



Government Polytechnic, Nagpur

Diploma in Artificial Intelligence and Machine Learning

NEP 2020 Align Curriculum 2026 Program Structure



Semester: First

Sem Duration: 16 Weeks

NCrF Entry Level: 3.0

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH			Cr	SA	FA	SA	FA	SA	
1	MH101K	Basic Mathematics		-	DSC	4	4	2	-	2	8	(120)	4	70 %	30	-	25	25 %	150	
2	CH101K	Applied Chemistry		-	DSC	2	4	-	2	2	8	(120)	4	70 %	30	25 %	25	25 %	175	
3	EC103K	Basics of Electronics		-	DSC	-	3	-	2	1	6	(90)	3	70 %	30	25 %	25	25 %	175	
4	EN101K	Communication Skills		-	AEC	-	3	-	2	1	6	(90)	3	70 %	30	25 %	25	25 %	175	
5	CM151K	Basics of Computer		-	DSC	-	-	-	2	2	4	(60)	2	-	-	50 %	50	-	100	
6	CM152K	Computer Workshop		-	SEC	-	-	-	4	-	4	(60)	2	-	-	25 %	25	25 %	75	
7	VE151K	Integrated Personality Development		-	VEC	-	-	-	2	2	4	(60)	2	-	-	25 %	25	25 %	75	
					Total	6	14	2	14	10	40	(600)	20	280	120	175	200	150	925	

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Symbols: Classroom Learning Summative Assessment: ** Objective Type Online 1 Hour Duration, *@ 3 Hour Duration, # 4 Hour Duration, + Laboratory Learning Summative Assessment: + External Examiner, % Internal Examiner Only . ₹ Course for Award of Diploma, \$ Online Mode

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NEP 2020 Align Curriculum 2026 Program Structure



Semester: Second

Sem Duration: 16 Weeks

NCrF Entry Level: 3.0

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														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH	Cr	SA	FA	SA	FA	SA			
1	MH102K	Applied Mathematics		-	DSC	4	4	2	-	2	8	(120)	4	70 %	@	30	-	25	25 %	150
2	PH101K	Applied Physics		-	DSC	2	4	-	2	2	8	(120)	4	70 %	@	30	25 %	25	25 %	175
3	IT101K	Basics of Programming		-	DSC	-	3	-	4	1	8	(120)	4	70 %	@	30	25 %	25	25 %	175
4	IT151K	Web Development		-	SEC	-	-	-	4	-	4	(60)	2	-		-	50 %	50	-	100
5	EN151K	Business Communication		-	AEC	-	2	-	2	-	4	(60)	2	-		-	25 %	25	-	50
6	IT152K	Applied Multimedia Techniques		-	SEC	-	-	-	4	-	4	(60)	2	-		-	50 %	50	-	100
7	VE152K	Environmental Sustainability		-	VEC	10	-	-	2	2	4	(60)	2	-		-	25 %	25	25 %	75
					Total	16	13	2	18	7	40	(600)	20	210	90	200	225	100	825	

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NEP 2020 Align Curriculum 2026 Program Structure



Scheme: First Year Exit

Duration: 4 Weeks

NCrF Entry Level: 3.5

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH		Cr	SA	FA	SA	FA	SA		
1	IN151K	Internship (Basic Skills)			40 Cr	INP	-	-	-	-	8	8	(120)	4	-	-	-	-	50 +	50
						Total	0	0	0	0	8	8	(120)	4	0	0	0	0	50	50

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NEP 2020 Align Curriculum 2026 Program Structure



Semester: Third

Sem Duration: 16 Weeks

NCrF Entry Level: 3.5

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH			Cr	SA	FA	SA	FA	SA	
1	AI201K	Introduction to Artificial Intelligence		-	DSC	-	3	-	2	1	6	(90)	3	70 % [@]	30	25 % ⁺	25	25 %	175	
2	IT202K	Object Oriented Programming		-	DSC	-	4	-	2	2	8	(120)	4	70 % [@]	30	25 % ⁺	25	25 %	175	
3	AI202K	Statistics & Probability for Machine Learning		-	DSC	-	3	1	-	2	6	(90)	3	70 % [@]	30		25	25 %	150	
4	CM203K	Database Management System		-	DSC	-	3	-	2	1	6	(90)	3	70 % [@]	30	25 % ⁺	25	25 %	175	
5	AI203K	Data Analytics		-	DSC	-	3	-	2	1	6	(90)	3	70 % [@]	30	25 % ⁺	25	25 %	175	
6	AI251K	Python Programming		-	SEC	-	2	-	4	-	6	(90)	3	-	-	50 % ⁺	50	-	100	
7	VE251K	Indian Constitution		-	VEC	-	1	-	-	1	2	(30)	1	-	-	-	-	50 %	50	
					Total	0	19	1	12	8	40	(600)	20	350	150	150	175	175	1000	

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NEP 2020 Align Curriculum 2026 Program Structure



Semester: Fourth

Sem Duration: 16 Weeks

NCrF Entry Level: 3.5

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH			Cr	SA	FA	SA	FA	SA	
1	IT204K	Data Structure	₹	-	DSC	-	4	-	2	2	8	(120)	4	70 *@	30	25 +	25	25 %	175	
2	IT205K	Java Programming	₹	IT202K	DSC	-	3	-	2	1	6	(90)	3	70 *@	30	25 +	25	25 %	175	
3	AI204K	Machine Learning		-	DSC	-	3	-	2	1	6	(90)	3	70 *@	30	25 %	25	25 %	175	
4	##XXXK	Discipline Specific Elective		-	DSE	-	3	-	2	1	6	(90)	3	70 *@	30	25 +	25	25 %	175	
5	AI252K	Introduction to IoT		-	SEC	-	-	-	4	-	4	(60)	2	-	-	50 +	50	-	100	
6	##291K	Open Elective		-	OE	-	2	-	2	-	4	(60)	2	70 **	30	25 %	25	-	150	
7	IN201K	Entrepreneurship & Startup		-	INP	-	2	-	2	-	4	(60)	2	70	30	25 %	25	-	150	
8	VE252K	Yoga & Meditation		-	VEC	30	-	-	2	-	2	(30)	1	-	-	25 +	25	-	50	
					Total	30	17	0	18	5	40	(600)	20	420	180	225	225	100	1150	

List of Discipline Specific Elective I

1	IT206K	Software Engineering	-
2	IT208K	Cyber Security & Privacy	-
3	IT209K	Data Warehousing & Mining	-
4	AI205K	Intelligent Vision	-

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NEP 2020 Align Curriculum 2026 Program Structure



Scheme: Second Year Exit

Duration: 4 Weeks

NCrF Entry Level: 4.0

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH		Cr	SA	FA	SA	FA	SA		
1	IN252K	Internship (Vocational Skills)			80 Cr	INP	-	-	-	-	8	8	(120)	4	-	-	-	-	50 +	50
						Total	0	0	0	0	8	8	(120)	4	0	0	0	0	50	50

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NEP 2020 Align Curriculum 2026 Program Structure



Semester: Fourth

List of Open Elective Courses

SN	Course Code	Course Title
1	CE291K	Civil Engineering Practice
2	ME291K	Elements of Mechanical Engineering
3	EE291K	Electrical Generation, Transmission and Distribution
4	EC291K	Microcontroller And Applications
5	MT291K	Foundry Technology
6	TX291K	General Textile Technology
7	AE291K	Basics of Automobile
8	PK291K	Basics of Packaging Technology
9	MK291K	Basic Mechatronics
10	TR291K	Adventure Tourism
11	NP291K	Any one NPTEL Course of more than 8 week duration

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NEP 2020 Align Curriculum 2026 Program Structure



Semester: Fifth

Sem Duration: 16 Weeks

NCrF Entry Level: 4.0

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)						Total Marks
														CL		TL/LL		SL		
							CL	TL	LL	SL	NLH			Cr	SA	FA	SA	FA	SA	
1	IT301K	Operating System	₹	-	DSC	-	3	-	2	1	6	(90)	3	70 %	30	25 +	25	25 %	175	
2	IT302K	Advanced Java	₹	IT205K	DSC	-	4	-	2	2	8	(120)	4	70 %	30	25 +	25	25 %	175	
3	AI301K	Deep Learning	₹	-	DSC	-	3	-	2	1	6	(90)	3	70 %	30	25 +	25	25 %	175	
4	AI302K	Design & Analysis of Algorithms	₹	-	DSC	-	3	-	2	1	6	(90)	3	70 %	30	25 +	25	25 %	175	
5	##XXXK	Discipline Specific Elective	₹	-	DSE	-	4	-	2		6	(90)	3	70 %	30	25 +	25	-	150	
6	AI351K	Capstone Project	₹	40 Cr	SEC	-	-	-	4	-	4	(60)	2	-	-	75 +	75	-	150	
7	AI352K	Web Programming	₹	-	SEC	-	-	-	4	-	4	(60)	2	-	-	50 +	50	-	100	
					Total	0	17	0	18	5	40	(600)	20	350	150	250	250	100	1100	

List of Discipline Specific Elective II

1	AI303K	Natural Language Processing		-
2	AI304K	Cloud Computing		-
3	IT305K	Android Application Development		-

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Semester: Sixth

Sem Duration: 16 Weeks

NCrF Entry Level: 4.0

SN	Course Code	Course Title		Pre-requisite Course/ Credits	Course Category	Total IKS Hours	Learning Scheme (Hours/Week)				Notional Hours/ Week (Total Notional Hours)		Credits	Assessment Scheme (Marks)					Total Marks
														CL		TL/LL		SL	
							CL	TL	LL	SL	NLH			Cr	SA	FA	SA	FA	
1	IN351K	Internship (16 Weeks)	₹	50 Cr	INP	-	-	-	2	30	32	(480)	16	-	-	100 +	-	100 %	200
2	SE351K	Seminar	₹	50 Cr	AEC	-	-	-	2	2	4	(60)	2	-	-	50 %	-	50 %	100
3	IN301K	Industrial Management	\$	-	INP	1	4	-	-	-	4	(60)	2	70 **	30	-	-	-	100
					Total	1	4	0	4	32	40	(600)	20	70	30	150	0	150	400

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List of Courses for Award of Diploma in Engineering



SN	Semester	Course Code	Course Title	Credits	Total Marks
1	Fourth	IT204K	Data Structure	4	175
2	Fourth	IT205K	Java Programming	3	175
3	Fifth	IT301K	Operating System	3	175
4	Fifth	IT302K	Advanced Java	4	175
5	Fifth	AI301K	Deep Learning	3	175
6	Fifth	AI302K	Design & Analysis of Algorithms	3	175
7	Fifth	##XXXX	Discipline Specific Elective	3	150
8	Fifth	AI351K	Capstone Project	2	150
9	Fifth	AI352K	Web Programming	2	100
10	Sixth	IN351K	Internship (16 Weeks)	16	200
11	Sixth	SE351K	Seminar	2	100
			Total	45	1750

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