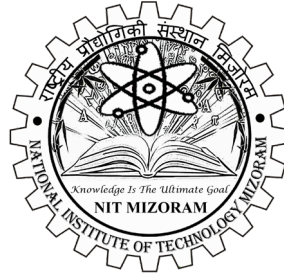


राष्ट्रीय प्रौद्योगिकी संस्थान मिजोरम

NATIONAL INSTITUTE OF TECHNOLOGY MIZORAM

(An Institute of National Importance under Ministry of Education, Govt. of India)

CHALTLANG, AIZAWL, MIZORAM – 796012



**Course Structure & Syllabus for
Minor in VLSI and Semiconductor Technology**

**for existing BTech in ECE and BTech in CSE
ACADEMIC SESSION: 2023-24 onwards**

**अंतःविषय अनुसंधान केंद्र
CENTER OF INTERDISCIPLINARY RESEARCH (CIR)**

Course Structure & Syllabus for Minor in VLSI and Semiconductor Technology

Classification of Credits Points:

1 Hr Lecture (L) per week	1.0 Credit	1 Hr Tutorial (T) per week	1.0 Credit
1 Hr Laboratory (P) per week	0.5 Credit	AUDIT Course	NO Credit

Course Code	Course Name	Category	L-T-P	Credit
CIRL 1X01	Compound Semiconductors	DC	3-0-0	3
CIRL 1X02	VLSI Technology	DC	3-0-0	3
CIRL 1X03	Physics of Semiconductor Devices	DC	3-0-0	3
CIRL 1X04	Analog VLSI Circuits	DC	3-0-0	3
CIRL 1XXX	Program Elective – I	DE	3-0-0	3
CIRL 1XXX	Program Elective – II	DE	3-0-0	3
CIRL 1XXX	Program Elective – III	DE	3-0-0	3
CIRL 1XXX	Program Elective – IV	DE	3-0-0	3
CIRP 1X01/ CIRP 1X02	Analog VLSI Laboratory / VLSI Design Laboratory	DC	0-0-2	1
CIRP 1X03	VLSI Device Modelling Laboratory	DC	0-0-2	1
TOTAL			24-0-4	26

PROGRAM ELECTIVES

Sl. No.	Course Code	Course Name
1	CIRL 1X05	VLSI Physical Design
2	CIRL 1X06	Semiconductor Device Modelling
3	CIRL 1X07	VLSI DSP
4	CIRL 1X08	Low power VLSI Design
5	CIRL 1X09	VHDL Modelling
6	CIRL 1X10	Mixed Signal VLSI
7	CIRL 1X11	Semiconductor Materials and Systems
8	CIRL 1X12	Semiconductor Optoelectronics: Theory and Design
9	CIRL 1X13	Digital VLSI Circuits
10	CIRL 1X14	Testing and Verification approaches in VLSI
11	CIRL 1X15	RF Integrated Circuits

CORE COURSES

CIRL 1X05	Compound Semiconductors	
L-T-P: 3-0-0		Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 4101.		

CIRL 1X02	VLSI Technology	
L-T-P: 3-0-0		Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2202.		

CIRL 1X03	Physics of Semiconductor Devices	
L-T-P: 3-0-0		Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 1X16.		

CIRL 1X04	Analog VLSI Circuits	
L-T-P: 3-0-0		Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2102.		

CIRP 1X01	Analog VLSI Laboratory	
L-T-P: 0-0-2		Credits: 1
As per the syllabus of ECP 2101.		

CIRP 1X02	VLSI Design Laboratory	
L-T-P: 0-0-2		Credits: 1
As per the syllabus of ECP 1603.		

CIRP 1X03	VLSI Device Modelling Laboratory	
L-T-P: 0-0-3		Credits: 1
As per the syllabus of ECP 2202.		

Program Elective(s)

CIRL 1X01	VLSI Physical Design
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2201.	

CIRL 1X06	Semiconductor Device Modelling
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2104.	

CIRL 1X07	VLSI DSP
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2X04.	

CIRL 1X08	Low power VLSI Design
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 1X08.	

CIRL 1X09	VHDL Modelling
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 1X18.	

CIRL 1X10	Mixed Signal VLSI
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2X01.	

CIRL 1X11	Semiconductor Materials and Systems
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 1X21.	

CIRL 1X12	Semiconductor Optoelectronics: Theory and Design
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 4XXX.	

CIRL 1X13	Digital VLSI Circuits
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2103.	

CIRL 1X14	Testing and Verification approaches in VLSI
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2X05.	

CIRL 1X15	RF and Integrated Circuits
L-T-P: 3-0-0	Credits: 3
As per the syllabus prescribed by Dept. of Electronics and Communication Engineering of ECL 2X07.	