AMRITSAR GROUP OF COLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,

(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

15th Meeting of Board of Studies

(15-05-2026)

Department of Electrical Engineering

Amritsar Group of Colleges, Amritsar

AMRITSAR GROUP OF COLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,

(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

Agenda

And

Invitation Letters

Dr. Namarta Kad <hod.eee@acetedu.in>

15th meeting of Board of Studies in Department of Electrical Engineering, AGC

2 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Wed, May 6, 2026 at 12:45 PM
To: singhd@nitj.ac.in

Dear Sir,

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

You are further required to confirm your participation in the said meeting.
Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

2 attachments

- **Dr. Dilbag Singh.pdf** 201K
- **Agenda 15th BOS.pdf** 365K

Dr Dilbag Singh <singhd@nitj.ac.in> Wed, May 6, 2026 at 12:57 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

Thanks, I will be there.

Dr Dilbag Singh
Professor
Dept. of Instrumentation & Control Engineering

Dr B. R. Ambedkar National Institute of Technology
Jalandhar -144008
Mob: 098884 92132

[Quoted text hidden]

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle under Autonomous Category | Autonomous College (Since 2014) Conferred by UGC	**Invitation** **15th BoS meeting** **AGC/EE/1093(a)** **Date: 06/05/2026**	**Department of Electrical Engineering**

Dr. Dilbag Singh,

Professor,

Dr. B R Ambedkar National Institute of Technology,

Jalandhar

Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC Amritsar.

Dear Sir,

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

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

Your Faithfully

06/05/2026

Dr. Namarta Kad

Chairman, Board of Studies

Department of Electrical Engineering,

AGC Amritsar

Copy to

OSD to Chairman

PA to Principal

Registrar

Dean Academics

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Agenda** **15th BoS meeting** **Date: 06.05.2026**	**Department of Electrical Engineering**

Agenda of the 15th BoS meeting to be held on 15.05.2026

1. To welcome the BoS members and confirm the minutes of the 14th BoS meeting.
2. To consider and approve offering up to 40% of courses in the 3rd semester (Batch 2025), 5th semester (Batch 2024), and 7th semester (Batch 2023) through the SWAYAM–NPTEL platform for B.Tech Electrical Engineering students, as per UGC guidelines.
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8. To apprise and approve the list of supervisors for the dissertation of M.Tech (Electrical Engineering) for the batch 2023–2025 onwards.
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10. To apprise the BoS of activities conducted during the session:
    (a) Major departmental activities/events
    (b) Students' achievements
    (c) Top performers (December 2025 session)
11. To consider any other agenda item with the permission of the Chair.

06/05/2026

Member Secretary (BoS)

06/05/2026

Chairperson (BoS)

Dr. Namarta Kad <hod.eee@acetedu.in>

15th meeting of Board of Studies in Department of Electrical Engineering, AGC

2 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Wed, May 6, 2026 at 12:46 PM
To: sghosh@thapar.edu

Dear Sir,

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

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

Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

2 attachments

- Dr. Smarajit Ghosh.pdf 216K
- Agenda 15th BOS.pdf 365K

SMARAJIT GHOSH <sghosh@thapar.edu> Thu, May 7, 2026 at 9:36 AM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I shall attend the meeting.

DR. SMARAJIT GHOSH
Professor
Department of Electrical and Instrumentation Engineering
THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY
PATIALA - 147 004
PUNJAB, INDIA
(+91) 9872710783(M)
E-mail: smarajitg@hotmail.com
sghosh@thapar.edu

Residential Address:
House Number - 7
Anand Nagar - A (Extension)
Patiala - 147001
PUNJAB

[Quoted text hidden]

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Invitation** **15th BoS meeting** **AGC/EE/1093(c)** **Date: 06/05/2026**	**Department of Electrical Engineering**

Dr. Smarajit Ghosh,

Professor,

Department of Electrical and Instrumentation Engineering,

TIET, Patiala

Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC Amritsar.

Dear Sir,

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

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

Your Faithfully

06/05/2026

Dr. Namarta Kad

Chairman, Board of Studies

Department of Electrical Engineering,

AGC Amritsar

Copy to

OSD to Chairman

PA to Principal

Registrar

Dean Academics

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category (Since 2014) Conferred by UGC	**Agenda** **15th BoS meeting** **Date: 06.05.2026**	**Department of Electrical Engineering**

Agenda of the 15th BoS meeting to be held on 15.05.2026

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    (c) Top performers (December 2025 session)
11. To consider any other agenda item with the permission of the Chair.

06/05/2026
Member Secretary (BoS)

06/05/2026
Chairperson (BoS)

Dr. Namarta Kad <hod.eee@acetedu.in>

15th meeting of Board of Studies in Department of Electrical Engineering, AGC

2 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Wed, May 6, 2026 at 12:52 PM
To: dr.akhilgupta@ptu.ac.in

Dear Sir,

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

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

Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

2 attachments

Dr. Akhil Gupta.pdf
205K

Agenda 15th BOS.pdf
365K

Akhil Gupta <dr.akhilgupta@ptu.ac.in> Thu, May 7, 2026 at 11:26 AM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

Respected madam

I confirm I will be attending it

Regards

Thanking you with regards,

Akhil Gupta
Assistant Professor-Electrical Engineering Department (Main campus)
I.K. Gujral Punjab Technical University,
Jalandhar-Kapurthala Highway, VPO-Ibban,
Kapurthala-144603, District Kapurthala, Punjab-India
Mobile No.: 9855041124

Present sitting place: F203, 2nd floor, AB-2 Building

From: Dr. Namarta Kad <hod.eee@acetedu.in>
Sent: Wednesday, May 6, 2026 12:52 PM
To: Akhil Gupta <dr.akhilgupta@ptu.ac.in>
Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Invitation** **15th BoS meeting** **AGC/EE/1093(b)** **Date: 06/05/2026**	**Department of Electrical Engineering**

Dr. Akhil Gupta,

Assistant Professor,

Department of Electrical Engineering,

IKGPTU Main Campus, Kapurthala

Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC Amritsar.

Dear Sir,

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

Your Faithfully

06/05/2026

Dr. Namarta Kad

Chairman, Board of Studies

Department of Electrical Engineering,

AGC Amritsar

Copy to

OSD to Chairman

PA to Principal

Registrar

Dean Academics

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category (Since 2014) Conferred by UGC	**Agenda** **15th BoS meeting** **Date: 06.05.2026**	**Department of Electrical Engineering**

Agenda of the 15th BoS meeting to be held on 15.05.2026

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    (c) Top performers (December 2025 session)
11. To consider any other agenda item with the permission of the Chair.

Bimal Kumar 06/05/2026
Member Secretary (BoS)

06/05/2026
Chairperson (BoS)

Dr. Namarta Kad <hod.eee@acetedu.in>

15th meeting of Board of Studies in Department of Electrical Engineering, AGC

2 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Wed, May 6, 2026 at 12:48 PM
To: Tarsem Lal <tlbains519@gmail.com>

Dear Sir,

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

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

Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

2 attachments

Er. Tarsem Lal.pdf
176K

Agenda 15th BOS.pdf
365K

Tarsem Lal <tlbains519@gmail.com> Thu, May 14, 2026 at 5:44 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

Good evening Madam
Due to some unavoidable appointments in my office I would not be able to attend the meeting scheduled for tomorrow dt 15:05:2026. Please excuse me.
Thanking you

Er Tarsem Lal
Addl. SE/ DS Model Town (Spl) Division
PSPCL, Ludhiana
[Quoted text hidden]

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Invitation** **15th BoS meeting** **AGC/EE/1093(d)** **Date: 06/05/2026**	**Department of Electrical Engineering**

Er. Tarsem Lal,

A.S.E(Tech),

East Circle,

Ludhiana.

Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC Amritsar.

Dear Sir,

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

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

Your Faithfully

06/05/2026

Dr. Namarta Kad

Chairman, Board of Studies

Department of Electrical Engineering,

AGC Amritsar

Copy to

OSD to Chairman

PA to Principal

Registrar

Dean Academics

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College	**Agenda** **15th BoS meeting** **Date: 06.05.2026**	**Department of Electrical Engineering**

Agenda of the 15th BoS meeting to be held on 15.05.2026

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11. To consider any other agenda item with the permission of the Chair.

06/05/2026
Member Secretary (BoS)

06/05/2026
Chairperson (BoS)

Dr. Namarta Kad <hod.eee@acetedu.in>

15th meeting of Board of Studies in Department of Electrical Engineering, AGC

6 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Wed, May 6, 2026 at 12:55 PM
To: Bimal Kumar <bimalacet@gmail.com>, Atul Mahajan <mahajan271@gmail.com>, Guneet Kaur <erguneetkaur@gmail.com>, Chetan Verma <chetan.verma@acetedu.in>, Sanamdeep Singh <sanamdeep.ee@acetedu.in>, Dr Rajneesh Arora <md@acetedu.in>

Dear Sir,

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

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

Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

2 attachments

Internal members.pdf
205K

Agenda 15th BOS.pdf
365K

Atul Mahajan <mahajan271@gmail.com> Wed, May 6, 2026 at 1:10 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>
Cc: Bimal Kumar <bimalacet@gmail.com>, Guneet Kaur <erguneetkaur@gmail.com>, Chetan Verma <chetan.verma@acetedu.in>, Sanamdeep Singh <sanamdeep.ee@acetedu.in>, Dr Rajneesh Arora <md@acetedu.in>

I confirm my presence in the meeting

[Quoted text hidden]

Sanamdeep Singh <sanamdeep.ee@acetedu.in> Thu, May 7, 2026 at 4:45 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I will be present in the meeting on the **scheduled** day

[Quoted text hidden]

Guneet Kaur <erguneetkaur@gmail.com> Mon, May 11, 2026 at 11:27 AM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I confirm my presence in the meeting

On Wed, May 6, 2026 at 12:55 PM Dr. Namarta Kad <hod.eee@acetedu.in> wrote:

[Quoted text hidden]

Chetan Verma <chetan.verma@acetedu.in> Wed, May 13, 2026 at 9:29 AM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I Accept the invitation for appear in the BOS meeting on Said Date.

On Wed, May 6, 2026 at 12:55 PM Dr. Namarta Kad <hod.eee@acetedu.in> wrote:
[Quoted text hidden]

Bimal Kumar <bimalacet@gmail.com> Wed, May 13, 2026 at 9:31 AM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I Accept the invitation for appear in the BOS meeting on Said Date.

On Wed, May 6, 2026 at 12:55 PM Dr. Namarta Kad <hod.eee@acetedu.in> wrote:
[Quoted text hidden]

--
BIMAL KUMAR
ASSOCIATE PROFESSOR
DEPARTMENT OF ELECTRICAL ENGINEERING
AMRITSAR COLLEGE OF ENGINEERING AND TECHNOLOGY,
AMRITSAR-JALANDHAR G.T. ROAD,
12 KM MILE STONE
AMRITSAR
CONTACT NO. +91-98155--11810

E-Mail Id. bimalacet@gmail.com

bimalmukesh@yahoo.co.in

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Invitation** **15th BoS meeting** **AGC/EE/1093(e)** **Date: 06/05/2026**	**Department of Electrical Engineering**

Internal Members of Board of Studies in Electrical Engineering,

Amritsar Group of Colleges,

Amritsar.

Subject: 15th meeting of Board of Studies in Department of Electrical Engineering, AGC Amritsar.

Dear Sir,

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

Your Faithfully

06/05/2026

Dr. Namarta Kad

Chairman, Board of Studies

Department of Electrical Engineering,

AGC Amritsar

Copy to

OSD to Chairman

PA to Principal

Registrar

Dean Academics

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category (Since 2014) Conferred by UGC	**Agenda** **15th BoS meeting** **Date: 06.05.2026**	**Department of Electrical Engineering**

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11. To consider any other agenda item with the permission of the Chair.

06/05/2026

Member Secretary (BoS)

06/05/2026

Chairperson (BoS)

AMRITSAR GROUP OF COLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,

(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

Attendance Sheet

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Attendance Sheet** **15th BoS Meeting** **15/05/2026**	**Department of Electrical Engineering**

S.No.	Name	Signatures
1	Dr. Namarta Kad	
2	Dr. Dilbag Singh (External Expert)	
3	Dr. Smarajit Ghosh (External Expert)	S. Ghosh
4	Dr. Akhil Gupta (External Expert)	15.05.2026
5	Er. Tarsem Lal (External from Industry)	— ABSENT —
6	Er. Harmanpreet Kaur (Alumnus)	15/5/26.
7	Dr. Rajneesh Arora	
8	Er. Bimal Kumar	15.05.2026
9	Er. Atul Mahajan	15/5/2026.
10	Er. Guneet Kaur	15/5/2026
11	Er. Chetan Verma	
12	Er. Sanamdeep Singh	

15/5/2026.

Dr. Namarta Kad

(Chairperson, BoS & Head EE)

AMRITSAR GROUP OF COLEGES

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

15th Meeting

of

Board of Studies

Department of Electrical Engineering

Amritsar Group of Colleges,

Amritsar

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	**Proceedings** **15th BoS Meeting**	**Department of Electrical Engineering**

MINUTES OF THE 15TH MEETING OF BOARD OF STUDIES (15TH May, 2026)

Meeting of Board of Studies in the Department of Electrical Engineering, Amritsar Group of Colleges was held on 15th May, 2026 (Friday) at 11 a.m. The following attended the meeting:

1. Dr. Namarta Kad, HOD(EE), AGC Amritsar -in Chair
2. Dr. Dilbag Singh, Professor, NIT Jalandhar -External Expert
3. Dr. Smarajt Ghosh, Professor, TIET, Patiala -External Expert
4. Dr. Akhil Gupta, Assist. Professor, IKGPTU Main Campus, Kapurthala -External Expert
5. Er. Tarsem Lal, Addl. SE., PSPCL, Model Town Division, Ludhiana -Expert from industry.
6. Er. Harmanpreet Kaur -Alumnus
7. Er. Bimal Kumar, Associate Professor, EE, AGC Amritsar -Member Secretary
8. Dr. Rajneesh Arora, Professor, EE, AGC Amritsar
9. Er. Atul Mahajan, Associate Professor, EE, AGC Amritsar
10. Er. Guneet Kaur, Associate Professor, EE, AGC Amritsar
11. Er. Chetan Verma, Assistant Professor, EE, AGC Amritsar
12. Er. Sanamdeep Singh, Assistant Professor, EE, AGC Amritsar

Minutes of the meeting are as follows:

1. The Chairperson welcomed all the members to the 15th Board of Studies meeting. The minutes of the 14th BoS meeting held on 11th December 2025 were presented and confirmed by the members without any modification. ***(Annexure-I)***
2. The members of the BoS authorized the Chairperson (BOS) for offering up to 40% of courses in the 3rd semester (Batch 2025), 5th semester (Batch 2024), and 7th semester (Batch 2023) through the SWAYAM–NPTEL platform for B.Tech. Electrical Engineering students as per UGC guidelines.
3. The members reviewed and discussed the study scheme for B.Tech. Electrical Engineering. The revised study scheme for the 3rd and 4th semesters applicable for students admitted in 2025 onwards was finalized and approved. ***(Annexure-II)***
4. The syllabus and Course Outcomes for the 3rd and 4th semesters of B.Tech. Electrical Engineering for Batch 2025 onwards were reviewed in detail. The members suggested minor modifications for improved industry relevance and attainment mapping. After discussion, the syllabus and Course Outcomes were approved. ***(Annexure-III)***
5. The BoS members authorized the Chairperson (BOS) for the inclusion of the Entrepreneurship Mindset Curriculum course in the 3rd and 4th semesters of B.Tech. (EE) (2025 batch onwards), as per the guidelines of IKGPTU Kapurthala and the Government of Punjab.***(Annexure-IV)***

15/5/2026 15.05.2026 S. Ghosh 15/5/20 15/5/2026

6. The BoS members authorized the Chairperson (BOS) for the inclusion of a mandatory Disaster Management course in the 3rd year of B.Tech. Electrical Engineering (EE) (Batch 2025 onwards), as prescribed by the All India Council for Technical Education (AICTE), as per the guidelines and syllabus issued by AICTE / IKGPTU.***(Annexure-V)***
7. The members were apprised regarding the approval of intake for B.Voc. (Electrical Technician) from IKGPTU for the session 2026 onwards. The members appreciated the initiative and recorded the same. ***(Annexure-VI)***
8. The list of supervisors for the dissertation of M.Tech. (Electrical Engineering) for the batch 2024–2026 onwards was presented before the BoS. The members reviewed and approved the proposed list of supervisors. ***(Annexure-VII)***
9. The members of the BoS were apprised of the results of the December 2025 examinations. The overall performance of students was reviewed and discussed. The members suggested continuous monitoring and remedial measures for improving academic performance. ***(Annexure-VIII)***
10. The members were apprised of the academic and co-curricular activities conducted during the session, including:
    a. Major departmental activities/events organized by the department.
    b. Student's achievements in academic and extracurricular activities.
    c. Top performers of the December 2025 session.

    The members appreciated the efforts of the department in organizing various activities for the overall development of students. ***(Annexure-IX)***
11. Under any other agenda item with the permission of the Chair, BoS members discussed following:
    a. The members emphasized strengthening industry-academia interaction, promoting interdisciplinary projects, and encouraging participation in certification programs and internships.
    b. BoS members approved the allocation of M.Tech. supervisor for one student & the synopsis presentation along with finalization of title of dissertation of student.***(Annexure-X)***

The meeting ended with a vote of thanks to the Chair.

15.05.2026

15/5/2026

Member Secretary (BoS)

S. Ghosh
15/5/26

15/5/2026

Chairperson (BoS-EE)

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	Date: 15/05/2026	

Annexure-I

Proceedings 14th BoS Meeting

(held on 11-12-2025)

AMRITSAR GROUP OF COLLEGES NAAC Grade 'A' 3rd Cycle | Autonomous College	**Proceedings** **14th BoS meeting** **Date: 11/12/2025**	**Department of Electrical Engineering**

MINUTES OF THE 14th MEETING OF BOARD OF STUDIES (11th December, 2025)

14th Meeting of Board of Studies in the Department of Electrical Engineering, Amritsar Group of Colleges was held on 11.12.2025(Thursday) at 011:00 am. The following attended the meeting:

1. Dr. Namarta Kad, HoD(EE), AGC Amritsar - in Chair
2. Dr. Dilbag Singh, Professor, NIT Jalandhar - External Expert
3. Dr. Smarajit Ghosh, Professor, TIET, Patiala - External Expert
4. Dr. Akhil Gupta, Assist. Professor, IKGPTU Main Campus, Kapurthala - External Expert
5. Er. Tarsem Lal, Addl. SE., PSPCL, Model Town Division, Ludhiana - Expert from Industry
6. Er. Aviral Soni, Executive Assistant – President Office, Continental Carbon India Private Limited, Ghaziabad (UP) - Alumnus
7. Er. Bimal Kumar, Associate Professor, EE, AGC Amritsar - Member Secretary
8. Dr. Rajneesh Arora, Professor, EE, AGC Amritsar
9. Dr. Narinder Sharma, Professor, EE, AGC Amritsar
10. Er. Atul Mahajan, Associate Professor, EE, AGC Amritsar
11. Er. Guneet Kaur, Associate Professor, EE, AGC Amritsar
12. Er. Chetan Verma, Assistant Professor, EE, AGC Amritsar
13. Er. Sanamdeep Singh, Assistant Professor, EE, AGC Amritsar

Minutes of the meeting are as follows:

1. The Chairperson, Board of Studies, welcomed the members, and the minutes of the 13th meeting of the Board of Studies held on 26th June 2025 were approved, as no further comments or observations were received. **(Annexure-I)**
2. The members of BoS were apprised of offering up to 40% of courses in 4th semester (Batch 2024) and 6th semester (Batch 2023) in online mode through Swayam – NPTEL platform to the students of B.Tech. Electrical Engineering as per guidelines of UGC. **(Annexure-IIa & IIb)**
3. The members of BoS were apprised of the list of External Paper Setter for End Semester Examinations of session 2025 - 2026 for B. Tech and M. Tech Electrical Engineering. **(Annexure-IIIa & IIIb)**
4. The members of BoS were apprised of the list of External Evaluators for End Semester Examinations of session 2025 - 2026 for B. Tech and M. Tech Electrical Engineering. **(Annexure-IV)**
5. The members of BoS were apprised of the results of May-2025 examinations. **(Annexure-V)**
6. The members of BoS were apprised of the following academic and co-curricular activities carried out during the session July-Nov., 2025.
   a. Major activities/events organized by the department.

S. No	Activity Name	Date of Activity	No. of Students Participated
1	Guest Lecture on 'Shift to Plant Based for a Sustainable Future - Introduction to Vegan Lifestyle'	17/07/2025	22
2	Alumni Talk on 'Career after B. Tech. Electrical Engineering'	12/08/2025	32
3	Patriotic Sketch and Singing Competition	14/08/2025	09
4	Guest Lecture on 'Overview on Generative AI and Autonomous Operations'	22/08/2025	34

11/12/2025

5	Seminar on 'Campus to Carrier: Building Confidence & skills for the workplace'	16/09/2025	27
6	Guest Lecture on '3D Printing Revolution'	16/09/2025	38
7	Industrial Visit '132KV S/S Power Colony, Amritsar PSTCL'	03/10/2025	27
8	Badminton Tournament	09/10/2025	30
9	Diwali Celebration	17/10/2025	55
10	Industrial Visit 'Verka Milk Plant, Verka, Amritsar'	29/10/2025	32
11	Alumni Talk on 'Future scope and Job Trends in Electrical Engineering'	24/10/2025	27
12	Guest Lecture on 'Power Sector Scenario in India'	28/10/2025	17

b. Students' Achievements

Sr. No	Name of Students	Batch	Achievements
1	Zahid Ishaq Wani(2000251)	2020 - 2024	Cleared UGC-NET Exam in June 2025
2	Karanbir Singh(1900315)	2019 - 2023	Selected as an Engineer in Bhabha Atomic Research Centre (BARC) India.
3	Sehajpreet Singh(2233761) Kuwarpreet Singh(2233753)	2022 - 2026	Filed a Design Patent titled "Solar Powered Hoverboard Based Floor Cleaner."

Major Project Detail of Batch: 2022–2026 **(Annexure-VI)**

c. Top Performers of session Jan.-May, 2025 in the Department

Sr. No.	Name of Student	Uni. Roll No.	Semester	Score (SGPA)	Position
1	Mastan Singh	2333466	4th / B.Tech.	9.13	1st
2	Hari Narayan	2233751	6th / B.Tech.	7.91	1st
3	Junaid Ahmad	2411506	2nd / M.Tech.	7.67	1st

7. The members of BoS were apprised of the tentative topics of dissertation for M. Tech Batch 2024.

Sr. No.	Name of Student	Uni. Roll No.	Semester	Tentative Dissertation Topic
1	Abdul Qayoom	2411505	3rd	Modelling of a Hybrid Renewable Energy Electric Vehicle Charging Station
2	Amanpreet Kaur	2459410	3rd	Smart Grid Monitoring System
3	Junaid Ahmad Wani	2411506	3rd	Development of Biodegradable Polymer Composites (PLA + Ricehusk) as Eco-friendly Electrical Insulating Materials

11/12/25
Member Secretary (BoS)

11/12/2025
Chairperson (BoS-EE)

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Annexure-II

3rd Semester	B. Tech. (Electrical Engineering)								
Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
		L	T	P	Internal	External		
AGEE - 25301	Applied Mathematics-III	3	1	-	40	60	100	4
AGEE - 25302	Network Analysis and Design	3	1	-	40	60	100	4
AGEE- 25303	Electrical Machines-I	3	1	-	40	60	100	4
AGEE- 25304	Analog Devices and Circuits	3	-	-	40	60	100	3
AGEE - 25305	Electrical Measurement and Instrumentation	3	-	-	40	60	100	3
AGEE- 25306	Electrical Machines Lab.-I	-	-	2	50	0	50	1
AGEE- 25307	Analog Devices and Circuits Lab.	-	-	2	50	0	50	1
AGEE - 25308	Electrical Measurement and Instrumentation Lab.	-	-	2	50	0	50	1
AGEE - 25309	Applied Artificial Intelligence Tools Lab.	-	-	2	50	0	50	1
EMC-102-25	Enterpreneurship (Marketing Basics)	-	-	4	60	40	100	2
AGMC-25001	Indian Constitution	1	-	-	-	-	-	S/US
		16	**3**	**12**	**460**	**340**	**800**	**24**
	Contact Hours=	**31**						

4th Semester	B. Tech. (Electrical Engineering)							
Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
		L	T	P	Internal	External		
AGEE - 25401	Control Systems	3	1	-	40	60	100	4
AGEE - 25402	Electrical Machines-II	3	1	-	40	60	100	4
AGEE - 25403	Power Generation and Economics	3	1	-	40	60	100	4
AGEE - 25404	Digital Logic and Microprocessors	3	1	-	40	60	100	4
AGEE - 25405	Object Oriented Programming System	3	-	-	40	60	100	3
AGEE - 25406	Control Systems Lab.	-	-	2	50	0	50	1
AGEE - 25407	Electrical Machines Lab.-II	-	-	2	50	0	50	1
AGEE - 25408	Digital Logic and Microprocessors Lab.	-	-	2	50	0	50	1
AGEE-25409	Object Oriented Programming System Lab.	-	-	2	50	0	50	1
	Enterpreneurship Mindset Curriculum	-	-	4	60	40	100	2
AGMC-25002	Essence of Indian Knowledge Tradition	1	-	-	-	-	-	S/US
		16	**4**	**12**	**460**	**340**	**800**	**25**
	Contact Hours=	**32**						

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Annexure-II

5th Semester	**B. Tech. (Electrical Engineering)**							
Course code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credit**
		L	**T**	**P**	**Internal**	**External**		
AGEE - 25501	Electrical Power System-I	3	1	-	40	60	100	4
AGEE - 25502	Power Electronics	3	1	-	40	60	100	4
AGEE - 25503	Electrical Power and Utilization	3	1	-	40	60	100	4
AGEE - 25504x	PEC-1	3	-	-	40	60	100	3
	Disaster Management	3	-	-	40	60	100	3
AGEE - 25506	Power Electronics Lab.	-	-	2	50	0	50	1
AGEE - 25507	Electrical: Estimation & Costing Lab.	-	-	2	50	0	50	1
AGEE - 25508	Minor Project-I	-	-	2	50	0	50	1
	Enterpreneurship Mindset Curriculum	-	-	4	60	40	100	2
AGEE - 25509	Summer Training	-	-	-	100	0	100	1
		15	**3**	**10**	**510**	**340**	**850**	**24**
	Contact Hours=	**28**						

6th Semester	**B. Tech. (Electrical Engineering)**							
Course code	**Course Name**	**Load Allocation**			**Marks Distribution**		**Total Marks**	**Credit**
		L	**T**	**P**	**Internal**	**External**		
AGEE - 25601	Electrical Power System-II	3	1	-	40	60	100	4
AGEE - 25602	Advanced Control Systems	3	1	-	40	60	100	4
AGEE - 25603	Signal and Systems	3	-	-	40	60	100	3
AGEE - 25604	Microcontroller, PLC & SCADA	3	-	-	40	60	100	3
AGEE - 25605x	PEC-2	3	-	-	40	60	100	3
AGEE - 25606	Electrical Power System Lab.	-	-	2	50	0	50	1
AGEE- 25607	Microcontroller, PLC & SCADA Lab.	-	-	2	50	0	50	1
AGEE - 25608	Programming in Python	-	-	2	50	0	50	1
AGEE - 25609	Minor Project-II	-	-	2	50	0	50	1
	Enterpreneurship Mindset Curriculum	-	-	4	60	40	100	2
		15	**2**	**12**	**460**	**340**	**800**	**23**
	Contact Hours=	**29**						

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Annexure-II

7th/8th Semester	B. Tech. (Electrical Engineering)							
Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
		L	T	P	Internal	External		
AGEE - 25701	Power System Analysis	3	1	-	40	60	100	4
AGEE - 25702x	PEC-3	3	-	-	40	60	100	3
AGEE - 25703x	PEC-4	3	-	-	40	60	100	3
AGOE - 25704x	Open Elective	3	-	-	40	60	100	3
AGEE - 25705	Power System Analysis Lab.	-	-	2	50	0	50	1
AGEE - 25706	Major Project	-	-	4	100	0	100	2
		12	**1**	**6**	**310**	**240**	**550**	**16**
	Contact Hours=	**19**						

7th/8th Semester	B. Tech. (Electrical Engineering)							
Course code	Course Name	Load Allocation			Marks Distribution		Total Marks	Credit
		L	T	P	Internal	External		
AGEE - 25801	Industrial Training	-	-	-	500	0	500	12
		0	**0**	**0**	**500**	**0**	**500**	**12**
	Contact Hours=	**0**						

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Annexure-II

List of Professional Elective Courses for B. Tech. (Electrical Engineering)

	AGEE - 25504x	AGEE - 25605x	AGEE - 25702x	AGEE - 25703x
x	PEC-1	PEC-2	PEC-3	PEC-4
A	Electromagnetic Fields	Transducers and Sensors	Advances in UHV Transmission and Distribution	Machine Learning and Deep Learning - Fundamentals and Applications
B	Antenna and Wave Propagation	Distributed Generation	Smart Grid: Basics to Advanced Technologies	Introduction to Internet Of Things
C	Power Quality and FACTS	Robotics and Automation	Electrical Energy Conservation & Auditing	Fundamentals of Artificial Intelligence
D	Energy Efficient Machines	Digital Signal Processing	Electrical and Hybrid Vehicles	Basics of Computational Complexity

****Students may obtain relevant credits through MOOCS NPTEL/SWAYAM Courses**

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Annexure-III

B.Tech. (EE)

3rd Semester

3rd Semester	APPLIED MATHEMATICS-III				
AGEE-25301					
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	
CO1	Solve systems of linear equations using matrix methods and analyze diagonalizable and similar matrices.
CO2	Apply hypothesis testing techniques using sampling concepts and statistical distributions.
CO3	Compute and interpret statistical measures and probability distributions for problem-solving.
CO4	Develop Fourier series representations for periodic functions and half-range expansions.
CO5	Apply Laplace transform techniques to solve ordinary differential equations.
CO6	Analyze complex functions using integral theorems, series expansions, and residue methods.

Content	CO
MATRIX ALGEBRA: System of Linear Equation, Gauss Elimination Method, Gauss Jordan Method, Diagonalizable Matrices, Similar Matrices.	CO1
TEST OF SIGNIFICANCE: Sampling and Standard Error, General Concept of Hypothesis and Testing a statistical hypothesis. Test of significance for small samples, t distribution, f-distribution, Chi square test.	CO2
PROBABILITY AND STATISTICS: Mean Median, Mode, Standard Deviation, Correlation and Regression, random variable, discrete and continuous distribution, Binomial Distribution, Poisson Distribution, Normal Distribution.	CO3
FOURIER SERIES: Periodic Function, Euler Formula, Even and Odd Function, Half Range Expansion	CO4
LAPLACE TRANSFORM: Laplace transform of various standard function, properties of Laplace transform, inverse Laplace transform applications to solution of ordinary linear differential equation with constant coefficient.	CO5
FUNCTION OF COMPLEX VARIABLES: Cauchy Residue theorem, poles, residues, Cauchy integral formula, Taylor series, Laurent series, integration of function of complex variables with method of residue.	CO6

References:

(i) S.P. Gupta, Statistical Methods, Sultan Chand & Sons, 33rd Edition, 2005.
(ii) S.C. Gupta and V.K. Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand & Sons, 2014.
(iii) S. Ross, A First Course in Probability, 6th Edition, Pearson Education India, 2002.
(iv) N.P. Bali and Manish Goyal, A Text Book of Engineering Mathematics, Laxmi Publications, Reprint 2010.
(v) Robert V. Hogg, Joseph W. McKean and Allen T. Craig, Introduction to Mathematical Statistics, 7th Edition, Pearson, 2012.
(vi) Grewal B.S. Higher Engineering Mathematics .Eighth Edition, John Wiley, New Delhi.

3rd Semester	NETWORK ANALYSIS AND DESIGN				
AGEE-25302					
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:	
CO1	Apply fundamental circuit laws and network theorems to solve complex DC/AC linear circuits.
CO2	Analyze two-port networks by calculating various parameters.
CO3	Examine the behavior of different electrical circuits using Laplace Transform and the Convolution Theorem.
CO4	Evaluate network functions, pole-zero behavior, and circuit realizability.
CO5	Design and analyze Constant-K, m-derived, and Composite filters.
CO6	Synthesize LC, RC, and RL networks using Foster and Cauer forms.

Content	CO
DC & AC CIRCUIT FUNDAMENTALS: Independent and dependent sources, Loop current and Node voltage equations, Network Theorems: Superposition, Thevenin's, Norton's, Maximum Power Transfer and Telegan Theorem.	CO1
TWO-PORT NETWORK PARAMETERS: Terminal pairs and relationship of variables; Impedance (Z), Admittance (Y), Transmission (ABCD), and Hybrid (h) parameters; Interconnection of two-port networks (Series, Parallel, and Cascade).	CO2
TRANSIENTS & LAPLACE TRANSFORMS: Representation of circuits in generalized frequency; Laplace transform of shifted functions; Transient and steady-state response, Convolution Theorem.	CO3
NETWORK FUNCTIONS & STABILITY: Network functions for one-port and two-port networks, Stability from location of Poles and zeros, Time-domain behavior from pole-zero plots, Realizability conditions for RL, RC, and LC immittance functions.	CO4
PASSIVE FILTER DESIGN: Classification of filters, Characteristic impedance and propagation constants; Design of Constant-k and m-derived filters; T-sections, π-sections, and terminating half-sections, Composite filters.	CO5
NETWORK SYNTHESIS: Synthesis of LC, RC, and RL networks, Foster I and Foster II forms, Cauer I and Cauer II canonical forms.	CO6

References:

(i) Bird John, *Electrical Circuit Theory and Technology*, 2nd Ed., Newnes

(ii) Chakraborty, Abhijit, *Circuit Theory*, 2nd Edition, Dhanpat Rai, 2001

(iii) Chaudhury D. Roy, *Networks & Synthesis*, New Age International.

(iv) Edminister J.A., *Electric Circuits*, 4th Edition, Tata McGraw Hill, 2002

(v) Iyer T.S.K.V., *Circuit Theory*, Tata McGraw Hill, 2006

(vi) Mohan, Sudhakar Sham, *Circuits & Networks Analysis and Synthesis*, 2nd Edition, Tata Mc Graw Hill, 2005

(vii) Van Valkenberg, M.E., *Network Analysis & Synthesis*, PHI learning, 2009 8. Van Valkenberg, M.E., *Network Analysis & Synthesis*, 3rd Edition, Pearson Education, 2006

(viii) http://nptel.ac.in/courses/108102042/

(ix) https://pdfree.org/pdf/downloads/circuit-theory-analysis-and-synthesis-chakrabarti.pdf

3rd Semester	Electrical Machines-I				
AGEE-25303					
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:	
CO1	Illustrate the various concepts related to single phase transformer.
CO2	Analyze the performance of single-phase transformers mathematically.
CO3	Examine the operation and performance of autotransformers.
CO4	Utilize Three-phase transformer's principles and assess their suitability for practical applications.
CO5	Describe the components and working of DC machines.
CO6	Assess the performance of DC machines including AI-based fault diagnosis.

Content	CO
SINGLE PHASE TRANSFORMERS: Types, working principle, construction of single-phase transformer, EMF equation, phasor diagram, Ideal Transformer, Dot Convention, Parallel operation of single-phase transformers and its industrial applications.	CO1
ANALYSIS AND PERFORMANCE: Equivalent circuit, parameters estimation, voltage regulation and efficiency, Testing - open circuit and short circuit tests, back-to-back test, separation of hysteresis and eddy current losses.	CO2
AUTO TRANSFORMERS: Principle of operation, equivalent circuit and phasor diagrams, comparison with two winding transformer and its industrial applications.	CO3
THREE-PHASE TRANSFORMERS: Different types of winding connections, Benefits of different types of transformers: Y-Y, Y-Δ, Δ-Y, Δ-Δ, Open Delta, Parallel operation of three phase transformers, equivalent circuit, Phase Conversion: Scott connections, three phase to six phase conversion, Cooling of Transformer.	CO4
D.C. MACHINES: Basic construction, working principle, Armature windings, E.M.F. and torque equations, armature reaction, effect of brush shift, compensating winding, commutation, causes of bad commutation, methods of improving commutation, methods of excitation.	CO5
D.C. MACHINE-MOTORING AND GENERATION: Motoring and generating mode of operation and their characteristics, starting of shunt, series motor and compound motor, Starters: 3-point and 4-point, speed control methods: field and armature control. Braking: plugging, dynamic and regenerative braking, industrial applications, Testing: Swinburn's test, Hopkinson test, Field test. Losses, efficiency & applications, AI-based fault diagnosis of DC machines.	CO6

References:

(i) Samarjit Ghosh., Electrical Machines, Pearson Education India.
(ii) S.K. Bhattacharya., Electrical Machines, Pearson Education India.
(iii) Del Toro, Electric Machines and Power System, Pearson Education India.
(iv) Fitzgerald A.E., Kingsley C. and Umans S.D., Electric Machinery, 6th Edition, McGraw Hill
(v) Langsdorff E.H., Principles of D.C. machines, McGraw Hill
(vi) Bhimbra P.S., Electrical Machinery, Khanna Publishers.
(vii) Nagrath I.J. and Kothari D.P., Electrical Machines, 4th Edition, Tata McGraw Hill,
(viii) Say M G, Alternating Current Machines, 5th edition, Sir Isaac Pitman & Sons Ltd.
(ix) Electrical Machines Course: http://nptel.ac.in/courses/108105017/
(x) https://sites.google.com/site/eeenotes2u/courses/electrical-machines-1-2
(xi) Yongbo Li, Bing Li, Jinchen Ji, and Hamed Kalhori, Advanced Fault Diagnosis and Health Monitoring Techniques for Complex Engineering Systems, MDPI, 2023

3rd Semester		ANALOG DEVICES AND CIRCUITS			
AGEE-25304					
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:	
CO1	Understand the characteristics and applications of semiconductor diodes.
CO2	Analyze the performance of current components of transistors and about bias stabilization
CO3	Apply small-signal models to determine the low- and high-frequency transistor hybrid models.
CO4	Examine feedback mechanisms and design oscillator circuits based on given specifications.
CO5	Evaluate the performance of differential and operational amplifiers in practical applications.
CO6	Interpret the need of active filters and the role of Artificial Intelligence in semiconductor industry.

Content	CO
SEMICONDUCTOR DIODES: PN junction theory, V-I characteristics, Zener diode as voltage regulator, photodiodes, tunnel diode, and wave shaping circuits such as clipping and clamping.	**CO1**
TRANSISTORS, CHARACTERISTICS AND BIASING: Transistor current components, Operating point, bias stability, stabilization against reverse saturation current, and voltage across base emitter junction and beta, Construction, Characteristics & applications of Junction Field Effect Transistor (JFET), and MOSFET.	**CO2**
LOW & HIGH FREQUENCY TRANSISTOR MODEL: Transistor Hybrid Model, h parameter equivalent circuit of transistor, Analysis of transistor amplifier using h-parameters in CB, CE and CC configuration.	**CO3**
FEEDBACK AMPLIFIERS AND OSCILLATOR: Basics of Class A power amplifier, Class B, Class C, Class AB. Feedback Concept, Effect of negative feedback on gain, bandwidth, stability, distortion and frequency response. Sinusoidal Oscillators, criterion for oscillation, Principle of operation of oscillators: RC Phase Shift, Hartley, Colpitt and Wein bridge oscillator.	**CO4**
OPERATIONAL AMPLIFIERS: Introduction to differential amplifier, ideal Op-Amp, non-idealities in an Op-Amp (output offset voltage, input bias current, input offset current and slew rate, inverting and non-inverting amplifier).	**CO5**
ACTIVE FILTERS AND AI IN SEMICONDUCTORS: Active Filters (Sallen Key, Butterwoth), Single stage active filters, VCOs and timers. Schmitt Trigger, Sample and Hold circuits. Usage of AI in chip design, manufacturing, testing, AI vs Traditional Methods in Semiconductor Design (Comparison of manual design vs AI-assisted design).	**CO6**

References:

(i) Millman & Halkias, *Electronic Devices & Circuits*, Tata McGraw Hill
(ii) Boylestad, *Electronic Devices & Circuit Theory*, Pearson Education
(iii) J. B. Gupta, *Electronic Devices & Circuits*, Katson Publishers
(iv) S. K. Sehdev, *Electronic Devices & Circuits*
(v) https://onlinecourses.nptel.ac.in/noc21_ee80/preview
(vi) https://www.indium.tech/blog/traditional-vs-ai-semiconductor-defect-detection/

3rd Semester	ELECTRICAL MEASUREMENT AND INSTRUMENTATION				
AGEE - 25305					
Internal Marks:	40		L	T	P
External Marks:	60		3	0	0
Total Marks:	100		Credits		3

Course Outcomes: After studying the course, student will be able to	
CO1	Understand the concept of analog measuring tools.
CO2	Analyze the concept of DC and AC potentiometers for measurement and calibration
CO3	Analyze different electrical bridges and their use in measurement applications.
CO4	Analyze magnetic measurement methods and related losses
CO5	Understand digital measuring instruments and their applications
CO6	Understand the phasor diagrams of instrument transformers and their error analysis.

Content	CO
ANALOG INSTRUMENTS: Operating torque, damping & controlling torque, T/W ratio, Pointers & Scales, Principles of operation of various types of electro mechanical indicating/ registering instruments viz. PMMC, PMMI, dynamometer, shunts & multipliers, Energy meter: their sources of error & compensation.	CO1
POTENTIOMETERS: Basic D.C. / A.C potentiometer circuit, Modern form of D.C. potentiometer, Resistance and calibration of Voltmeter & Ammeter using D.C. potentiometer, volt ratio box.	CO2
BRIDGES: Sources and Detectors, General equation for bridge balance, Wheatstone bridge and its sensitivity analysis, Kelvin double bridge, AC bridges, applications and conditions for balance, Maxwell's bridge, Hay's bridge, Schering bridge, Wien bridge, De Sauty's bridge, Anderson Bridge	CO3
MAGNETIC MEASUREMENTS: Flux meter, B-H Curve, Hysteresis loop, iron loss measurement by Wattmeter and Bridge methods.	CO4
DIGITAL INSTRUMENTS: Digital Storage Oscilloscope, Spectrum Analyzer, Digital Frequency Meter, Introduction to Smart Energy Meter. Introduction to Analog and Digital Multimeter.	CO5
INSTRUMENT TRANSFORMERS: Phasor diagrams and construction of current and potential transformers, ratio and phase angle errors and their analysis, Characteristics of current transformers (CT).and potential transformers (PT). and their testing.	CO6

References:

(i) Bell David A., *Electronics Instrumentation and Measurements,* Prentice Hall, India

(ii) Golding Edward William and Widdis Frederick Charles, *Electrical Measurements and Measuring instruments,* Wheelers India

(iii) Helfrick A.D. and Cooper W.D., Modern *Electronic Instrumentation. & Measurement Techniques*, Prentice Hall

(iv) Sawhney A. K., *A Course in Electrical & Electronics Measurement & Inst*rumentation., Dhanpat Rai & Sons.

(v) https://onlinecourses.nptel.ac.in/noc25_ee123/preview

3rd Semester	Electrical Machines Lab.-I			
AGEE-25306				
Internal Marks:	50	L	T	P
		0	0	2
Total Marks:	50	Credits		1

Course Outcomes: After studying the course, students will be able to	
CO1	Analyze the performance parameters of single-phase transformers.
CO2	Understand different transformer operations.
CO3	Understand and evaluate the operation and applications of autotransformers.
CO4	Analyze the performance of D.C. generators and analyze their performance characteristics.
CO5	Evaluate the performance and control methods of D.C. motors.
CO6	Apply simulation tools to analyze the performance of transformers and D.C. machines.

Content	CO
1. To perform Open circuit and short circuit tests on a single-phase transformer and hence find equivalent circuit parameters and efficiency.	CO1
2. To perform parallel operation of two single phase transformers. 3. To perform Scott connections on three phase transformer to get two phase supply.	CO2
4. To study the application & operation of an autotransformer.	CO3
5. (a) To obtain load characteristics of direct current (D.C.) series generator. Also draw its speed – torque characteristics. (b) To obtain load characteristics of direct current (D.C.) shunt generator. Also draw its speed – torque characteristics.	CO4
6. To perform Swinburne's test (no load test) to determine losses of direct current (D.C.) shunt motor. 7. To observe speed control of D.C. motor by field resistance control.	CO5
8. To simulate open-circuit and short-circuit tests on a single-phase transformer and determine equivalent circuit parameters and efficiency. 9. To simulate speed control of a D.C. motor using field resistance method and observe its effect on motor speed.	CO6

References:

(i) Bhimbra P.S., *Electrical Machinery, Khanna Publishers.*
(ii) Nagrath I.J. and Kothari D.P., Electrical Machines, 4th Edition, Tata McGraw Hill,
(iii) Laboratory Manual for Electrical Machines – D. P. Kothari & B. S. Umre.
(iv) Electrical Machines Lab Manual with MATLAB Programs – D. K. Chaturvedi.

3rd Semester	ANALOG DEVICES AND CIRCUITS LAB.			
AGEE-25307				
Internal Marks:	**50**	**L**	**T**	**P**
Total Marks:	**50**	**0**	**0**	**2**
		Credits		**2**

Course Outcomes: After studying the course, students will be able to:	
CO1	Implement and test voltage regulator circuits.
CO2	Analyse transistor current flow characteristics and the frequency response of FET's.
CO3	Evaluate and demonstrate the operation of power amplifiers.
CO4	Analyse the oscillator characteristics.
CO5	Analyse and evaluate the properties of operational amplifiers.
CO6	Analyze and interpret the characteristics of Schmitt triggers and plot responses of active filters.

Content	CO
1. (a) To implement and design a voltage regulator circuit using Zener diode. (b) Voltage regulator using operational amplifier to produce output of 12 V with maximum load current of 50 mA.	**CO1**
2. To analyse the structure of BJT and simulate current flow of the transistor. 3. Simulative analysis of the common source FET Amplifier and obtain its frequency response	**CO2**
4. To analyse the operation of Class A Amplifier. 5. To analyse the operation of CE Amplifier.	**CO3**
6. (a) To analyse the operation of RC Phase shift oscillator. (b) To analyse the operation of Wein bridge oscillator virtually.	**CO4**
7. To analyse the working of function generator using operational amplifier (sine, triangular & square wave). 8. To analyse the inverting and non-inverting properties of operational amplifier.	**CO5**
9. Simulative analysis of an inverting Schmitt Trigger 10. To observe and plot the frequency graph or the phase graph of 1st order active band pass filter.	**CO6**

References:

(i) Millman & Halkias, *Electronic Devices & Circuits*, Tata McGraw Hill
(ii) Boylestad, *Electronic Devices & Circuit Theory*, Pearson Education
(iii) J. B. Gupta, *Electronic Devices & Circuits*, Katson Publishers
(iv) S. K. Sehdev, *Electronic Devices & Circuits*
(v) https://www.vlab.co.in/broad-area-electronics-and-communications

3rd Semester	ELECTRICAL MEASUREMENT AND INSTRUMENTATION LAB.				
AGEE - 25308					
			L	T	P
Internal Marks:	50		0	0	2
Total Marks:	50		Credits		2

Course Outcomes: After studying the course, students will be able to:	
CO1	Apply bridge techniques for measurement of resistance and inductance.
CO2	Analyze frequency and capacitance using AC bridge techniques.
CO3	Operate CRO and Q-meter to measure frequency, phase angle, and quality factor.
CO4	Examine the performance of transducers and insulation testing methods.
CO5	Investigate the characteristics of different sensors and temperature measuring devices.
CO6	Design and develop basic electrical and electronic applications.

Content	CO
1. Measurement of Low Resistance using Kelvin's double bridge. 2. Measurement of Inductance using a bridge technique as well as LCR meter	CO1
3. Measurement of Capacitance by using Schering bridge. 4. Measurement of Frequency using Wein's Bridge	CO2
5. To measure the quality factor and characteristics of coils using Q meter. 6. Determination of frequency and phase angle using CRO	CO3
7. Performance analysis of linear variable differential transducer. 8. Measurement of High resistance and Insulation resistance using Megger	CO4
9. To Study the characteristics of (i) Light measurement using LDR and photo cell sensor (ii) Resistance Temperature Detector (RTD)	CO5
10. Design and develop minor projects using electrical and electronic components	CO6

References:

(i) Electrical and Electronic Measurements and Instrumentation by A. K. Sawhney, Dhan pat Rai & Sons, New Delhi
(ii) Electronic Instrumentation by H. S. Kalsi, McGraw Hill Education (India) Pvt. Ltd.
(iii) Electrical Measurements and Measuring Instruments by E. W. Golding, Pitman / Wheeler Publishing
(iv) Electrical and Electronic Measurements and Instrumentation by S. K. Bhattacharya, Pearson Education India.

3rd Semester	APPLIED ARTIFICIAL INTELLIGENCE TOOLS LAB.				
AGEE-25309					
Internal Marks:	50		L	T	P
			0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO1	Identify and explore different AI tools and their applications.
CO2	Apply AI tools for summarization, communication, and basic data analysis tasks.
CO3	Demonstrate prompt engineering techniques for generating effective AI-based content.
CO4	Create AI-assisted presentations, images, and multimedia content using generative AI tools.
CO5	Analyze speech, text, and video outputs generated through AI-powered multimedia tools
CO6	Design and develop a professional resume and LinkedIn profile using AI-powered tools.

Content	CO
Machine Exercise – 1: Exploring AI Tools in Daily Life and Professional Applications 1. Access different AI tools and explore their interfaces. 2. Use AI tools to perform the following activities: a. Generate study notes using NotebookLM b. Draft an email c. Create a short article d. Prepare a daily planner 3. 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. 4. 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. **Suggested Tools: ChatGPT, Claude AI, Google Gemini and NotebookLM**	CO1
Machine Exercise 2: AI Tools for Analysis and Communication 1. Use AI tools to summarize lengthy articles, reports, research papers, or government schemes and compare the summarized output with the original content. 2. 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. **Suggested Tools: ChatGPT, Claude AI, Google Gemini, NotebookLM and Microsoft Copilot**	CO2
Machine Exercise 3: Prompt Engineering for Smart Content Creation 1. Study the structure of effective prompts and identify the key elements that improve AI-generated responses. 2. Create prompts for applications such as resume summary, invitation letter, presentation outline, and generate outputs using AI tools. 3. Perform Zero-shot and Few-shot prompting on the same topic and compare the quality and accuracy of the generated responses.	CO3

4. 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. 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 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 **Suggested Tools: Canva AI and Gamma AI**	CO4
Machine Exercise – 5: AI Tools for Speech and Video Content Creation 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. **Suggested Tools: Wispr Flow, HeyGen, Elevenlabs and Speechify**	CO5
Machine Exercise – 6: AI-Assisted Resume Building and LinkedIn Profile Optimization 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 **Suggested Tools: ChatGPT, Claude AI, Google Gemini, Microsoft Copilot and LinkedIn**	CO6

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-III

B. Tech. (EE)

4th Semester

4th Semester	CONTROL SYSTEMS			
AGEE - 25401				
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:	
CO1	Understand fundamental concepts of control systems.
CO2	Apply modeling techniques for analysis of control systems.
CO3	Analyze time - domain response and its system stability.
CO4	Evaluate control system behavior using root locus techniques.
CO5	Analyze frequency response and assess system stability.
CO6	Design compensators and evaluate AI - based control performance.

Content	CO
FUNDAMENTAL CONCEPTS: Fundamental concepts of control systems including plant and system representation, Servomechanisms, Regulating systems, Disturbances, Open - loop and closed - loop systems, Classification of linear / nonlinear and time - varying / time - invariant systems, Analysis of continuous and sampled - data control systems.	**CO1**
MODELING: Formulation of equation of linear electrical and mechanical systems, Electrical and mechanical analogies, Transfer function, Block diagram representation, Signal flow graphs and associated algebra, Characteristics equation, P, PI, PD and PID modes of feedback.	**CO2**
TIME DOMAIN ANALYSIS: Typical test - input signals, Transient response of the first and second order systems, Time domain specifications, Dominant closed loop poles of higher order systems, Steady state error and coefficients, Pole - zero location and stability, Routh - hurwitz criterion.	**CO3**
ROOT LOCUS TECHNIQUE: The extreme points of the root loci for positive gain, Asymptotes to the loci, Breakaway points, Intersection with imaginary axis, Location of roots with given gain and sketch of the root locus plot.	**CO4**
FREQUENCY DOMAIN ANALYSIS: Closed loop frequency response, Bode plots, Stability using gain margin, phase margin, gain cross over frequency and phase cross over frequency, Loop transfer function, Frequency response specifications, Relative stability, Relation between time and frequency response for second order systems, Log magnitude versus phase angle plot, Polar plot, Nyquist criterion for stability using gain margin, phase margin, gain cross over frequency and phase cross over frequency.	**CO5**
COMPENSATION: Necessity of compensation, Series and parallel compensation, Compensating networks. AI in control system, Comparison between conventional control and AI - based control.	**CO6**

References:

(i) S. Hasan Saeed "Automatic Control Systems" S. K. Kataria & Sons.
(ii) B. S. Manke, Linear Control Systems with MATLAB Applications, Khanna Publishers, 2012.
(iii) A. Anand Kumar, Control Systems, PHI Learning Pvt. Ltd., 2014.
(iv) Nagrath I. J. and Gopal M., Control System Engineering, Wiley Eastern Ltd.
(v) Ogata K., "Modern Control Engineering", Prentice Hall.
(vi) Kuo B. C., "Automatic Control System", Prentice Hall.
(vii) Dorf Richard C. and Bishop Robert H., Modern Control System, Addison - Wesley, Pearson New Delhi.
(viii) https://www.electrical4u.com/types-of-systems-linear-and-non-linear%20system/.
(ix) https://www.youtube.com/watch?v=7LZSjgZz-Qw&list=PLxn52v8fxX5l5tGzU1NAxRDkgqxK0k5UZ.
(x) https://www.controleng.com/evolution-of-control-systems-with-artificial-intelligence/.

4th Semester	ELECTRICAL MACHINES-II				
AGEE - 25402					
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:	
CO1	Interpret operation and characteristics of three-phase induction machines.
CO2	Assess starting methods, speed control, and test-based performance.
CO3	Differentiate types, operation, and applications of special purpose motors.
CO4	Describe the operation and characteristics of single-phase motors.
CO5	Explain construction and performance of synchronous machines.
CO6	Analyze synchronization, characteristics, losses, and efficiency of synchronous machines.

Content	CO
POLYPHASE INDUCTION MACHINES: Concept of rotating magnetic field, constructional features, concept of slip and operation, rotor frequency, current, power, Starting and maximum torque criterion. Equivalent circuit of induction motor, phasor diagram, torque-slip/speed characteristics, effect of rotor circuit resistance, crawling and cogging, cage motors: double cage and deep bar motor, Generator operation, Self-excitation.	**CO1**
STARTING METHODS AND SPEED CONTROL: Starting methods: DOL starter, Y-Δ Starter, Auto Transformer Starter, speed control: (i) control of speed of rotating field, (ii) control of slip speed. Effect of voltage injection in rotor circuit of slip ring induction motor. No load and Blocked rotor test.	**CO2**
SPECIAL PURPOSE MOTORS: Stepper Motors: Types, construction, principle of operation and applications. Linear Induction Machines: construction, principle of operation and applications. Universal Motor: construction, principle of operation and applications.	**CO3**
SINGLE–PHASE MOTORS: Double revolving field theory, types of single phase motors, Torque –speed characteristics, equivalent circuit and Shaded pole motor: working principle and characteristics.	**CO4**
SYNCHRONOUS MACHINES: Constructional features, cylindrical rotor and salient pole synchronous machine - generated EMF, coil span and distribution factor, equivalent circuit and phasor diagram, armature reaction at different power factor loads, voltage regulation by synchronous impedance and zero power factor method.	**CO5**
PERFORMANCE AND OPERATION: Operating characteristics of synchronous machines, V-curves and inverter-V curves, Hunting, power angle characteristics. Parallel operation of alternators - synchronization and load division, starting of synchronous motors. Types of losses and efficiency calculations of electric machines.	**CO6**

References:

(i) Samarjit Ghosh., Electrical Machines, Pearson Education India.
(ii) S.K. Bhattacharya., Electrical Machines, Pearson Education India.
(iii) Del Toro, Electric Machines and Power System, Pearson Education India.
(iv) Fitzgerald A.E., Kingsley C. and Umans S.D., Electric Machinery, 6th Edition, McGraw Hill
(v) Langsdorff E.H., Principles of A.C. Machines, McGraw Hill
(vi) Nagrath I.J. and Kothari D.P., Electrical Machines, 4th Edition, Tata McGraw Hill
(vii) Bimbhra P.S., Electrical Machinery, Khanna Publishers 5. Say M G, Alternating Current Machines, 5th edition, Sir Isaac pitman & Sons Ltd.
(viii) http://nptel.ac.in/courses/108106072/
(ix) http://nptel.iitg.ernet.in/courses/Elec_Engg/IIT%20Roorkee/Electrical%20Machines%202%20(Video).htm
(x) Garcia-Calva T., Morinigo-Sotelo D., et al., Early Detection of Faults in Induction Motors. https://www.mdpi.com/1996-1073/15/21/7855

4th Semester	POWER GENERATION AND ECONOMICS				
AGEE-25403					
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:	
CO1	Describe power generation systems, single-line diagrams, and load classifications.
CO2	Analyze load characteristics and load curves.
CO3	Describe plant selection criteria and cogeneration systems.
CO4	Explain power plant economics and tariff structures.
CO5	Apply economic dispatch for optimal operation of steam plants.
CO6	Evaluate combined operation, environmental impacts, and AI applications in power systems.

Content	CO
POWER GENERATION: Electrical energy sources, organization of the power sector in India, single-line diagrams of thermal, hydro, nuclear, diesel, gas turbine, solar and wind power plants. Classification of power plants into base load and peak load plants.	**CO1**
LOADS AND LOAD CURVES: Demand factor, group diversity factor, peak diversity factor, types of loads, chronological load curves, load-duration curve, mass curves, energy curve, load factor, capacity factor, utilization factor, effect of load factor on cost of energy, load forecasting.	**CO2**
SELECTION OF PLANT AND COGENERATION: Criteria for the selection of plant location, size, and number of units. Site selection for thermal, hydro, and nuclear power plants. Cogeneration—definition and scope, topping and bottoming cycles, benefits, and cogeneration technologies.	**CO3**
POWER PLANT ECONOMICS AND TARIFF: Capital cost of plants, annual fixed cost, operating costs, depreciation, objectives and types of tariffs for different types of loads. Need for power factor improvement and determination of economic power factor.	**CO4**
ECONOMIC LOAD DISPATCH OF STEAM PLANTS: Methods of loading turbo-generators, input–output curve, heat rate curve, incremental cost curve, method of Lagrangian multiplier, effect of transmission losses, coordination equations, and iterative procedure to solve coordination equations.	**CO5**
COMBINED OPERATION, ENVIRONMENTAL IMPACTS AND AI APPLICATIONS: Advantages of combined operation of power plants. Hydro-thermal coordination—its advantages and scheduling methods. Pollution from power plants: air pollution, aquatic impacts, and impacts of nuclear and hydro plants. Introduction to AI applications in power systems, including load forecasting, economic dispatch, and smart grid optimization.	**CO6**

References:

(i) Deshpande M.V., *Power Plant Engineering,* Tata McGraw Hill (2004).

(ii) Rajput R.K., Power Plant Engineering, Luxmi Publications

(iii) Sharma P.C., *Power Plant Engineering*, Kataria and Sons

(iv) Skrotzki B.G.A. and Vapot W.A., *Power Station Engineering and Economy*, Tata McGraw-Hill

(v) Arora S.C. and Dom Kundwar S., A course in *Power Plant Engineering,* Dhanpat Rai.

(vi) Nag, P.K., *Power Plant Engineering,* Tata McGraw Hill

(vii) Gupta B.R., *Generation of Electrical Energy,* S. Chand (1998).

(viii) Chakrabarti A., Soni, M.L. Gupta P.V. and Bhatanagar U.S., *A Textbook on Power System Engineering,* Dhanpat Rai and Co.

(ix) Singh S. K., Tamrakar S., Mewada S., Gupta A., *Artificial Intelligence Techniques in Power Systems Operations and Analysis,* Routledge, Taylor & Francis Group.

4th Semester	DIGITAL LOGIC AND MICROPROCESSORS				
AGEE-25404					
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:	
CO1	Analyze the Boolean Algebra, Logic gates, and Boolean minimization techniques.
CO2	Design and analyze combinational circuits such as Adders, Subtractors, Mux and Demux.
CO3	Analyze and implement sequential circuits including flip-flops, shift registers, and counters.
CO4	Explain and compare the working principles of D/A and A/D converters.
CO5	Understand the architecture 8085 along with various instructions required in programming.
CO6	Analyze the architecture of the 8086 microprocessor and differentiate it from 8085.

Content	CO
FUNDAMENTALS OF DIGITAL SYSTEMS: Universal Gates, One's and Two's Complement, Boolean theorems, Duality and De-Morgan Theorem, Sum of product and Product of Sum, Maxterm, Minterms, Logical functions using Karnaugh map methods.	**CO1**
COMBINATIONAL CIRCUITS: Multiplexers, Demultiplexers, Implementation of Boolean Expression using Mux and Demux, Using Encoders, Decoders, Adders, Subtractors, Code converters. Bit Comparator.	**CO2**
SEQUENTIAL CIRCUITS: Flip-flops, JK flip-flops, D flip-flops, T flip- flops, SR flip-flops, Registers and Counters: Series and Parallel registers; Synchronous & Asynchronous counters, Ring Counter.	**CO3**
A/D AND D/A CONVERTORS: Weighted register D/A converter, Binary ladder, D/A converter, specifications for D/A converters, Parallel A/D converter, Successive approximation A/D converter, Single & Dual slope A/D converter, Countertype A/D converters.	**CO4**
8085 MICROPROCESSORS: Microprocessor evolution and types, Central Processing Unit (CPU) operation and terminology, Introduction to 8-bit Microprocessor: 8085 Microprocessor architecture, classification of instructions, Instruction format, interrupts and overview of the 8085-instruction set.	**CO5**
8086 MICROPROCESSORS: Introduction to 16-bit Microprocessor: 8086 Internal Architecture and pin configuration, interrupts, differentiation between 8085 and 8086.	**CO6**

References:

(i) R.P. Jain, "Modern digital electronics", 3rd edition, 12th reprint Tata McGraw Hill Publication, 2007.

(ii) Anand Kumar, "Fundamentals of digital circuits" 1st edition, Prentice Hall of India, 2001

(iii) Gaonkar, Ramesh S. Microprocessor Architecture, Programming and Applications with the 8085, Penram International

(iv) Ram B, Fundamentals of Microprocessors and Microcomputers, Dhanpat Rai and Sons,

(v) Hall, Douglas V. Microprocessors and interfacing: Programming and Hardware, Tata McGraw Hill

4th Semester	OBJECT ORIENTED PROGRAMMING SYSTEM				
AGEE-25405					
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:	
CO1	Apply basic C++ concepts, tokens, control structures, and I/O operations to develop programs.
CO2	Implement functions, arrays, structures, and class-based object-oriented concepts.
CO3	Analyze and utilize pointers, constructors, and destructors for efficient memory management.
CO4	Design and develop reusable programs using inheritance and class hierarchies.
CO5	Implement polymorphism using operator overloading and virtual functions.
CO6	Develop robust applications using file handling and exception handling techniques.

Content	CO
INTRODUCTION TO C++: Introduction, Applications, Different Compilers. Basic concepts of object-oriented programming, Concept of an object and a class, implementation of a class, Abstraction, Encapsulation, Data hiding, inheritance, overloading, polymorphism. **TOKENS:** Keywords, Identifier, Constant, Operators, Special characters and strings, control statements- conditional, loop, branch, data types- basic, user, & derived, manipulators, Concept of streams, input/output using overloaded operators >> and << and members functions of I/O stream classes, formatting output.	**CO1**
FUNCTION, ARRAY & STRUCTURE: Types of functions-standard & user-defined, Advantages and disadvantages of using functions, Types of calling, inline function, function overloading, array definition and types, uses, advantages and disadvantages of using array, passing an array to a function. Defining structure, role of structure. **C++ CLASSES, DATA ABSTRACTION:** Specifying a class, creating class objects, accessing class members, access specifiers, empty class, static data members and member functions, use of constant keyword, friend of a class, friend with multiple classes.	**CO2**
POINTER AND CONSTRUCTOR: Declaring and initializing pointers, accessing data through pointers, pointer arithmetic. Definition of constructor, characteristics, need for constructors and destructors, Types of constructors- default, parameterized, default valued, copy constructor, constructor overloading, dynamic constructors, explicit constructor calling and implicit constructor calling, destructors.	**CO3**

INHERITANCE: Defining a class hierarchy, Different forms of inheritance, Defining the Base and Derived classes, Access to the base class members, Base and Derived class construction, Destructors, Virtual base class, Order of execution of constructors and destructors.	**CO4**
POLYMORPHISM: Implications of polymorphic use of classes, Virtual destructors, Overloading different operators in C++.	**CO5**
FILE AND EXCEPTION HANDLING: File streams, hierarchy of file stream classes, error handling during file operations, reading/writing of files, accessing records randomly, updating files, Exception handling in C++.	**CO6**

References:

(i) The Complete Reference C++, 4th Edition, Herbert Schildt, Tata McGraw Hill.
(ii) Learn Programming in C++ for 3rd Edition by Dr. Hardeep Singh, Vikram Sharma, Anurag Gupta & Anshuman Sharma
(iii) Lafore R., Object Oriented Programming in C++, Waite Group.
(iv) E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw Hill.
(v) R. S. Salaria, Mastering Object-Oriented Programming with C++, Salaria Publishing House.
(vi) D. Ravichandran, Programming with C++, McGraw Hill Education.
(vii) Problem solving with C++: The Object of Programming, 4th Edition, Walter Savitch, Pearson Education.

4th Semester	CONTROL SYSTEMS LAB.				
AGEE - 25406					
Internal Marks:	50		L	T	P
			0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO1	Understand synchros and AC servo motor characteristics.
CO2	Apply transfer function modeling and evaluate system performance using PI, PD and PID controllers.
CO3	Analyze time response and evaluate steady - state performance of control systems.
CO4	Analyze and evaluate control system stability using pole - zero plots and root locus techniques.
CO5	Analyze frequency response using bode and nyquist plots.
CO6	Design, simulate, and enhance control systems using simulink and AI - based modeling techniques.

Content	CO
1. To study the synchros transmitter - receiver set and to use it as an error detector. 2. To study the speed - torque characteristics of an AC servo motor and to explore its applications.	CO1
3a) A program to determine the transfer function. 3b) Study the effect of PI, PD and PID controller on system performance.	CO2
4a) Determination of step and impulse response for a second order unity feedback system. 4b) Determination of steady state error analysis of control systems.	CO3
5. To plot pole - zero plot of control systems. 6. To determine the stability using root locus technique.	CO4
7. To find the frequency response using bode plot technique. 8. To determine the stability using nyquist plot.	CO5
9. Design of control systems using Simulink. 10. AI - based modeling and control system applications.	CO6

References:

(i) S. Hasan Saeed "Automatic Control Systems" S. K. Kataria & Sons.
(ii) B. S. Manke, Linear Control Systems with MATLAB Applications, Khanna Publishers, 2012.
(iii) Nagrath I. J. and Gopal M., Control System Engineering, Wiley Eastern Ltd.
(iv) Ogata K., "Modern Control Engineering", Prentice Hall.
(v) Kuo B. C., "Automatic Control System", Prentice Hall.
(vi) https://ce-dei.vlabs.ac.in/exp/second-order-unity-feedback-system/
(vii) https://ce-dei.vlabs.ac.in/exp/to-study-the-effect-of-pi-pd-and-pid-controller-on-a-control-system/simulation.html
(viii) https://bodeplot.aeutlook.com/en/
(ix) https://www.jiscollege.ac.in/ee/pdf/ee-593-lab%20manual-final-control-system-1.pdf

4th Semester	Electrical Machines Lab.-II			
AGEE-25407				
Internal Marks:	50	L	T	P
		0	0	2
Total Marks:	50	Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO1	Perform tests on 3-phase induction motors to analyze their characteristics and parameters
CO2	Perform tests and demonstrate starting and direction control of induction motors.
CO3	Examine speed control methods of three-phase induction motors.
CO4	Perform tests and determine voltage regulation of alternators.
CO5	Plot and analyze V and inverted V curves of synchronous motors.
CO6	Simulate and analyze the performance of three-phase induction motors.

Content	CO
1. a) To perform load-test on three-phase induction motor and to plot its torque versus speed characteristics. b) To perform no-load and blocked–rotor tests on three-phase induction motor and to obtain its equivalent circuit parameters. 2. To start a three-phase slip–ring induction motor by inserting different levels of resistance in the rotor circuit, and to plot its torque –speed characteristics.	CO1
3. a) To perform no-load and blocked–rotor test on single-phase induction motor and to determine the parameters of equivalent circuit. b) To perform load-test on single-phase induction motor and plot its torque-speed characteristics. 4. To start the three-phase induction motor using star- delta starters & to reverse its direction.	CO2
5. To study the speed control of three-phase Induction motor by cascading of two induction motors, i.e. by feeding the slip power of one motor into the other motor. 6. To study the speed control of three-phase induction motor by Kramer's concept.	CO3
7. To perform no load and short circuit test on three-phase alternator and to determine its equivalent circuit parameters. 8. To find voltage regulation of an alternator by zero power factor (ZPF) method.	CO4
9. To plot V and inverted V curves of synchronous motor.	CO5
10. a) Simulation of scalar control-based speed control of induction motor. b) Analysis of Speed–Torque Characteristics of a 3-Phase Induction Motor using Simulink. c) Design and simulation of three phase induction motor at different load conditions.	CO6

References:

(i) Nagrath I.J. and Kothari D.P., Electrical Machines, 4th Edition, Tata McGraw Hill,
(ii) Bimbhra P.S., Electrical Machinery, Khanna Publishers
(iii) Laboratory Manual for Electrical Machines – D. P. Kothari & B. S. Umre.
(iv) Electrical Machines Lab Manual with MATLAB Programs – D. K. Chaturvedi.

4th Semester	DIGITAL LOGIC AND MICROPROCESSORS LAB.				
AGEE – 25408					
Internal Marks:	50		L	T	P
			0	0	2
Total Marks:	50		Credits		2

Course Outcomes: After studying the course, students will be able to	
CO1	Apply basic and universal logic gates to construct circuits and verify their truth tables.
CO2	Design and implement combinational logic circuits such as adders and subtractors.
CO3	Analyze the working of multiplexers and demultiplexers using truth tables.
CO4	Examine and test sequential circuits such as SR, JK, D and T flip-flops.
CO5	Understand the concept of Counters and A/D and D/A Convertor.
CO6	Develop 8085 programs and design digital circuits using simulation and AI-based tools.

Content	CO
1. a) To verify the truth table of Basic Logic Gates b) To design the Basic Gates from Universal Gates.	CO1
2. a) To verify the truth table of Half Subtractor / Full Subtractor Circuit. b) To verify the truth table of Half Adder/ Full Adder Circuit.	CO2
3. a) To verify the truth table of 16:1 Multiplexer. b) To verify the truth table of 1:16 Demultiplexer.	CO3
4. a) To verify the truth table of SR and D flip Flops. b) To verify the truth table of JK and T Flip Flops.	CO4
5. a) To verify the working of Asynchronous Up Counter. b) Design and simulate Analog to Digital converter and Digital to Analog converter.	CO5
6. a) Study of 8085 Microprocessor Kit. b) Write a program to add two 8-bit number using 8085. c) Write a program to add and subtract two 16-bit number using 8085 7. a) Virtual Digital Electronics and Logic Circuit Design b) Digital Logic Circuits with Simulation and AI Tools	CO6

❖ **Apart from the above experiments, students shall develop one application-oriented mini project during this course.**

References:

(i) R.P. Jain, "Modern digital electronics", 3rd edition, 12th reprint Tata McGraw Hill Publication, 2007.
(ii) Anand Kumar, "Fundamentals of digital circuits" 1st edition, Prentice Hall of India, 2001
(iii) Gaonkar, Ramesh S. Microprocessor Architecture, Programming and Applications with the 8085, Penram International
(iv) Ram B, Fundamentals of Microprocessors and Microcomputers, Dhanpat Rai and Sons,
(v) Hall, Douglas V. Microprocessors and interfacing: Programming and Hardware, Tata McGraw Hill
(vi) https://he-coep.vlabs.ac.in/exp/digital-analog-converter/theory.html

4th Semester	OBJECT ORIENTED PROGRAMMING SYSTEM LAB.				
AGEE-25409					
Internal Marks:	50		L	T	P
			0	0	2
Total Marks:	50		Credits		1

Course Outcomes: After studying the course, students will be able to:	
CO1	Apply data types, operators, and control structures to develop basic C++ programs.
CO2	Implement classes, objects, constructors, destructors in program design.
CO3	Design and develop programs using Friend Function, inheritance and constructors for code reusability.
CO4	Analyze and implement operator overloading and runtime polymorphism in C++ programs.
CO5	Apply file handling techniques to store and retrieve data efficiently.
CO6	Evaluate and utilize AI tools for code generation, debugging, and optimization.

Content	CO
1. Use of control structures, functions, arrays and structures.	CO1
2. Implementation of pointers and classes & objects. 3. Implementation of constructors and destructors.	CO2
4. Implementation of friend function. 5. Usage of inheritance and constructors for code reusability	CO3
6. Implement operator overloading and runtime polymorphism in C++ programs	CO4
7. Usage of typecasting, templates and file handling. 8. Handling exceptions in C++.	CO5
9. Use AI tools for Code Generation, Debugging, and Optimization. 10. Compare manual coding with AI Generated code.	CO6

References:

(i) The Complete Reference C++, 4th Edition, Herbert Schildt, Tata McGraw Hill.
(ii) Learn Programming in C++ for 3rd Edition by Dr. Hardeep Singh, Vikram Sharma, Anurag Gupta & Anshuman Sharma
(iii) Lafore R., Object Oriented Programming in C++, Waite Group.
(iv) E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw Hill.
(v) R. S. Salaria, Mastering Object-Oriented Programming with C++, Salaria Publishing House.
(vi) Bjarne Stroustrup, The C++ Programming Language, Addison Wesley.
Problem solving with C++: The Object of Programming, 4th Edition, Walter Savitch, Pearson Education.

Annexure-IV

Semester Snapshot - Semester 2

Entrepreneurship ~~102/201~~ (Marketing Basics) EN2-102-25

Introduction

This semester helps learners understand marketing as a practical life skill - not just "advertising." It teaches them how to communicate value, attract the right customers, and grow something small into something sustainable. Learners explore the basics of customer psychology, messaging, content creation, and simple sales strategies. Through hands-on activities, they will practice real marketing techniques for their micro-hustle or a simulated business idea, learning how to get attention, build trust, and generate sales.

Learners Objective

→ Understand the core concepts of marketing using simple, relatable real-world examples.
→ Learn how customers think, choose, and buy—and how businesses influence decisions ethically.
→ Identify and define a target customer clearly instead of "selling to everyone."
→ Create clear messaging: what they sell, who it helps, and why it matters.
→ Use basic marketing channels (offline + online) to attract customers.
→ Run a simple marketing campaign and measure what worked.
→ Build confidence in selling, promoting, and talking about their product/service.

Outcome

By the end of this semester, learners will be able to market a product/service using basic strategies, attract real customers, and improve their results through feedback and experimentation.

Guiding Principles/Approach

This syllabus is built on action-based learning, clarity-first communication, and customer-first thinking. Learners don't just *study* marketing - they *practice* it in real situations through small experiments and repeated improvement. The course is designed to feel approachable and practical: learners create simple content, test messaging, talk to real people, and observe what influences decisions.

Instead of heavy theory, students build marketing skills through doing: customer discovery, storytelling, channel experiments, and reflection. The curriculum emphasizes confidence-building, ethical marketing, and communication as a leadership skill. By helping learners see results quickly (even small wins like one customer or one inquiry), the program builds motivation, creativity, and real-world business readiness.

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Annexure-V

प्रो. टी. जी. सीताराम
अध्यक्ष
Prof. T. G. Sitharam
FNAE, DGE, FASCE, FICE (UK)
Ph.D. (Univ of Waterloo, Canada), D.Sc
Post Doc (Univ of Texas, @Austin USA)
Chairman

सत्यमेव जयते

अखिल भारतीय तकनीकी शिक्षा परिषद्
(भारत सरकार का एक सांविधिक निकाय)
(शिक्षा मंत्रालय, भारत सरकार)
नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली–110070
दूरभाष : 011–26131498
ई–मेल : chairman@aicte-india.org

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
(A STATUTORY BODY OF THE GOVT. OF INDIA)
(Ministry of Education, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070
Phone : 011-26131498
E-mail : chairman@aicte-india.org

1-29/AICTE/CM/2025/PAP/VCs_Instt/DMP
November 12, 2025

All Principals/Directors/Vice Chancellors
AICTE-Approved Institutions/Universities

Subject: Introduction of Non-Credit Mandatory Course on "Disaster Management and Preparedness" from January 2026 Session in all AICTE approved Institutions.

Dear Sir/Madam,

Greetings from All India Council for Technical Education!

In alignment with the national vision of building a disaster-resilient India and fostering preparedness among youth, the All India Council for Technical Education (AICTE) is pleased to inform that a Non-Credit Mandatory Course (equivalent to 2 credits) titled "Disaster Management and Preparedness" has been developed and approved for implementation across all AICTE-approved institutions/ Universities.

The course has been designed to impart essential knowledge and awareness about disaster risk reduction, management strategies, and community preparedness measures. It will form an integral part of students' holistic education and contribute towards strengthening the nation's capacity to effectively respond to natural and man-made disasters.

All AICTE-approved institutions/Universities are hereby directed to implement this course compulsorily from the January 2026 academic session for all students enrolled in undergraduate programs.

The Model Curriculum and Guidelines for the course will be made available on the AICTE website. Institutions are requested to ensure timely inclusion of this course in their academic schedule and report compliance of the same through the AICTE portal once implemented.

Your cooperation in successfully implementing this important national initiative is highly appreciated.

Thanking you,

Yours sincerely,
T.G. Sitharam
(T.G. Sitharam) 13/11

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Annexure-VII

S.No	Approved Supervisors of M.Tech EE	Designation
1	Dr. Namarta Kad	Professor
2	Er. Bimal Kumar	Associate Prof.
3	Er. Atul Mahajan	Associate Prof.
4	Er. Guneet Kaur	Associate Prof.

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Annexure-VIII

Result Analysis (December,2025 examinations)

B. Tech: 3rd Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21301	Engineering Mathematics-III	46.15
2	AGEE-21302	Network Analysis and Synthesis	32
3	AGEE-21303	Transformers and Direct Current Machines	84
4	AGEE-21304	Semiconductor Devices and Circuits	73.07
5	AGEE-21305	Electrical Measurements and Instrumentation	65.51
6	AGEE-21306	Machine Lab-1	96
7	AGEE-21307	Semi Conductor and Circuits Lab	100
8	AGEE-21308	EMI lab	100
9	AGEE-21309	Institutional Training	100
10	AGFE-21301	Functional English-1	100
11	AGMC-21301	Indian Constitution	96.29

B. Tech: 5th Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21501	Synchronous Machines	86.66
2	AGEE-21502	Electrical Power System-I	92.85
3	AGEE-21503	Power Electronics	78.57
4	AGEE-21504A	Electromagnetic Fields	77.77
5	AGEE-21505	Programming in Python (skill course)	100
6	AGAP-21502	Engineering Aptitude -II	93.75
7	AGEE-21506	Machine Lab-II	100
8	AGEE-21507	Power Electronics lab	100
9	AGEE-21508	Estimation and Costing lab	100
10	AGEE-21509	6-8 Weeks Industrial Training	83.33

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Annexure-VIII

B. Tech: 7th Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21701	Power System Analysis	83
2	AGEE-21702D	Advances in UHV Transmission and Distribution	100
3	AGEE-21702H	Design of Photo Voltaic Systems	75
4	AGEE-21703	Power System Analysis Lab	100
5	AGEE-21704	Project	100
6	AGOE-21709	Management of Human Resources	100

M. Tech: 1st Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	MTEE-101-18	Power System Analysis	100
2	MTEE-102-18	Power System Dynamics-I	100
3	MTEE-103C-18	Renewable Energy Systems	100
4	MTEE-104B-18	Electric Power Distribution System	100
5	MTRM-101-18	Research Methodology and IPR	100
6	MTEE-105-18	Power System Steady State Analysis Lab	100
7	MTEE-106-18	Power System Dynamics Lab	100
8	MTA-104-18	Value Education	100

M. Tech: 3rd Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	MTEE-301D-18	Energy Conservation Processes	100
2	MTEE-302-18	Phase-I Dissertation	100
3	MTEE-301DF-18	Waste to Energy	100

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Annexure-IX

(a) Major activities/events organized by the Department.

S. No	Name of Event	Date (From)	Date (To)	Name of Event Coordinator
1.	Socho India Jago India-Quiz	27-01-2026	27-01-2026	Er. Atul Mahajan
2.	Alumni Talk (Career Guidance & real world industry exposure)	27-01-2026	27-01-2026	Er. Sanamdeep Singh
3.	Alumni Talk (Industrial Automation: Industry Trends and Career opportunities)	30-01-2026	30-01-2026	Er. Sanamdeep Singh
4.	Radio Presentation	13-02-2026	13-02-2026	Er. Atul Mahajan
5.	Alumni Meet 2026	08-02-2026	08-02-2026	Er. Sanamdeep Singh
6.	Guest Lecture on Distribution Systems: Practical View from Industry	12-02-2026	12-02-2026	Er. Guneet Kaur
7.	Industrial Visit OCM	17-02-2026	17-02-2026	Er. Bimal Kumar
8.	Workshop on Arduino +Web Designing	19-02-2026	20-02-2026	Er. Atul Mahajan
9.	MOU signed with GRD Technical Center, Amritsar for B.Voc (ET)	28-02-2026	28-02-2026	Er. Bimal Kumar
10.	Alumni Talk (Pathway to Civil Services UPSC+Others)	16-03-2026	16-03-2026	Er. Sanamdeep Singh
11.	Guest Lecture on The AI premium re-engg. The electrical B.Tech for a high value career	09-04-2026	09-04-2026	Er. Guneet Kaur
12.	Industrial Visit- Madhav KRG-Group Bhadson-Amloh road, Patiala	10-04-2026	10-04-2026	Er. Sanamdeep Singh
13.	Basketball Tournament	17-04-2026	17-04-2026	Er. Atul Mahajan

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Annexure-IX

(b) Student's Achievements

S. No	Name of Students	Achievements
1	Ankit Kumar	Joined Power Grid Corporation of India Limited
2	Sandeep Singh	Joined PSPCL
3	Anuj Narang	Cleared GATE Exam

(c) Top Performers of session July-Nov., 2025 in the Department

S. No	Name of Student	Uni. Roll No.	Semester/ Course	Score (SGPA)	Position
1	Sartaj Singh	2411885	3rd/B.Tech.	7.71	1st
2	Mastan Singh	2333466	5th / B.Tech.	9.00	1st
3	Harmanjit Kaur	2233752	7th / B.Tech.	7.63	1st
4	Harmanpreet Kaur	2550666	1st/M.Tech.	8.67	1st
5	Junaid Ahmad Wani	2411506	3rd / M.Tech.	8.63	1st

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Annexure-X

Allocation of M.Tech. supervisor & the synopsis presentation along with finalization of title of dissertation of student.

Name of Student	Uni. Roll No.	Course	Supervisor	Title of Dissertation
Junaid Ahmad Wani	2411506	M.Tech.	Dr. Namarta Kad	ADVANCED CONTROL ALGORITHM OF DSTATCOM FOR POWER QUALITY ENHANCEMENT IN DISTRIBUTION SYSTEM

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)

Acceptance

of

Minutes of BoS

Dr. Namarta Kad <hod.eee@acetedu.in>

Minutes of the 15th Board of Studies Meeting in Electrical Engineering Department

4 messages

Dr. Namarta Kad <hod.eee@acetedu.in> Thu, May 21, 2026 at 12:11 PM
To: singhd@nitj.ac.in, sghosh@thapar.edu, dr.akhilgupta@ptu.ac.in, Tarsem Lal <tlbains519@gmail.com>

Respected Sir,

I hope this email finds you well.

Please find attached the **minutes of the 15th Board of Studies (BoS) meeting**, held on **15th May 2026** by the **Department of Electrical Engineering**. You are kindly requested to review the document and provide your approval at your earliest convenience.

Looking forward to your confirmation.

Warm Regards

Dr. Namarta Kad
HOD EE
Amritsar Group of Colleges
NAAC (Grade "A") | UGC Autonomous College

M.No.:-+91-9463541369

Website: www.agcamritsar.in

BOS EE.pdf
14475K

Dr Dilbag Singh <singhd@nitj.ac.in> Thu, May 21, 2026 at 12:49 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

Dear Professor,
It is nice to see the incorporation of suggestions diligently. Please go ahead as per your procedures...

With kind regards

Dr. Dilbag Singh
Professor
Dept. of Instrumentation & Control Engineering
Dr. B. R. Ambedkar National Institute of Technology
GT Road-bypass, Jalandhar – 144 008 (Punjab)

Web: http://www.nitj.ac.in/ice/singhd.pdf
Email: singhd@nitj.ac.in, drdilbag@gmail.com
Phone: 098884 92132 (M)

[Quoted text hidden]

SMARAJIT GHOSH <sghosh@thapar.edu> Thu, May 21, 2026 at 3:44 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

I am satisfied with the attached BoS minutes of the meeting.

DR. SMARAJIT GHOSH
Professor
Department of Electrical and Instrumentation Engineering
THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY
PATIALA - 147 004

PUNJAB, INDIA
(+91) 9872710783(M)
E-mail: *smarajitg@hotmail.com*
sghosh@thapar.edu

Residential Address:
House Number - 7
Anand Nagar - A (Extension)
Patiala - 147001
PUNJAB
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Akhil Gupta <dr.akhilgupta@ptu.ac.in> Thu, May 21, 2026 at 4:35 PM
To: "Dr. Namarta Kad" <hod.eee@acetedu.in>

Respected madam

Approved

Thanking you with regards,

Akhil Gupta
Assistant Professor-Electrical Engineering Department (Main campus)
I.K. Gujral Punjab Technical University,
Jalandhar-Kapurthala Highway, VPO-Ibban,
Kapurthala-144603, District Kapurthala, Punjab-India
Mobile No.: 9855041124

Present sitting place: F203, 2nd floor, AB-2 Building

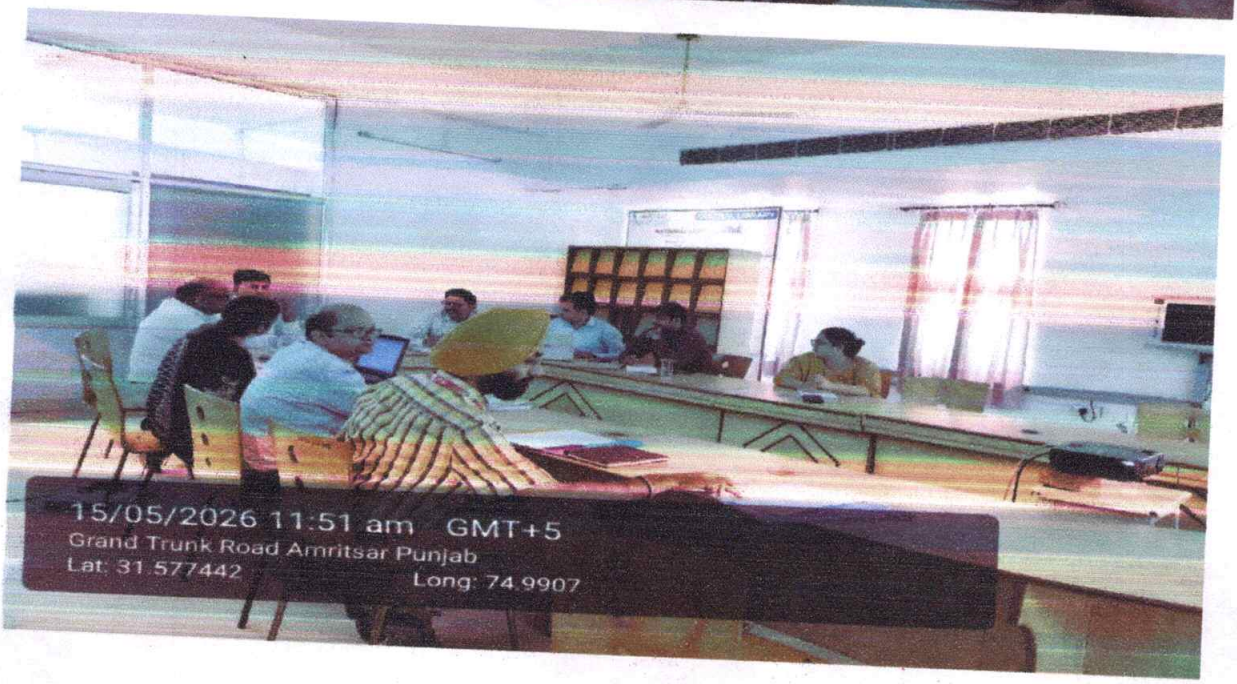
From: Dr. Namarta Kad <hod.eee@acetedu.in>
Sent: Thursday, May 21, 2026 12:11 PM
To: singhd@nitj.ac.in <singhd@nitj.ac.in>; sghosh@thapar.edu <sghosh@thapar.edu>; Akhil Gupta <dr.akhilgupta@ptu.ac.in>; Tarsem Lal <tlbains519@gmail.com>
Subject: Minutes of the 15th Board of Studies Meeting in Electrical Engineering Department

Respected Sir,

[Quoted text hidden]
[Quoted text hidden]

AMRITSAR GROUP OF COLLEGES NAAC Grade "A" 3rd Cycle | Autonomous College under Autonomous Category | (Since 2014) Conferred by UGC	Proceedings 15th BoS meeting	Department of Electrical Engineering
	Date:15/05/2026	

Glimpses




15/05/2026 11:52 am GMT+5
Grand Trunk Road Amritsar Punjab
Lat: 31.577442 Long: 74.9907


15/05/2026 11:52 am GMT+5
Grand Trunk Road Amritsar Punjab
Lat: 31.577442 Long: 74.9907

AMRITSAR GROUP OF COLLEGES

NAAC Grade "A" 3rd Cycle | Autonomous College (Since 2014) Conferred by UGC

under Autonomous Category

Department of Electrical Engineering

15th Board of Studies Meeting
15.05.2026

Dr. Namarta Kad
HOD EE
AGC, Amritsar

AMRITSAR GROUP OF COLLEGES | Agenda 15th BoS meeting | Department of Electrical Engineering

- To welcome the BoS members and confirm the minutes of the 14th BoS meeting.
- To consider and approve offering up to 40% of courses in the 3rd semester (Batch 2025), 5th semester (Batch 2024), and 7th semester (Batch 2023) through the SWAYAM–NPTEL platform for B.Tech. Electrical Engineering students, as per UGC guidelines.
- To review and apprise the study scheme for B.Tech. Electrical Engineering and to finalize the study scheme for the 3rd and 4th semesters for students admitted in 2025 and onwards.
- To review and approve the syllabus and Course Outcomes for 3rd and 4th semesters of B.Tech. Electrical Engineering for Batch 2025 onwards.
- To discuss the inclusion of the Entrepreneurship Mindset Curriculum course in the 3rd and 4th semesters of B.Tech Electrical Engineering applicable from the 2025 batch onwards, as per the guidelines of IK Gujral Punjab Technical University and the Government of Punjab.
- To discuss the inclusion of a mandatory course on Disaster Management, as prescribed by All India Council for Technical Education, to be offered in the 3rd year for B.Tech. Electrical Engineering (Batch 2025 onwards), subject to the availability of guidelines and syllabus from AICTE/IKGPTU
- To apprise the BoS regarding the approval of intake for B.Voc. (Electrical Technician) from IKGPTU for the session 2026 onwards.

DEPARTMENT OF ELECTRICAL ENGINEERING

Welcomes BOS Members on 15th BOS Meeting

AMRITSAR GROUP OF COLLEGES | Agenda 15th BoS meeting | Department of Electrical Engineering

- To apprise and approve the list of supervisors for the dissertation of M.Tech. (Electrical Engineering) for the batch 2024 onwards.
- To apprise the BoS of the results of the December 2025 examinations.
- To apprise the BoS of activities conducted during the session:
  - (a) Major departmental activities/events
  - (b) Students' achievements
  - (c) Top performers (December 2025 session)
- To consider any other agenda item with the permission of the Chair.

AMRITSAR GROUP OF COLLEGES

NAAC Grade "A" 3rd Cycle | Autonomous College

BOS Members of EE

Composition (Members)		
1	Dr. Dilbag Singh, Professor , Department of Instrumentation and Control Engineering, NIT Jalandhar	Member
2	Dr. Sourajit Ghosh, Professor, Department of Electrical and Instrumentation Engineering, TIET, Patiala	Member
3	Dr. Akhil Gupta, Assistant Professor, Department of Electrical Engineering, IKGPTU Main Campus, Kapurthala	Member
4	Er. Tarvesh Lal, Addl. SE., PSPCL, Model Town Division, Ludhiana	Member
5	Er. Harmanpreet Kaur (Alumni)	Member
6	All Faculty Members, Department of EE, AGC Amritsar	Member
7	Er. Bimal Kumar , Associate Professor, Department of EE	Member Secretary
8	Dr. Namarta Kad, Prof. & HoD EE	Chairperson

Sr. No.	Date of Meeting
1	7th August, 2014
2	15th June, 2015
3	14th April, 2016
4	20th April, 2017
5	23rd March, 2018
6	24th April, 2019
7	16th September, 2020
8	1st October, 2021
9	9th June, 2022
10	13th July, 2023
11	20th June, 2024
12	9th January, 2025
13	26th June, 2025
14	11th December, 2025
15	15th May, 2026

AMRITSAR GROUP OF COLLEGES

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

Agenda 1:

To welcome the BoS members and confirm the minutes of the 14th BoS meeting.

5/20/2026

Agenda 2:

To consider and approve offering up to 40% of courses in the 3rd semester (Batch 2025), 5th semester (Batch 2024), and 7th semester (Batch 2023) through the SWAYAM–NPTEL platform for B.Tech. Electrical Engineering students, as per UGC guidelines.

Agenda 3:

To review and apprise the study scheme for B.Tech. Electrical Engineering and to finalize the study scheme for the 3rd and 4th semesters for students admitted in 2025 and onwards.

Agenda 4:

To review and approve the syllabus and course outcomes for 3rd and 4th semesters of B.Tech Electrical Engineering for Batch 2025 onwards.

Agenda 5:

To discuss the inclusion of the Entrepreneurship Mindset Curriculum course in the 3rd and 4th semesters of B.Tech. Electrical Engineering applicable from the 2025 batch onwards, as per the guidelines of IK Gujral Punjab Technical University and the Government of Punjab.

Agenda 6:

To discuss the inclusion of a mandatory course on Disaster Management, as prescribed by All India Council for Technical Education, to be offered in the 3rd year for B.Tech Electrical Engineering (Batch 2025 onwards), subject to the availability of guidelines and syllabus from AICTE/IKGPTU

Agenda 7:

To apprise the BoS regarding the approval of intake for B.Voc. (Electrical Technician) from IKGPTU for the session 2026 onwards.

Agenda 8:

To apprise and approve the list of supervisors for the dissertation of M.Tech. (Electrical Engineering) for the batch 2024–2026 onwards.

S.No.	Approved Supervisors for M.Tech.(EE)	Designation
1	Dr. Namarta Kad	Professor
2	Er. Bimal Kumar	Associate Prof.
3	Er. Atul Mahajan	Associate Prof.
4	Er. Guneet Kaur	Associate Prof.

Agenda 9:

To apprise the BoS of the results of the November 2025 ESE.

Result Analysis (Nov., 2025 ESE)

B.Tech.- 3rd Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21301	Engineering Mathematics-III	46.15
2	AGEE-21302	Network Analysis and Synthesis	32
3	AGEE-21303	Transformers and Direct Current Machines	84
4	AGEE-21304	Semiconductor Devices and Circuits	73.07
5	AGEE-21305	Electrical Measurements and Instrumentation	65.51
6	AGEE-21306	Machine Lab-I	96
7	AGEE-21307	Semi Conductor and Circuits Lab	100
8	AGEE-21308	EMI lab	100
9	AGEE-21309	Institutional Training	100
10	AGFE-21301	Functional English-I	100
11	AGMC-21301	Indian Constitution	96.29

Result Analysis (Nov., 2025 ESE)

B.Tech.- 5th Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21501	Synchronous Machines	86.66
2	AGEE-21502	Electrical Power System-I	92.85
3	AGEE-21503	Power Electronics	78.57
4	AGEE-21504A	Electromagnetic Fields	77.77
5	AGEE-21505	Programming in Python (skill course)	100
6	AGAP-21502	Engineering Aptitude -II	93.75
7	AGEE-21506	Machine Lab-II	100
8	AGEE-21507	Power Electronics lab	100
9	AGEE-21508	Estimation and Costing lab	100
10	AGEE-21509	6-8 Weeks Industrial Training	83.33

Result Analysis (Nov., 2025 ESE)

B.Tech.- 7th Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	AGEE-21701	Power System Analysis	83
2	AGEE-21702D	Advances in UHV Transmission and Distribution	100
3	AGEE-2170211	Design of Photo Voltaic Systems	75
4	AGEE-21703	Power System Analysis Lab	100
5	AGEE-21704	Project	100
6	AGOE-21709	Management of Human Resources	100

Result Analysis (Nov., 2025 ESE)

M.Tech.- 1st Sem.

S No.	Subject Code	Name of Subject	Pass Percentage
1	MTEE-101-18	Power System Analysis	100
2	MTEE-102-18	Power System Dynamics-I	100
3	MTEE-103C-18	Renewable Energy Systems	100
4	MTEE-104B-18	Electric Power Distribution System	100
5	MTRM-101-18	Research Methodology and IPR	100
6	MTEE-105-18	Power System Steady State Analysis Lab	100
7	MTEE-106-18	Power System Dynamics Lab	100
8	MTA-104-18	Value Education	100

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

Result Analysis (Nov., 2025 ESE)

M.Tech - 3rd Sem

S No.	Subject Code	Name of Subject	Pass Percentage
1	MTEE-301D-18	Energy Conservation Processes	100
2	MTEE-302-18	Phase-I Dissertation	100
3	MTEE-301DF-18	Waste to Energy	100

5/20/2026

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

Agenda 10:

To apprise the BoS of activities conducted during the session:

(a) Major departmental activities/events

(b) Students' achievements

(c) Top performers (December 2025 session)

5/20/2026

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

a. Major activities/events organized by the Department.

S. No	Name of Event	Date (From)	Date (To)	Name of Event Coordinator
1.	Socho India Jago India-Quiz	27-01-2026	27-01-2026	Er. Atul Mahajan
2.	Alumni Talk (Career Guidance & real world industry exposure)	27-01-2026	27-01-2026	Er. Sanamdeep Singh
3.	Alumni Talk (Industrial Automation; Industry Trends and Career opportunities)	30-01-2026	30-01-2026	Er. Sanamdeep Singh
4.	Radio Presentation	13-02-2026	13-02-2026	Er. Atul Mahajan
5.	Alumni Meet 2026	08-02-2026	08-02-2026	Er. Sanamdeep Singh
6.	Guest Lecture on Distribution Systems: Practical View from Industry	12-02-2026	12-02-2026	Er. Guneet Kaur
7.	Industrial Visit OCM	17-02-2026	17-02-2026	Er. Bimal Kumar

5/20/2026

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

a. Major activities/events organized by the Department.

S. No	Name of Event	Date (From)	Date (To)	Name of Event Coordinator
8.	Workshop on Arduino +Web Designing	19-02-2026	20-02-2026	Er. Atul Mahajan
9.	MOU signed with GRD Technical Center, Amritsar for B.Voc (ET)	28-02-2026	28-02-2026	Er. Bimal Kumar
10.	Alumni Talk (Pathway to Civil Services UPSC+Others)	16-03-2026	16-03-2026	Er. Sanamdeep Singh
11.	Guest Lecture on The AI premium re-engg. The electrical B.Tech for a high value career	09-04-2026	09-04-2026	Er. Guneet Kaur
12.	Industrial Visit- Madhav KRG-Group Bhadson-Amloh road, Patiala	10-04-2026	10-04-2026	Er. Sanamdeep Singh
13.	Basketball Tournament	17-04-2026	17-04-2026	Er. Atul Mahajan

5/20/2026

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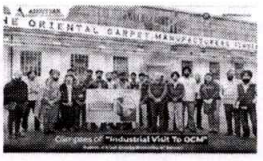
Glimpses of Industrial Visit– Jan-May. 2026

Industrial Visit- Madhav KRG-Group Bhadson-Amloh road, Patiala



Industrial Visit OCM

5/20/2026

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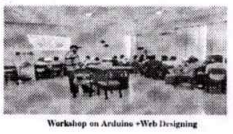
Glimpses of Techno Spark Society Events– Jan-May. 2026

Radio Presentation



Workshop on Arduino +Web Designing

Socho India Jago India-Quiz

Basketball Tournament

25

Glimpses of Alumni Talk and Guest Lecture– Jan-May. 2026

Guest Lecture on Distribution Systems: Practical View from Industry

Alumni Talk (Pathway to Civil Services UPSC+Others)

Guest Lecture on The AI premium re-engg. The electrical B.Tech for a high value career

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

c. Top Performers of session July-Nov., 2025 in the Department

Sr. No.	Name of Student	Uni. Roll No.	Semester/ Course	Score (SGPA)	Position
1	Sartaj Singh	2411885	3rd/B.Tech.	7.71	1st
2	Mastan Singh	2333466	5th / B.Tech.	9.00	1st
3	Harmanjit Kaur	2233752	7th / B.Tech.	7.63	1st
4	Harmanpreet Kaur	2550666	1st/M.Tech.	8.67	1st
5	Junaid Ahmad Wani	2411506	3rd / M.Tech.	8.63	1st

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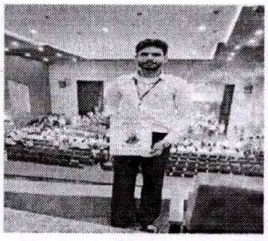
AMRITSAR GROUP OF COLLEGES | 14th BoS meeting | Department of Electrical Engineering

b. Students' Achievements



Sandeep Singh B.Tech. EE (8th Sem) selected in PSPCL

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AMRITSAR GROUP OF COLLEGES | 15th BoS meeting | Department of Electrical Engineering

Agenda 11:

To consider any other agenda item with the permission of the Chair.

- Allocation of M.Tech. supervisor & the synopsis presentation along with finalization of title of dissertation of student.

Name of Student	Uni. Roll No.	Course	Supervisor	Title of Dissertation
Junaid Ahmad Wani	2411506	M.Tech.	Dr. Namarta Kad	ADVANCED CONTROL ALGORITHM OF DSTATCOM FOR POWER QUALITY ENHANCEMENT IN DISTRIBUTION SYSTEM

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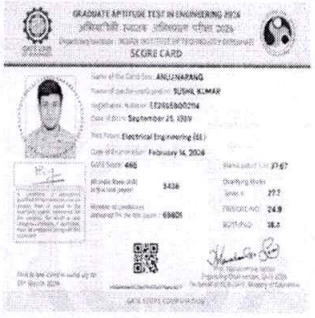

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THANK YOU……!!!!!

Amritsar Group of Colleges, Amritsar

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade

Formerly known as

Amritsar College of Engineering & Technology | Amritsar Pharmacy College

Honorarium/TA / DA Bill

Name Dilbag Singh Designation Professor Basic Pay Rs. 206700/-

Purpose of Journey BoS Meeting Electrical Engg.

Journey From (NIT) Jalandhar City To ACET Amritsar

Date of Departure from Resi/ACET 15-5-26 Time 9:00 AM

Date of Arrival at Resi/ACET 15-5-26 Time of Arrival 11:00 AM

Total Days of Journey/Visit 01

Daily Allowance for 01 day/s @ Rs. 4000 per day Rs. 4000/-

Total kms if journey undertaken in own car (if eligible to do so) 59+59

Total Amount claimed @ Rs 20 per km Rs. 2360/-

Bus / Railway Fare (if journey not undertaken in college conveyance)

A. [UP] From — To — Rs. —

B. [Down] From — To — Rs. —

Honorarium (If any) Rs. —

Local Conveyance Rs. —

Toll Tax(attach Slip) (70+65)X2 Rs. 270-00

Total Amount Rs. 6630/-

Journey Verified

Head
Deptt. of Electrical Engineering,
Amritsar Group of Colleges,
Amritsar.
15/5/26

(Signatures & Designation)

(Signature)

Dated 15/5/2026

For Accounts Branch

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

Registrar

Payment Approved

Principal

Dilbag Singh
S/B. Acc No. 29451010006 43
IFSC: CNRB 000 2945
Canara Bank, NIT Jalandhar

Amritsar Group of Colleges, Amritsar

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Honorarium/TA / DA Bill

Name SMARAJIT GHOSH Designation PROF. Basic Pay Rs. 114

Purpose of Journey BOS Meeting (ACE)

Journey From Patiala (Thapar) To ACET Campus

Date of Departure from Resi/ACET 15-5-2026 Time 7:15 AM

Date of Arrival at Resi/ACET 15-5-2026 Time of Arrival 10:50 AM

Total Days of Journey/Visit 01

Daily Allowance for 01 day/s @ Rs. 4000 per day Rs. 4000/-

Total kms if journey undertaken in own car (if eligible to do so) 223 + 223 = 446

Total Amount claimed @ Rs 20 per km 450 x 20 Rs. 9000/-

Bus / Railway Fare (if journey not undertaken in college conveyance)

A. [UP] From — To — Rs. —

B. [Down] From — To — Rs. —

Honorarium (If any) Rs. —

Local Conveyance Rs. —

Toll Tax(attach Slip) (340 + 110 + 115). Rs. 565

Total Amount Rs. 13,565/-

Journey Verified

15/5/26

Head,
Deptt. of Electrical Engineering,
Amritsar Group of Colleges,
Amritsar.

(Signatures & Designation)

S. Ghosh

(Signature)

Dated 15/5/2026

For Accounts Branch

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

Registrar

Payment Approved

Principal

SBI

Savings A/c : 65024327197

SBIN0050244

TIFR Branch

Amritsar Group of Colleges, Amritsar

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Formerly known as

Amritsar College of Engineering & Technology | Amritsar Pharmacy College

Honorarium/TA / DA Bill

Name DR. AKHIL GUPTA Designation AP/EE Basic Pay Rs. 78,209/-

Purpose of Journey To attend the BOS-EE meeting on 15.05.2026

Journey From IKGPTU, Jalandhar. To ACET, Amritsar.

Date of Departure from Resi/ACET 15.05.2026. Time 2:30 pm.

Date of Arrival at Resi/ACET 15.05.2026 Time of Arrival 5:00 pm.

Total Days of Journey/Visit 01.

Daily Allowance for 01 day/s @ Rs. 4000 per day Rs. 4000/-

Total kms if journey undertaken in own car (if eligible to do so) 80×2=160.

Total Amount claimed @ Rs 16 per km 160×16 Rs. 2560/-

Bus / Railway Fare (if journey not undertaken in college conveyance)

A. [UP] From — To — Rs. —

B. [Down] From — To — Rs. —

Honorarium (If any) Rs. —

Local Conveyance Rs. —

Toll Tax(attach Slip) (110+115) Rs. 225

Total Amount Rs. 6785/-

Journey Verified

Head,
Department of Electrical Engineering,
Amritsar Group of Colleges,
Amritsar.

15/5/26

(Signatures & Designation)

(Signature)

Dated 15.05.2026.

For Accounts Branch

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

Registrar

Payment Approved

Principal

AKHIL GUPTA
HDFC BANK
A/c No. :- 50100120325972.
IFSC Code:- HDFC0000798.

AMRITSAR GROUP OF COLLEGES

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(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

Catering Request Form

Date: 06-05-2025

Catering Date: 15.05.2025	Breakfast/Afternoon Tea/ Lunch/ Hi-Tea/ Dinner:	
Start Time: 10.30 AM	End Time: 02.30 PM	
Total No. of pax attending: 08	No. of Internal pax: 03	No. of External Pax: 05
Event: BOS MEETING	Venue: SWAGATAM	
Name of the Event Coordinator: Mr Bimal Sharma	Department Organizing: EE	Mob: 9815511810
Email:	Name & Contact No. (Supporting Staff):	

Particulars	
Tea n Snacks	
Sandwich	
Tea	
Cookies	
Mix veg	
Dal Makhani	
Kadhai Paneer	
Raita	
Peas Pulao, Ice cream	Approx cost - 2600/-

HOD 06/05/2026

Principal

Request Instructions:

1. The request should be placed at least one day in advance and before 11am.
2. All the above signatures are mandatory.
3. From the stated number of persons attending only an increase of 5% will be accommodated at the last hour.
4. Please send the above form duly signed to the Department of Hotel Management in either hard or soft format.

Cc: OSD