

# **IKG Punjab Technical University**

**Syllabus (3<sup>rd</sup>-8<sup>th</sup> Semester)**

**for**

**Undergraduate Degree Programme**



**Bachelor of Technology**

**Artificial Intelligence & Machine  
Learning**

**DEPARTMENT OF ELECTRONICS  
AND COMMUNICATION  
ENGINEERING**

**Scheme & Syllabus  
2022 & onwards**

**Structure of Distribution of credits Artificial Intelligence & Machine Learning Program as per AICTE Model Curriculum:**

Sr. No.	Category	Suggested Breakup of Credits (Total 160)
1	Humanities and Social Science including Management courses	12*
2	Basic Sciences courses	25*
3	Engineering Science courses-including workshop, drawing, basics of electrical/mechanical/computer etc.	24*
4	Professional Core courses	48*
5	Professional Elective courses relevant to chosen specialization/branch	18*
6	Open subjects - Electives from other technical and/or emerging subjects	18*
7	Project Work, Seminar and Internship in Industry or elsewhere	15*
8	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)
	Total	160*

*\*Minor Variation is allowed as per need of the respective disciplines.*

B.Tech. Artificial Intelligence & Machine Learning Study Scheme and Syllabus 2022 and onwards  
 Department of Electronics and Communication Engineering, Main Campus, IKGPTU Kapurthala

Semester III [Second year]										
Branch/Course: Artificial Intelligence & Machine Learning										
Sr. No.	Course code	Course Title	L	T	P	Hrs	Internal Marks	External Marks	Total	Credits
1	AIML-301-22	Introduction to Artificial Intelligence and Machine Learning	3	0	0	3	40	60	100	3
2	AIML-302-22	Random Variables and Stochastic Processes	3	1	0	3	40	60	100	4
3	AIML-303-22	Digital System Design	3	0	0	3	40	60	100	3
4	AIML-304-22	Data Structures	3	1	0	4	40	60	100	4
5	BTAMXXX18	Object Oriented Programming using C++	3	0	0	3	40	60	100	3
6	AIML-311-22	Data Structures Laboratory	0	0	2	2	30	20	50	1
7	AIML-312-22	Digital System Design Laboratory	0	0	2	2	30	20	50	1
8	AIML-313-22	Object Oriented Programming using C++ Laboratory	0	0	2	2	30	20	50	1
9	HSMC101-18 /HSMC102-18*	Foundational Course in Humanities (Development of Societies or Philosophy)	3	0	0	3	40	60	100	3
10	AIML-321-18	4-Week Institutional Training	0	0	4	4	60	40	100	2
11	BMPD-331-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory			Non-credit	
<b>Total</b>			<b>18</b>	<b>2</b>	<b>12</b>	<b>29</b>	<b>360</b>	<b>440</b>	<b>800</b>	<b>25</b>

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Semester IV [Second year]										
Branch/Course: Artificial Intelligence & Machine Learning										
Sr. No.	Course code	Course Title	L	T	P	Hrs	Internal Marks	External Marks	Total Marks	Credits
1	AIML-401-22	Data Communication and Networks	3	0	0	3	40	60	100	3
2	AIML-402-22	Database Management Systems	3	0	0	3	40	60	100	3
3	AIML-403-22	Python Programming and Data Analysis	3	0	0	3	40	60	100	3
4	AIML-404-22	Signals and Systems	3	0	0	3	40	60	100	3
5	AIML-405-22	Unsupervised Learning	3	0	0	3	40	60	100	3
6	HSMC-122-18	Universal Human Values – 2: Understanding Harmony	3	0	0	3	40	60	100	3
7	EVS-201-18	Mandatory Course- Environmental Sciences	3	0	0	3	40	60	100	Non-credit
8	AIML-411-22	Data Communication and Networks Laboratory	0	0	2	2	30	20	50	1
9	AIML-412-22	Python Programming and Data Analysis Laboratory	0	0	2	2	30	20	50	1
10	BMPD-341-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory				Non-credit
<b>Total</b>			<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>	<b>300</b>	<b>400</b>	<b>700</b>	<b>20</b>