details of an area.	CO-1
Plotting details of an area by plane table surveying	CO-2
To perform levelling by Rise and Fall / Height of Instrument method.	CO-3
4 Measurement of Horizontal/Vertical angles by theodolite.	CO-4
5. Measurement of horizontal and vertical distances using theodolite/Tacheometer.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25402 (Survey)	CO-6

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4 th Semester		AGCE-25407: Environment Engineering - Lab			
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO-1	Analyze the pH indices of water and wastewater samples to characterize their basic or acidic properties.
CO-2	Determine total hardness concentrations in variable water matrices using standard titrimetric laboratory testing.
CO-3	Examine quantitative acidity and alkalinity profiles to evaluate chemical neutralization and buffering capacities.
CO-4	Compute chloride concentrations in water samples to evaluate pollution levels against environmental guidelines.
CO-5	Deconstruct total solid content into dissolved and suspended fractions to evaluate physical water contamination loads.
CO-6	Design and validate an environmental process mini-project to solve real-world water or wastewater remediation challenges.

Experiment	CO
1. To measure the pH value of a water/waste water sample.	CO-1
2. Determination of Hardness of a given water sample.	CO-2
3. To find acidity/alkalinity of a given water sample.	CO-3
4. To find chlorides in a given sample of water/waste water.	CO-4
5. Determination of total solids, dissolved solids, suspended solids of a given water sample.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25303 (Environmental Engineering -I) and AGCE – 25403 (Environmental Engineering -II)	CO-6

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4 th Semester		AGCE-25408: Building Construction Drawing			
Internal Marks:	50		L	T	P
External Marks:	-		0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO-1	Apply National Building Code (SP7:2016) criteria to ensure legal and structural safety compliance.
CO-2	Design architectural line plans and front elevation profiles matching client user specifications.
CO-3	Construct optimized load-bearing wall plans and functional interior layouts for structural efficiency.
CO-4	Analyze detailed cross-sectional plans and vertical elevations of multi-room residential configurations.
CO-5	Examine complex cross-sectional layouts and execution details for large-scale public infrastructure.
CO-6	Design and validate an advanced engineering drawing mini-project combining materials and building components.

Experiment	CO
1. To study the guidelines / specifications of National Building Code. (SP7:2016 Vol. 1&2)	CO-1
2. To prepare line plan & elevation of a residential building as per given set of requirements.	CO-2
3. To prepare wall plan for the residential building of Sr. No. 2.	CO-3
4. To prepare the sectional plan and sectional elevation of a two room building.	CO-4
5. To prepare the sectional plan and sectional elevation of a public building.	CO-5
To make a mini project that demonstrates a concept, based on the content of AGCE – 25305 (Building Materials & Construction)	CO-6

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4 th Semester	*** : Entrepreneurship Mindset Curriculum				
Internal Marks:	-		L	T	P
External Marks:	-		0	0	4
Total Marks:	-		Credits		2

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4 th Semester	AGMC-25002 ESSENCE OF INDIAN KNOWLEDGE TRADITION				
Internal Marks:	-		L	T	P
External Marks:	-		1	0	0
Total Marks:	-		Credits		0

Course Outcomes: After studying the course, students will be able to:	
CO-1	Understand the concept of traditional knowledge and its importance
CO-2	Know the need and importance of protecting traditional knowledge.
CO-3	Know the various enactments related to the protection of traditional knowledge.
CO-4	Understand the concepts of Intellectual property to protect the traditional knowledge.
CO-5	Understand significance of traditional knowledge in different sectors

Experiment	CO
INTRODUCTION TO TRADITIONAL KNOWLEDGE: Define traditional knowledge, nature and characteristics, scope and importance, kinds of traditional knowledge, the physical and social contexts in which traditional knowledge develop, the historical impact of social change on traditional knowledge systems. Indigenous Knowledge (IK), characteristics, traditional knowledge vis-à-vis indigenous knowledge, traditional knowledge Vs western knowledge traditional knowledge vis-à-vis formal knowledge	
PROTECTION OF TRADITIONAL KNOWLEDGE: Protection of traditional knowledge: The need for protecting traditional knowledge Significance of TK Protection, value of TK in global economy, Role of Government to harness TK.	
LEGAL FRAMEWORK AND TK: A: The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, Plant Varieties Protection and Farmer's Rights Act, 2001 (PPVFR Act); B: The Biological Diversity Act 2002 and Rules 2004, the protection of traditional knowledge bill, 2016. Geographical indicators act 2003.	
TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY: Certain non IPR mechanisms of traditional knowledge protection, Patents and traditional knowledge.	
TRADITIONAL KNOWLEDGE IN DIFFERENT SECTORS: Traditional knowledge and engineering, Traditional medicine system, TK and biotechnology, TK in agriculture, Traditional societies depend on it for their food and healthcare needs, Importance of conservation and sustainable development of environment, Management of biodiversity, Food security of the country and protection of TK. 139	

References:
<ul style="list-style-type: none"> • Traditional Knowledge System in India, by Amit Jha, 2009. • Traditional Knowledge System and Technology in India by Basanta Kumar Mohanta and Vipin Kumar Singh, Pratibha Prakashan 2012. • "Knowledge Traditions and Practices of India" Kapil Kapoor1, Michel Danino2.


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	Date: 15.05.2026	


(Annexure- III)

The Change of the thesis topic and supervisor of M.Tech (Civil Engineering)

The member of BoS was approved the change of topic and supervisors of M.Tech Civil Engineering for the following candidate.

S. No.	University Roll No.	Name of Student	Name of Supervisor	Topic
1.	2000903	Khusboo	Er. Vijay Kumar	Evaluation of Strength Characteristics and Wet-Dry Durability of Soil Stabilized Using Ground Granulated Blast Furnace Slag and Rice Husk Ash

Vijay Kumar
15/05/26

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	Date: 15.05.2026	

(Annexure- IV)

The Supervisors for MTech (Civil Engineering) for candidates admitted in 2024-25 were discussed and finalised.

Sr. No.	Uni. Roll No.	Name	Supervisor Name
1	2334047	Abdul Waheed Pedhar	Er. Sandeep Sharma
2	2412607	Amandeep Singh	Er. Sandeep Sharma & Dr. Upain Kumar Bhatia
3	2459395	Faisal Rashid Bhat	Er. Vijay Kumar
4	2412608	Harmanpreet Singh	Er. Kaiser Saleem & Dr. Upain Kumar Bhatia
5	2412609	Hazik Imtiyaz	Er. Vijay Kumar
6	2412610	Joshanjit Singh	Er. Vijay Kumar & Dr. Upain Kumar Bhatia
7	2412611	Kajol Manhas	Er. Vijay Kumar & Dr. Upain Kumar Bhatia
8	2412612	Mahir Akhtar	Er. Kaiser Saleem & Dr. Upain Kumar Bhatia
9	2412613	Mohmad Asif Wani	Er. Vijay Kumar
10	2459396	Paras Arora	Er. Sandeep Sharma
11	2412614	Prince Raj	Er. Vijay Kumar
12	2412615	Ramanpreet Kaur	Er. Sandeep Sharma & Dr. Upain Kumar Bhatia
13	2412616	Ranjeet Singh	Er. Sandeep Sharma
14	2459397	Rayeed Bilal Jan	Er. Sandeep Sharma
15	2459398	Rezwana Showkat	Er. Kaiser Saleem & Dr. Upain Kumar Bhatia
16	2412617	Stanzin Spaldon	Er. Vijay Kumar
17	2412618	Tajammul Hassan	Er. Sandeep Sharma

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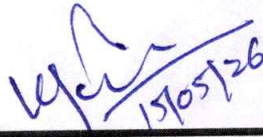
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	Date: 15.05.2026	

(Annexure- V)

The Synopsis Presentation of M. Tech (Civil Engineering)

The synopsis presentation of the following student of M. Tech (Civil Engineering) was conducted on following dates and found satisfactory.

S. No.	University Roll No.	Name of Student	Name of Supervisor	Topic	Date
1.	2459395	Faisal Bhat	Er. Vijay Kumar	Comparative Assessment of Embodied Carbon Reduction Through Alternative Construction Materials in Indian Residential Construction	05/05/2026
2.	2412608	Harmanpreet Singh	Er. Kaiser Saleem	Experimental Investigation on the Performance of Flexible Pavement Modified with Waste Polyethylene Terephthalate (PET)	11/05/2026
3.	2412610	Joshanjit Singh	Er. Vijay Kumar	Development of Sustainable Structural Concrete Using Recycled PET Waste as Partial Coarse Aggregate Replacement: Evaluation of Mechanical, Durability, and Microstructural Properties	11/05/2026
4.	2132441	Raghia Sharma	Er. Vijay Kumar	Experimental Investigation on the Engineering Behavior of Plastic-Waste-Reinforced Soils	01/04/2026
5.	2000903	Khusboo	Er. Vijay Kumar	Evaluation of Strength Characteristics and Wet-Dry Durability of Soil Stabilized with Ground Granulated Blast Furnace Slag and Rice Husk Ash	16/01/2026


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(Annexure- VI)

Internal Presentation of M. Tech (Civil Engineering)

The internal presentations of the below mentioned students were held before the dissertation committee and found to be satisfactory.

S. No.	University Roll No.	Name of Student	Name of Supervisor	Topic	Date
1.	2234159	Iqra Hameed	Er. Sandeep Sharma	Utilization of Waste Glass and Marble Dust Powder as Partial Replacement of Fine Aggregate and Cement in M25 Grade Concrete for Sustainable Construction	17/12/2025
2.	2234160	Mehbooba Mohamad	Er. Rajinder Partap Singh	Impact of Replacement of Cement with Rice Husk Ash and Waste Paper Sludge Ash on Strength Properties of Concrete	16/03/2025

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(Annexure- VII)

External Viva-Voce Examination of M. Tech (Civil Engineering)

The external viva voce examinations of the below mentioned students were held before the external examiners and found to be satisfactory.

S. No.	University Roll No.	Name of Student	Name of Supervisor	Topic	Date of Examination
1.	2132439	Anjali	Er. Vijay Kumar	SUSTAINABLE CONCRETE BY INCORPORATION OF RECYCLED AGGREGATES, GROUND GRANULATED BLAST FURNACE SLAG AND STEEL FIBER.	19.12.2025
2.	2234162	Tahir Yasin	Er. Vijay Kumar	AN INVESTIGATION ON USE OF WASTE MATERIALS AND ECO-FRIENDLY CONSTRUCTION MATERIALS TO CREATE GREEN CONCRETE	19.12.2025
3.	2234159	Iqra Hameed	Er. Sandeep Sharma	UTILIZATION OF WASTE GLASS AND MARBLE DUST POWDER AS FINE AGGREGATE AND CEMENT REPLACEMENT IN M25 GRADE CONCRETE	18.03.2026
4.	2234160	Mehbooba Mohamad	Er. Rajinder Partap Singh	IMPACT OF REPLACEMENT OF CEMENT WITH RICE HUSK ASH AND WASTE PAPER SLUDGE ASH ON STRENGTH PROPERTIES OF CONCRETE	18.03.2026

(Annexure- VIII)

Results of Nov 2025 Examinations

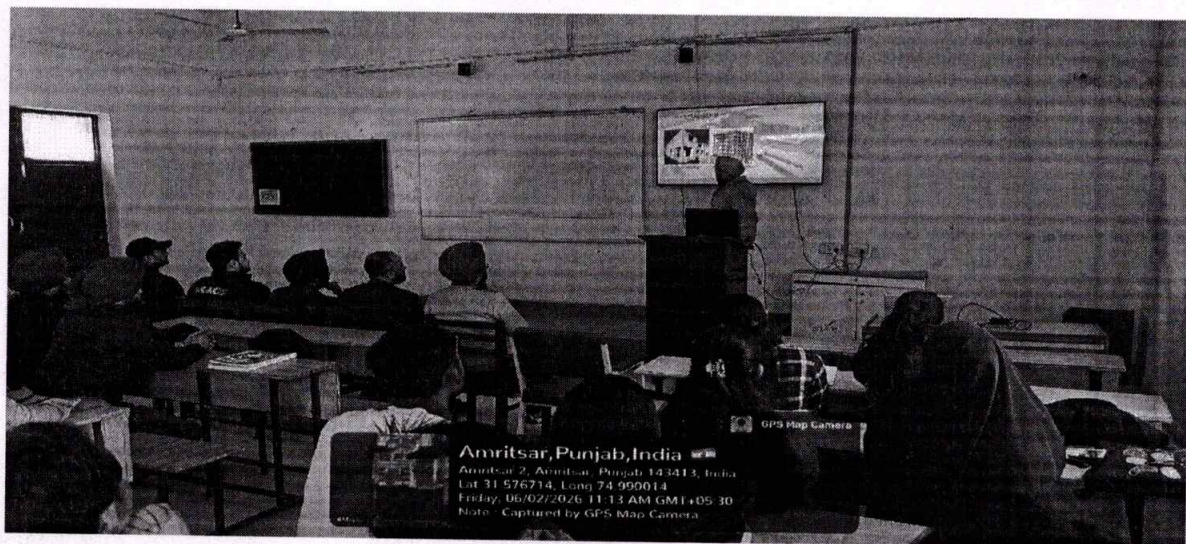
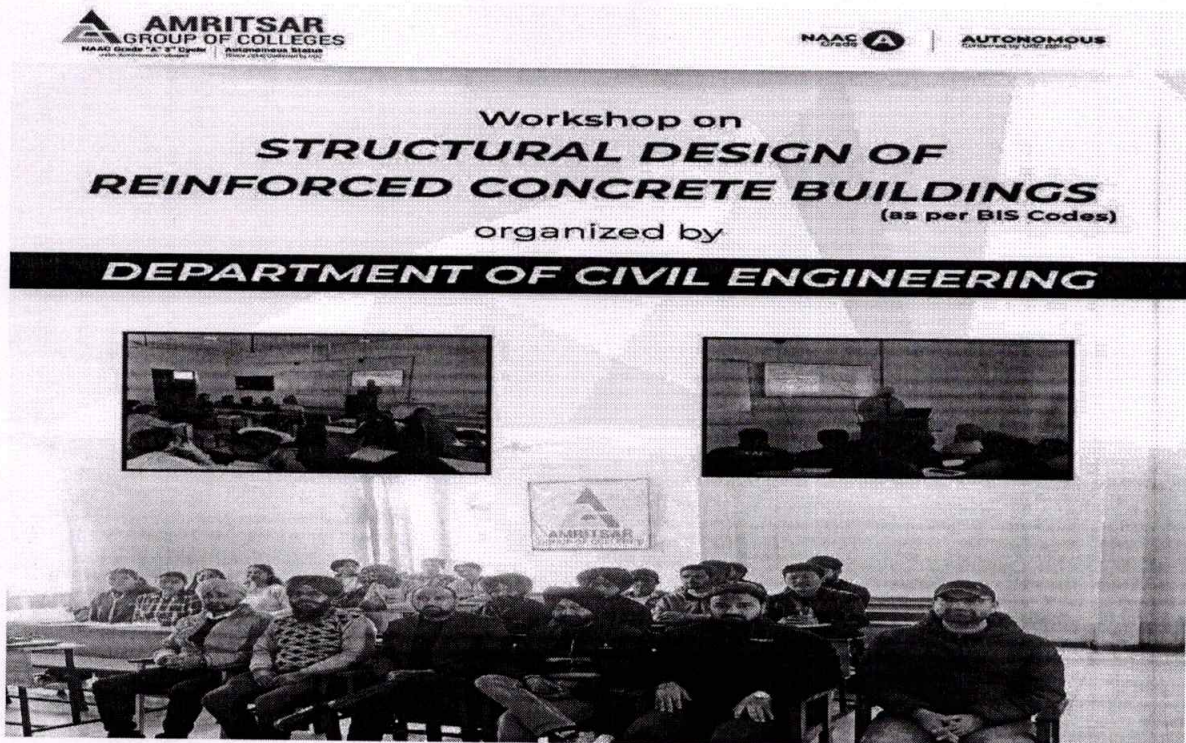
Examination	2011-15	2012-16	2013-17	2014-18	2015-19	2016-20	2017-21	2018-22	2019-23	2020-24	2021-25	2022-26	2023-27	2024-28
Nov-14	94.52	77.46	50.41											
May-15	100	73.94	60.48											
Nov-15		95	65.29	43.15										
May-16		89.78	73.33	61.27										
Nov-16			82.64	44.29	52.71									
May-17			93.33	88.7	70									
Nov-17				86.32	66.67	85.92								
May-18				92.56	94.4	78.57								
Nov-18					96.61	77.46	48.53							
May-19					95.73	85.51	78.33							
Nov-19						81.69	56.25	57.2						
May-20						100	98.31	93.9						
Nov-20							75.8	90.6	79.3					
May-21							100	93.75	89.65					
Nov-21								56.25	64.51	26.66				
May-22								100	46					
Nov-22									43	46	43			
May-23									100	66.66	31.5			
Nov-23										53.33	33.33	33.33		
May-24										100	7	20		
Nov-24											83.68	89.98	74.37	
May-25											92.85	64.7	60	
Nov-25												91.14	100	89.27

S.No	Semester	Subject Code	Subject Name	pass Percentage	
1	3	AGCE - 21301	Strength of Materials	56	56
2	3	AGCE - 21302	Concrete Technology	94	94
3	3	AGCE - 21303	Environment Engineering - I	81	81
4	3	AGCE - 21304	Fluid Mechanics	88	88
5	3	AGCE - 21305	Building Materials & Construction	94	94
6	3	AGCE - 21306	Strength of Materials - Lab	100	100
7	3	AGCE - 21307	Concrete Technology - Lab	100	100
8	3	AGCE - 21308	Fluid Mechanics - Lab	100	100
9	3	AGFE - 21301	Functional English - I	100	100
10	3	AGMC-21301	Indian Constitution (Mandatory Course)	69	69
11	3	AGCE - 21309	Institutional Training	100	100
12	5	AGCE - 21501	Geotechnical Engineering	100	100
13	5	AGCE - 21502	Irrigation Engineering - I	100	100
14	5	AGCE - 21503	Transportation Engineering - I	100	100
15	5	AGCE - 21504x	Professional Elective Course - I	100	100
16	5	AGCE - 21505	Design of Advanced Concrete Structures (Skill Course-I)	100	100
17	5	AGCE - 21506	Structural Analysis - Lab	100	100
18	5	AGCE - 21507	Computer Aided Drawing-I Lab	100	100
19	5	AGCE - 21508	Geotechnical Engineering Lab	100	100
20	5	AGAP - 21502	Engineering Aptitude - II	100	100
21	5	AGCE - 21509	Survey Camp (On-site Training)	100	100
22	7	AGCE - 21701	Design of Steel Structures - II	63	63
23	7	AGCE - 21702	Irrigation Engineering - II	81	81
24	7	AGCE - 21703A	Solid Waste Management	94	94
25	7	AGOE - 21704	Material Management	100	100
26	7	AGCE - 21705	Irrigation Engineering - Drawing	100	100
27	7	AGCE - 21706	Design of Steel Structures Lab	100	100
28	7	AGCE - 21704	Project	100	100


(Annexure- IX)

Major activities/events organized by the department.

1. Guest Lecture on Structural Design of reinforced concrete buildings delivered by our alumni Er. Tejinderpal Singh on 06/02/2026.



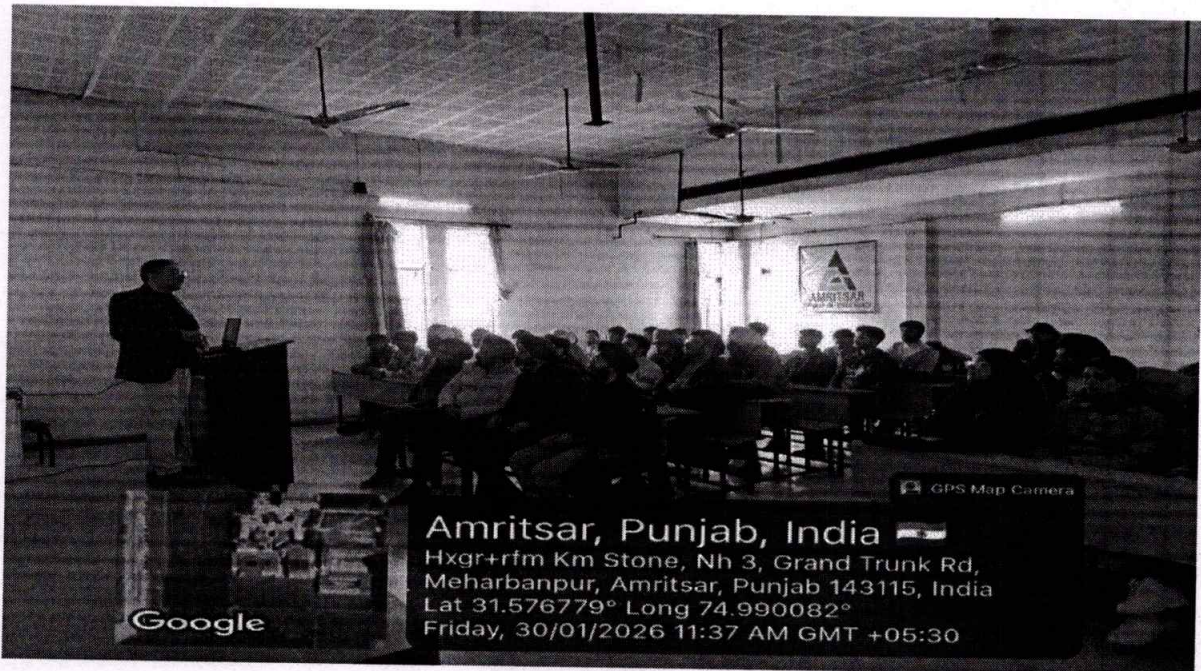
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	Date: 15.05.2026	

(Annexure- IX)

Major activities/events organized by the department.

2. Guest Lecture on Structural Dynamic Design through Finite Element Model Updating on 30/01/2026.




The Department of Mechanical/Civil Engineering organized a Guest Lecture on “Structural Dynamic Design through Finite Element Model Updating” on **30 January 2026** for the students of B.Tech. (ME/CE) and related branches.

The lecture was delivered by **Prof. Shankar Sehgal**, Professor & Coordinator (Head), Department of Mechanical Engineering at UIET, Panjab University, Chandigarh, India. The session focused on the fundamentals of structural dynamics, vibration analysis, and the importance of Finite Element Model Updating (FEMU) in improving the accuracy of structural models.

The speaker discussed practical applications of FEMU in various engineering fields and explained the correlation between experimental analysis and numerical simulations. The lecture provided students with exposure to modern analytical techniques and motivated them towards research and industry-oriented applications in structural engineering.

The session concluded with an interactive discussion and question-answer session, where students actively participated and clarified their queries.

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	Date: 15.05.2026	

(Annexure- IX)

Major activities/events organized by the department.

3. Guest Lecture on Fearless Future Blueprint on 16/02/2026.




The Department of Mechanical/Civil Engineering organized a Guest Lecture on “**Fearless Future Blueprint**” on **16 February 2026** for the students of B.Tech. (ME/CE/EE) and related branches.

The session was conducted by **Ms. Shveta Virmani**, Founder & Director at Life Miracle, and **Ms. Seema Adnani**, CEO & Founder at Life Miracle. The lecture focused on overcoming fear, building self-confidence, and developing a growth mindset for personal and professional success.

The speakers guided students on creating a clear vision for their future and emphasized the importance of consistent action, goal setting, and self-development. Practical strategies for handling challenges, decision-making, and overcoming limiting beliefs were also discussed during the session.

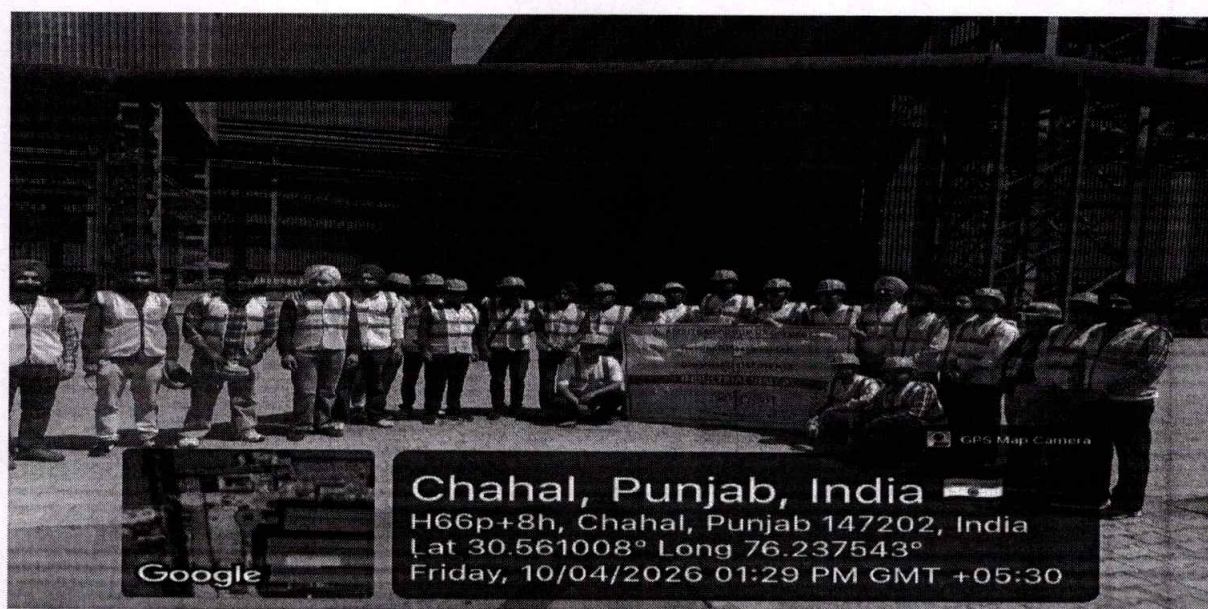
The lecture motivated students to adopt a positive mindset and prepare a structured roadmap for their future growth and career development. The session concluded with an interactive discussion and active participation from students.

 AMRITSAR GROUP OF COLLEGES <small>NAAC Grade "A" 3rd Cycle under Autonomous Category</small>	Proceedings 16thBoS Meeting	Department of Civil Engineering
	Date: 15.05.2026	

(Annexure- IX)

Major activities/events organized by the department.

4.Industrial Visit to Madhav KRG Group, Patiala on 10/04/2026.



An Industrial Visit to **Madhav KRG Group, Patiala** was organized on **10 April 2026** for the students of Mechanical Engineering, Electrical Engineering and Civil Engineering departments. The visit was coordinated by **Mr. Sandeep Singh** and **Mr. Sanamdeep Singh**.

The objective of the visit was to provide students with practical exposure to industrial operations, manufacturing processes, production techniques, and modern industrial practices. During the visit, students observed various machines, equipment, and operational activities being carried out in the industry. Industry experts also interacted with the students and explained the working procedures, safety measures, and quality control practices followed in the organization.

The industrial visit helped students bridge the gap between theoretical knowledge and practical applications. It enhanced their understanding of industrial environments, technical processes, teamwork, and professional practices.

The visit concluded successfully with active participation and learning experiences for the students.

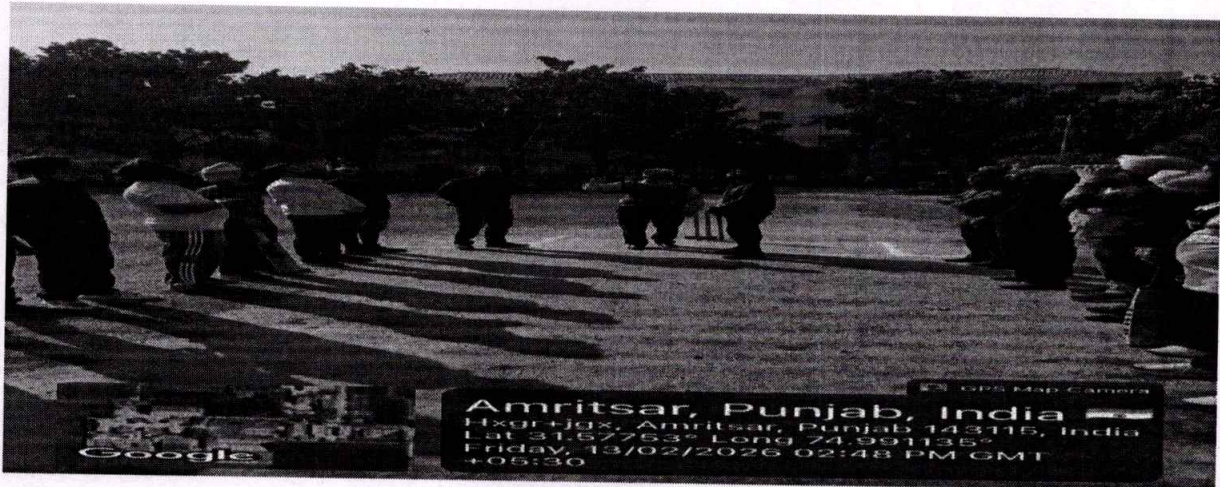
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15/05/26

 AMRITSAR GROUP OF COLLEGES <small>NAAC Grade "A" 3rd Cycle under Autonomous Category Autonomous College (Since 2014) Conferred by UGC</small>	Proceedings 16thBoS Meeting	Department of Civil Engineering
	Date: 15.05.2026	

(Annexure- IX)

Major activities/events organized by the department.

5. Cricket Tournament on 12/02/2026 and 13/02/2026.



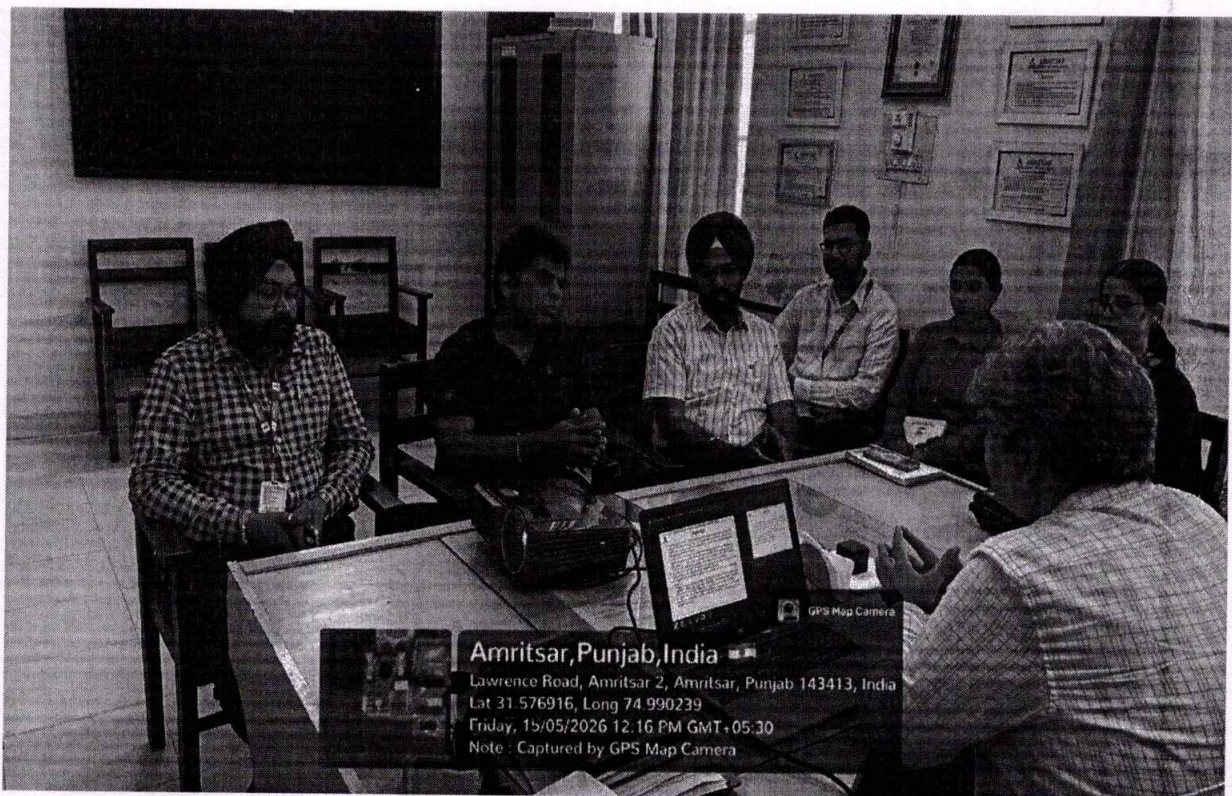
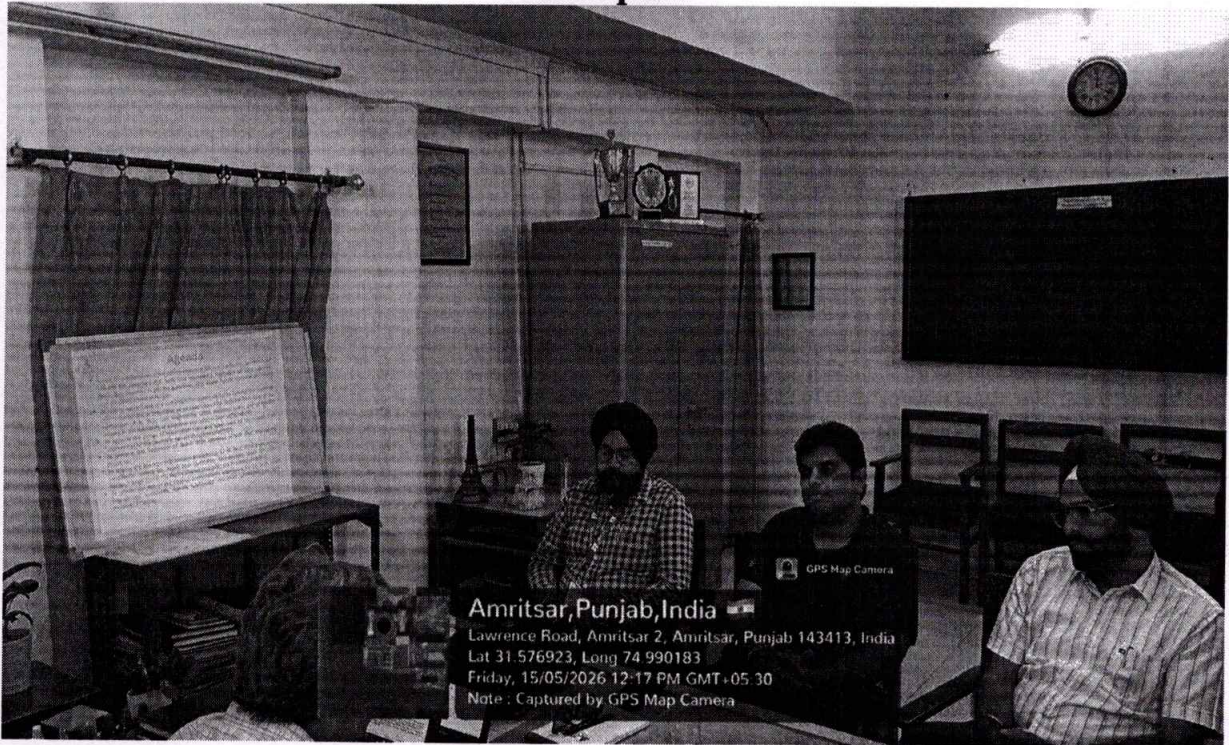
The Inter Department Cricket Tournament–2026 was organized from **12 February 2026 to 13 February 2026** with enthusiastic participation from students of different departments. The event aimed to promote sportsmanship, teamwork, and physical fitness among students. The tournament was coordinated by Mr. Banti Tiwari, Student Coordinator.

Three 10-over matches were conducted between the Mechanical and Civil Engineering teams. In the first match, Mechanical Engineering defeated Civil Engineering by scoring 140/8 against 128/10. In the second match, Civil Engineering won by scoring 132/3 against Mechanical Engineering's 124/5. In the final match, Mechanical Engineering secured victory with a score of 156/6, while Civil Engineering scored 144/10.

The tournament concluded successfully with active participation and great enthusiasm among students. The event encouraged discipline, coordination, teamwork, and sportsmanship spirit among the participants.

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Glimpses



Handwritten signature and date: 15/05/26

Department of Civil Engineering



Honorarium/TA/DA Bill

For External Member

External Practical Examination, BOS Meeting

Honorarium /TA/DA Bill

1 Name (In Block Letters):- Dr. Sandeep Singla 2. Father's Name:- Sh. R.M. Singla
 3. Address:- Chitkara University Chandigarh, Sector 14, CNH-64 Contact No:- 987280200
 4. Designation:- Asst Director Academic Affairs 5. Organization:- Chitkara University
 6. Pay Scale/ Consolidated Salary:- 37400 - 67000 7. Grade Pay:- 10,000
 Date of Practical:- BOS 15/05/2020 9. Last Pay Scale & GP (if Retired):-
 10. E-mail ID:- sandeep.singla@chitkara.edu.in

TA/DA/Local Journey/Toll Tax etc.

Departure			Arrival			Mode of Journey & Vehicle No.	Distance for Road Mileage		Amount of Toll tax etc.	Hotel/ Non Hotel D.A	Total Amount (Rs.)
Date	Station	Time	Date	Station	Time		K.M	Rate			
15/5	Chitkara Univ city	6:30 am	15/5	AGC Assn	10:30 am	PB-65 AB-0785	225		530/-		
Honorarium For offline mode Rs 4000/-											
										Total	4000/-

Certified that:-

- I. Particular provided herewith are correct & that I have not claimed TA/DA for this Journey from any other Public Source and bill is submitted first time.
- II. I was not provided free lodging and/or boarding at the cost of Govt./ University or any autonomous body if provided please attach boarding/loading /both bills.
- III. Certified that I shall perform the return Journey From _____ to _____ in _____ class.
- IV. Certified that the I have traveled by shortest route and I will perform return Journey by same route and _____ mode of conveyance/ as claimed.

The above practical examination conduct claim is verified to be true & correct.

Verified By:-

[Signature]
Head of Department (with Stamp) 15/05/20

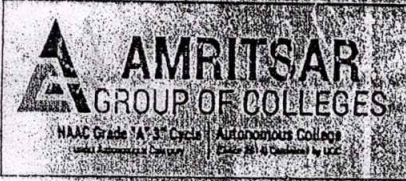
Affix revenue stamp for receipt Above Rs.5000

[Signature]
Signature of Claimant

For Use by Account Office Only

Amount claimed above is as per college rules/norms. Payment of Rs. _____ may be allowed to be made please.

Department of Civil Engineering



Honorary/TA/DA Bill

For External Member
BOS Meeting

~~For Practical Examination~~

Honorary/TA/DA Bill

1. Name (In Block Letters):- Dr. Maninder Singh 2. Father's Name:- Dr. Mohinder Singh
 3. Address:- GNDU, Amritsar Contact No.:- 7584288
 4. Designation:- Prof. & HOD 5. Organization:- GNDU, Amritsar
 6. Pay Scale/ Consolidated Salary:- 15600-39000 7. Grade Pay:- 7000/-
 8. Date of Payment:- BOS 15/5/2026 9. Last Pay Scale & CP (if Retired):-
 10. E-mail ID:- m.s.dhulka@gmail.com

TA/DA/Local Journey/Toll/Tax etc.

Departure			Arrival			Mode of Journey & Vehicle No.	Distance for Road Mileage		Amount of Toll tax etc.	Hotel/ Non Hotel D.A	To Arnc (R)
Date	Station	Time	Date	Station	Time		K.M	Rate			
15/5/26	ASR	10:00	15/5/26	AGC ASR	10:15	PG02 EE 1771	10	10			
Honorary For offline mode Rs 4000/-											
										Total	4000

Certified that:-

- I. Particular provided herewith are correct & that I have not claimed TA/DA for this Journey from any other Public Source and bill is submitted first time.
- II. I was not provided free lodging and/or boarding at the cost of Govt./ University or any autonomous body if provided please attach boarding/boarding/both bills.
- III. Certified that I shall perform the return Journey From _____ to _____ in _____ class.
- IV. Certified that I have traveled by shortest route and I will perform return Journey by same route and _____ mode of conveyance/ as claimed.

The above practical examination conduct claim is verified to be true & correct.

Verified By: -

Head of Department (with Stamp)
[Signature]
 15/05/26

Affix
 revenue
 stamp for
 receipt
 Above
 Rs.5000

[Signature]
 Signature of Claimant

For Use by Account Office Only

Amount claimed above is as per college rules/norms. Payment of Rs. _____ may be allowed to be made please