



BABA FARID COLLEGE OF ENGG. & TECHNOLOGY

Analysis of Circuits using Multisim

Name of the Program	Duration	Documents (Topic Covered in report is Curriculum)	Page No.
Analysis of Circuits using Multisim	32 Hours	List of the students enrolled(with signature of students)	1
		Model certificates	2-4
		Reports showing assessment procedures and Curriculum	5-7

***Topic Covered in report is Curriculum**

Baba Farid College of Engineering and Technology (Attendance Register)
 Teacher Name: Er. Shilpy Goyal
 Subject: Analysis of Circuit using Multisim (CCACM-03) (Lab)
 Program: B.Tech-EE, Semester 4th (Group_1,2)
 Session: 2021-22 (EVEN Semester)

S.No.	Student Name	UID	16-Mar-22	18-Mar-22	23-Mar-22	25-Mar-22	30-Mar-22	01-Apr-22	06-Apr-22	08-Apr-22	13-Apr-22	15-Apr-22	22-Apr-22	27-Apr-22	29-Apr-22	04-May-22	06-May-22	18-May-22	20-May-22	24-May-22	27-May-22	Total lecture	Classes attended	Student signature
1	Amundeh Singh	2076002	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Arun
2	Harsh singla	2076003	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	38	28	Harsh singla
3	Harsimran Singh	2076004	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	26	Harsh singla
4	Sachin Kumar	2076005	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Sachin
5	Amit kumar	2076006	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	38	32	Amit
6	RAJAN BAJAJ	2076007	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Rajan
7	Arshdeep Singh	2076008	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	38	Arshdeep
8	Arshdeep kaur	2076009	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Arshdeep
9	Rishi	2076010	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Rishi
10	Maninder Mehra	2076011	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	10	Maninder
11	Nannak Chand	2076013	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	10	Nannak Chand
12	Harpreet Singh	2076015	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	Harpreet
13	Davinder Singh	2076016	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Davinder
14	Sukhchain Singh	2076018	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Sukhchain
15	Yograj singh	2076020	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Yograj
16	Jaspreet Singh	2076022	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Jaspreet
17	Shweta shukla	2076024	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	38	28	Shweta
18	Arshpreet Singh	2076025	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	38	28	Arshpreet
19	Dishant	2076026	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Dishant
20	Lovepreet singh	2076028	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Lovepreet
21	Umar mushiq	2076033	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Umar
22	Dinesh Kumar	2076035	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Dinesh
23	Varinder parter singh	2076037	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	32	Varinder
24	Fahcen Saied Redu	2076038	PRESENT	ABSENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Fahcen
25	Manpreet kaur	2076039	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	Manpreet
26	Dilpreet singh	2076040	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Dilpreet
27	Yasir Ahmad Padder	2076041	PRESENT	ABSENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Yasir
28	Amritpal singh	2076042	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Amritpal
29	Mamisha	2076043	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Mamisha
30	Aashish Pal	2076044	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Aashish
31	Harkirat Singh	2076045	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	Harkirat
32	TEJINDERPAL SINGH	2076046	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Tejinderpal
33	Veenjvinder ram	2076047	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Veenjvinder
34	Naveed singh	2076048	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	6	Naveed
35	Mahavir	2076049	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Mahavir
36	Bhupinder singh	2076050	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Bhupinder
37	Vikash Kumar	2076051	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	Vikash
38	Sahil mi	2076052	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Sahil
39	Jaswinder singh	2076053	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	Jaswinder
40	Zakir Nazeer	2076056	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Zakir
41	Raman Kumar	2076059	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	Raman
42	Saklajn Bushir	2076060	PRESENT	ABSENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Saklajn
43	Chhudeep Singh	2076061	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	Chhudeep
44	Towheed Lateef malik	2076062	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Towheed
45	Junaid Jamal shah pir	2076063	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	Junaid
46	Iqbal	2076065	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	24	Iqbal
47	Nadeem Ahmad Iona	2076066	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	Nadeem

Shilpy

BABA FARID COLLEGE OF ENGINEERING AND TECHNOLOGY

Muktsar Road, Bathinda, Punjab (India)

(Approved by AICTE & Affiliated to Maharaja Ranjit Singh Punjab Technical University, Bathinda)

CERTIFICATE OF COMPLETION

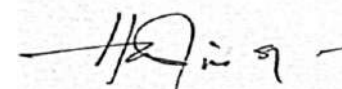
This is to certify that Ms./Mr. Amandeep Singh UID 2007602 Program **B.Tech Electrical Engineering, Semester 4th** has successfully completed certificate course on “**Analysis of Circuits using MultiSim**” which was organized by Department of Electrical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (EVEN Semester).



Er. Shilpi Goyal
Course Coordinator
Department of EE

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Er. Harsimran Singh
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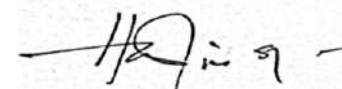
This is to certify that Ms./Mr. Harsh Singla UID 2076003 Program **B.Tech Electrical Engineering, Semester 4th** has successfully completed certificate course on “**Analysis of Circuits using MultiSim**” which was organized by Department of Electrical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (EVEN Semester).



Er. Shilpi Goyal
Course Coordinator
Department of EE

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Er. Harsimran Singh
Head
Department of EE

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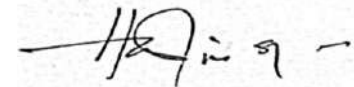
This is to certify that Ms./Mr. Harsimran Singh UID 2076004 Program **B.Tech Electrical Engineering, Semester 4th** has successfully completed certificate course on “**Analysis of Circuits using MultiSim**” which was organized by Department of Electrical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (EVEN Semester).



Er. Shilpi Goyal
Course Coordinator
Department of EE

**BABA FARID
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Bathinda, Punjab(India)



Er. Harsimran Singh
Head
Department of EE



Report on Analysis of Circuits using Multi Sim

Eligible Students: B.Tech 4thSemester

Date: 16/03/2022 to 27/05/2022

Duration of Course: 32 Hours

Course Code: CCACM-03

No. of students Enrolled: 47

Timing: 1:50 PM to 3:20 PM

Days: Wednesday & Friday

Course Coordinator: Er. Shilpy Goyal, Assistant Professor (EE)

Analysis of Circuits using Multi Sim course conducted during the session 2021-22 for B.Tech. students. It was a comprehensive program aimed for providing a strong foundation in Analysis of Circuits using Multi Sim. The course duration was 32 hours, where out of 47 enrolled students, 43 successfully completed the course.

Multisim TM is a popular electrical circuit simulation package that allows users to create simple schematics and run basic simulations. It explores the distinctions between virtual, real, and 3D components, as well as the use of virtual instruments for simulated measurements. While the appearance of windows, menus, and dialogue boxes may vary depending on the version of Multisim used, the functionality remains consistent. Engineers, students, and professors can utilize Multisim to simulate electronic circuits, prototype PCBs, and perform schematic capture. This article focuses on capturing, simulating, and laying out a design using Multisim, using an example circuit of an amplifier. The circuit involves an operational amplifier and passive resistor components to create a feedback network and provide gain.

Teaching Pedagogy:

The teaching pedagogy for the MultisimTM course on electrical circuit simulation and design focused on providing a practical learning experience for students. The course introduced students to Multisim through interactive lectures and hands-on practice, where they created and simulated relevant electrical circuits. They explored the distinctions



between virtual and real components, learned circuit design and analysis techniques, and engaged in project-based assignments. Regular assessments and feedback sessions were conducted to monitor progress. The course emphasized real-world applications of Multisim in fields like electronics design. By following this pedagogy, students developed practical skills in circuit simulation, problem-solving abilities, and a solid understanding of utilizing Multisim effectively for electrical circuit design.

Topics covered:

Module 1: Introduction to Multisim software, including toolbars, menus, and library installation.

Module 2: Multisim Library usage, creating new libraries, and component exploration.

Module 3: Analysis of DC networks using Kirchhoff's laws and writing equations for branch currents and voltages.

Module 4: Application of Thevenin's theorem to determine equivalent circuit parameters.

Module 5: Calculation and interpretation of impedance (Z) and admittance (Y) parameters.

Module 6: Understanding and application of ABCD parameters and their inverse in two-port network analysis. Students gain a comprehensive understanding of Multisim, library functionality, circuit analysis techniques, and network parameters.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

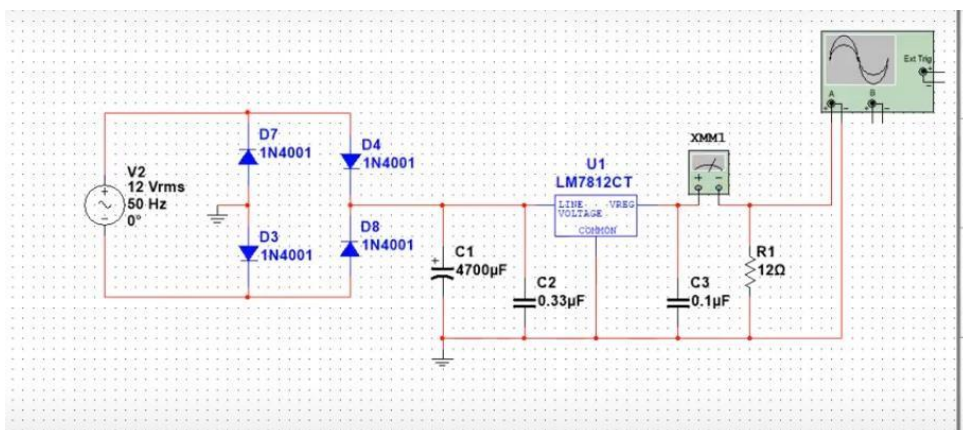
4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

This course has enabled students to understand about basic NI-Multisim. After completion of the course the students will get know about:

1. Acquired knowledge about electrical systems and their applications.
2. Developed an understanding of parameters and how to calculate them.
3. Learned to draw multisim networks.
4. Explored the role of electrical systems in the industry.
5. Successfully completed the "12V Power Supply in NI Multisim Simulator" project, designing and simulating a 12V power supply circuit using NI Multisim software.



Screenshots of project 12V Power Supply in NI Multisim Simulator