



**1.1.1(1)**



# Relevance of Curriculum

**NRI INSTITUTE OF TECHNOLOGY**

Pothavarappadu(v), Agiripalli(M), VijayawadaRural-521 212

**CURRICULUM & IT'S RELEVANCE TO GLOBAL  
NRIA18 REGULATION:**

<b>S.No</b>	<b>Programme</b>	<b>Course Code</b>	<b>Title of the Course</b>	<b>Need</b>
1.	B. Tech	18A1100101	Professional English-I	Global
2.		18A1100201	Engineering Mathematics-I	Global
3.		18A1100391	Basic Engineering & IT Workshop	Skill Development
4.		18A1200101	Professional English-II	Global
5.		18A1200201	Engineering Mathematics-II	Global
6.		18A1205301	Programming and Problem solving with C	Global
7.		18A1205392	Programming and Problem solving with C Lab	Skill Development
8.		18A2100201	Complex Variables and Fourier Series	Global
9.		18A2101401	Strength of Materials	Global
10.		18A2101403	Surveying & Geomatics	Global
11.		18A2101404	Building Construction Practice	Global
12.		18A2101491	Surveying Lab	Skill Development
13.		18A2201402	Hydraulic Engineering	Global
14.		18A2201601	Elements of civil engineering	Global
15.		18A2201602	Basic Surveying	Global
16.		18A2201492	Engineering Geology Lab	Skill Development
17.		18A2201493	Advanced Surveying Lab	Skill Development
18.		18A2201494	Surveying Camp	Global
19.		18A3101401	Soil Mechanics	Global
20.		18A3101511	Subsurface Investigation and Instrumentation	Global
21.		18A3101512	Advanced Concrete Technology	Global
22.		18A3101513	Environmental Pollution and Control	Environment and Sustainability
23.		18A3101602	Airport Planning and Design	Global
24.		18A3101491	Soil Mechanics Lab	Skill Development
25.		18A3100801	Constitution of India	Global
26.		18A3201401	Foundation Engineering	Global
27.		18A3201402	Highway Engineering	Global
28.		18A3201403	Environmental Engineering	Global
29.		18A3201513	Air pollution Engineering	Environment and Sustainability
30.		18A3201514	Railway Engineering	Global
31.		18A3201515	Green Buildings and Sustainability	Environment and Sustainability
32.		18A3201521	Expansive Soils	Global
33.		18A3201522	Repair and Rehabilitation of Structures	Global

34.		18A3201523	Industrial waste & waste-water Engineering	Environment and Sustainability
35.		18A3201524	Docks and Harbour Engineering	Global
36.		18A3201525	Water Resources system Analysis	Global
37.		18A3201491	Highway Engineering Lab	Global
38.		18A3201391	Computer Aided Civil Engineering Drawing	Global
39.		18A3200801	Essence of Indian Knowledge and traditions	National
40.		18A4101404	Quantity Surveying & Public works	Global
41.		18A4101515	Sustainable water resources development	Global
42.		18A4101607	Project management	Global
43.		18A4101491	Structural Designing and drawing using softwares	Global
44.		18A4100801	Entrepreneurship	Skill Development
45.		18A4201511	Civil Infrastructure for smart city development	Global
46.		18A4201512	Geo-techniques for Design of Underground Structures	Global
47.		18A4201514	Road Safety Engineering	Global
48.		18A4201515	River Basin Management	Global
49.		18A4201521	Advanced Structural Design	Global
50.		18A4201522	Geosynthetics	Global
51.		18A4201523	Environmental Economics	Global
52.		18A4201525	Water Shed Management	Global
53.	M. Tech	18D1187401	Advanced Concrete Technology	Global
54.		18D1187404	Structural Dynamics	Global
55.	B. Tech	18A1100101	Professional English – I	Global
56.		18A1100201	Engineering Mathematics - I	Global
57.		18A1100205	Applied Chemistry	Global
58.		18A1103301	Engineering Graphics	Global
59.		18A1102301	Fundamentals of Electrical Engineering	Global
60.		18A1100191	English Communication Skills Lab – I	Skill Development
61.		18A1100294	Applied chemistry lab	Skill Development
62.		18A1100801	Environmental Studies	Global
63.		18A1200101	Professional English – II	Global
64.		18A1200201	Engineering Mathematics - II	Global
65.		18A1200203	Applied Physics	Global
66.		18A1205301	Programming & Problem Solving With C	Global
67.		18A1202401	Electrical Circuit Analysis –I	Global
68.		18A1200191	English Communication Skills Lab – II	Global
69.	18A1200292	Applied Physics lab	Global	

70.		18A1205392	Programming & Problem Solving With C Lab	Global
71.		18A1200391	Basic Engineering & IT Workshop	Global
72.		18A2100202	Complex Variables and Transform Techniques	Global
73.		18A2103302	Thermal and Hydro Prime Movers	Global
74.		18A2104301	Basic Electronic Devices and Circuits	Global
75.		18A2102401	Electrical Circuit Analysis- II	Global
76.		18A2102402	Electrical Machines – I	Global
77.		18A2103391	Thermal and Hydro Prime Movers Lab	Skill Development
78.		18A2104391	Basic Electronic Devices and Circuits Lab	Skill Development
79.		18A2102491	Electrical Circuits Lab	Skill Development
80.		18A2200101	Managerial Economics and Financial Analysis	Global
81.		18A2202401	Electro Magnetic Fields	Global
82.		18A2202402	Control Systems	Global
83.		18A2202403	Electrical Machines – II	Global
84.		18A2202404	Power Systems - I	Global
85.		18A2205601	Data Structures	Global
86.		18A2202491	Electrical Machines – I Lab	Skill Development
87.		18A2202492	Control Systems lab	Skill Development
88.		18A2200801	Professional Ethics and Human Values	Human Values
89.		18A2202601	Electrical Materials	Global
90.		18A2202602	Control Systems	Global
91.		18A3102401	Electrical Measurements	Global
92.		18A3104301	Switching Theory and Logic Design	Global
93.		18A3102402	Power Systems-II	Global
94.		18A3102403	Power Electronics	Global
95.		18A3105602	OOPS through JAVA	Global
96.		18A3102491	Electrical Machines-II Lab	Skill Development
97.		18A3102492	Power Electronics Lab	Skill Development
98.		18A3102493	Electrical Measurements Lab	Skill Development
99.		18A3102601	Renewable Energy Sources	Environment and Sustainability
100.		18A3102602	Modeling & Simulation of Systems	Global
101.		18A3202401	Power Electronic Controllers & Drives	Global
102.		18A3202402	Instrumentation	Global

103.		18A3202403	Power System Analysis	Global
104.		18A3202301	Microprocessor & Microcontrollers Applications	Global
105.		18A3202404	Utilization of Electrical Energy	Global
106.		18A3200601	Management Science	Global
107.		18A3202491	Electrical Simulation Lab	Skill Development
108.		18A3202391	MPMC Lab	Skill Development
109.		18A3202791	Mini Project	Global
110.		18A3202601	Electrical and Hybrid Vehicles	Global
111.		18A3202602	MATLAB and Applications	Global
112.		18A4102401	Switch Gear and Protection	Global
113.		18A4102402	Power System Operation and Control	Global
114.		18A4102403	Digital Control Systems	Global
115.		18A4102511	Electrical Distribution Systems	Global
116.		18A4102512	Power Quality	Global
117.		18A4102521	HVDC Transmission	Global
118.		18A4102522	High Voltage Engineering	Global
119.		18A4104609	Linear Integrated Circuit and Applications	Global
120.		18A4104610	Digital Image Processing	Global
121.		18A4104611	Wireless Communications and Networking	Global
122.		18A4102491	Power Systems Lab	Skill Development
123.		18A4102492	Electrical Engineering Workshop Lab	Skill Development
124.		18A4100802	IPR & Patents	Global
125.		18A4102791	Term Paper	Skill Development
126.		18A4102792	Technical Seminar	Skill Development
127.		18A4104601	Electrical Power Utilization	Global
128.		18A4104602	Energy Audit	Global
129.		18A4202511	FACTS	Global
130.		18A4202512	Energy Audit, Conservation & Management	Environment and Sustainability
131.		18A4202521	Power System Reforms	Global
132.		18A4202522	Special Electrical Machines	Global
133.		18A4202791	Project	Skill Development
134.	M. Tech	18EEPE101	Electrical Machine Modeling and Analysis	Global
135.		18EEPE102	Analysis of Power Electronic Converters	Global
136.		18EEPE103	Power Electronic Control of DC Drives	Global
137.		18EEPE104	Flexible AC Transmission Systems	Global
138.		18EEPE105A	Modern Control Theory	Global
139.		18EEPE105B	Power Quality	Global
140.		18EEPE105C	Optimization Techniques	Global

141.	18EEPE106A	Energy Auditing, Conservation and Management	Environment and Sustainability
142.	18EEPE106B	Artificial Intelligence Techniques	Global
143.	18EEPE106C	HVDC Transmission	Global
144.	18EEPE161	Simulation - Lab	Skill Development
145.	18EEPE201	Switched Mode Power Conversion	Global
146.	18EEPE202	Power Electronic Control of AC Drives	Global
147.	18EEPE203	Digital Controllers	Global
148.	18EEPE204	Custom Power devices	Global
149.	18EEPE205A	Renewable Energy Systems	Environment and Sustainability
150.	18EEPE205B	Reactive Power Compensation & Management	Global
151.	18EEPE205C	Electrical Distribution Systems	Global
152.	18EEPE206A	Smart Grid Technologies	Global
153.	18EEPE206B	Special Machines	Global
154.	18EEPE206C	Programmable Logic Controllers & Applications	Global
155.	18EEPE261	Power Converters & Drives Laboratory	Global
156.	18A3103601	Introduction to Material Handling Equipment.	Global
157.	18A3103602	Introduction to Robotics	Global
158.	18A3103401	Design of Machine Elements-II	Global
159.	18A3103402	Dynamics of Machinery	Global
160.	18A3103403	Manufacturing Technology	Global
161.	18A3103404	Applied Thermodynamics	Global
162.	18A3103511	Rapid Prototyping	Global
163.	18A3103512	Automation in Manufacturing	Global
164.	18A3103513	Hydraulic and Pneumatic Systems	Global
165.	18A3103514	Electric & Hybrid Vehicle	Global
166.	18A3103491	Machine Tools Lab	Skill Development
167.	18A3103492	Theory of Machines Lab	Skill Development
168.	18A3103791	Minor Project (Design and Fabrication)	Global
169.	18A3203401	Heat Transfer	Global
170.	18A3203402	Operations Research	Global
171.	18A3203403	Finite Element Methods	Global
172.	18A3203301	Instrumentation & Control Systems	Global
173.	18A3203601	1. Mechatronics	Global
174.	18A3203601	2. Hydraulic and Pneumatic Systems (Open Elective – III )	Global
175.	18A3203511 18A3203512 18A3203513 18A3203514	Professional Elective - II 1. Computational Fluid Dynamics 2. Robotics 3. Non Destructive Evaluation 4. Introduction to	Global

		Material Handling Equipment	
176.	18A3200801	IPR and Patents	Global
177.	18A3203491	Heat Transfer Lab	Skill Development
178.	18A3203491	Simulation Lab	Skill Development
179.	18A3104401	LINEAR AND DIGITAL INTEGRATED CIRCUITS	Global
180.	18A3104402	DIGITAL COMMUNICATIONS	Global
181.	18A3104403	ANTENNAS AND WAVE PROPAGATION	Global
182.	18A3104512	COMPUTER ORGANIZATION AND ARCHITECTURE	Global
183.	18A3104513	ELECTRONICS MEASUREMENTS AND INSTRUMENTATION	Global
184.	18A3112602	PYTHON PROGRAMMING	Global
185.	18A3100802	IPR&PATENTS	Global
186.	18A3104491	LINEAR AND DIGITAL INTEGRATED CIRCUITS LAB	Skill Development
187.	18A3104492	DIGITAL COMMUNICATION LAB	Skill Development
188.	18A3104493	VHDL PROGRAMMING LAB	Skill Development
189.	18A3204401	VLSI DESIGN	Global
190.	18A3204402	DIGITAL SIGNAL PROCESSING	Global
191.	18A3204403	MICROPROCESSORS AND MICRO CONTROLLERS	Global
192.	18A3204511	CELLULAR & MOBILE COMMUNICATIONS	Global
193.	18A3204512	DIGITAL SYSTEM DESIGN	Global
194.	18A3204491	MICROPROCESSORS AND MICRO CONTROLLERS LAB	Skill Development
195.	18A3212606	MACHINE LEARNING	Global
196.	18A3204492	DIGITAL SIGNAL PROCESSING LAB	Skill Development
197.	18A3204493	VLSI LAB	Skill Development
198.	18A4104401	MICROWAVE ENGINEERING	Global
199.	18A4104402	OPTICAL COMMUNICATION	Global
200.	18A4104403	DIGITAL IMAGE PROCESSING	Global
201.	18A4104491	MICROWAVE ENGINEERING & OC LAB	Skill Development
202.	18A4104791	MINI PROJECT	Skill Development
203.	18A4204511	WIRELESS COMMUNICATION NETWORKS	Global
204.	18A4204521	COMPUTER NETWORKS	Global
205.	18A4204522	INTERNET OF THINGS AND APPLICATIONS	Global
206.	18A4204791	MAIN PROJECT AND SEMINAR	Skill Development
207.	18A1100101	Professional English-I	Global
208.	18A1100201	Engineering Mathematics-I	Global
209.	18A1100203	Applied Physics	Global

B. Tech

210.		18A415524	P.E-5 : Machine Learning	Global
211.				Skill Development
		18A4105491	AI Application Development Lab	
212.	B. Tech	18A4105492	Predictive Analytics Lab	Skill Development
213.		18A4105493	Full Stack Web Development Lab	Skill Development
214.		18A4105791	Minor project	Skill Development
215.		18A4100804	Research Methodology	Global
216.		18A425534	P.E-6 : Deep Learning	Global
217.		18A1100101	Professional English-1	Global
218.		18A1100201	Engineering Mathematics-1	Global
219.		18A1100203	Applied Physics	Global
220.		18A1105301	Programming and Problem Solving with C	Global
221.		18A1103302	Engineering Graphics	Global
222.		18A1100191	English Communication Skills Lab-1	Skill Development
223.		18A1100292	Applied Physics lab	Skill Development
224.		18A1105392	Programming and Problem Solving with C Lab	Skill Development
225.		18A1100801	Environmental Studies	Environment and Sustainability
226.		18A1200101	Professional English-II	Global
227.		18A1200201	Engineering Mathematics-II	Global
228.		18A1200205	Applied Chemistry	Global
229.		18A1205401	OOPS through Java	Global
230.		18A1202301	Fundamentals of Electrical Engineering	Global
231.		18A1200191	English Communication Skills Lab-II	Global
232.		18A1200294	Applied Chemistry lab	Skill Development
233.		18A1205391	Automation Tools and Professional Workshop	Skill Development
234.		18A1205491	OOPS through Java Lab	Skill Development
235.		18A2100203	Discrete Mathematical Structures	Global
236.	18A2105401	Data Structures	Global	
237.	18A2105402	Data Base Management Systems	Global	
238.	18A2105403	Digital Logic Design	Global	
239.	18A2105391	Internet of Things Lab	Skill Development	
240.	B. Tech	18A2105491	Data Structures Lab	Skill Development
241.		18A2105492	Data Base Management System Lab	Skill Development
242.		18A2105494	Python programming Lab	Skill Development
243.		18A2100801	Humanities elective-1 Professional ethics and Human Values	Human Values
244.		18A2200201	Probability and Statistics	Global



245.		18A2205401	Web Technologies and Advanced Java Programming	Global
246.		18A2205402	Software Engineering	Global
247.		18A2205403	Computer Organization	Global
248.		18A2205491	Web Technologies and Advanced Java Programming Lab	Skill Development
249.		18A2205492	Aptitude and Reasoning	Global
250.		18A2205901	Mini project	Skill Development
251.	B. Tech	18A3105401	Advanced Data Structures	Global
252.		18A3105403	Computer Networks	Global
253.		18A3105403	Formal Languages and Automata Theory	Global
254.		18A3103603	Introduction to Robotics	Global
255.		18A3105513	Data Warehouse & Data Mining	Global
256.		18A3105492	Computer Networks lab	Skill Development
257.		18A3105491	Advanced Data Structures Lab	Skill Development
258.		18A3101301	Basics of Civil and Mechanical Engineering / Swayam/NPTEL **	Skill Development
259.		18A3105791	Competitive Coding	Global
260.		18A3105792	Seminar	Skill Development
261.		18A3205401	Operating Systems	Global
262.		18A3205402	Design and Analysis of Algorithms	Global
263.		18A3205403	Compiler Design	Global
264.		18A3205513	Distributed Systems	Global
265.		18A3205523	Software Testing Methodologies	Global
266.		18A3205404	Artificial Intelligence	Global
267.		18A3205491	Operating Systems & Unix programming Lab	Skill Development
268.		18A3205492	R Programming lab	Skill Development
269.		18A3205991	Aptitude and Reasoning – 2	Global
270.		18A3205791	Hackathon	Global
271.		18A3200791	Biology for Engineers/ Enterprising and Startup/ NSS / YOGA / Social service/ sports /games	Skill Development
272.		18A4100101	Managerial Economics and Financial Accounting	Global
273.		18A4105401	Cryptography and Network Security	Global
274.		18A4100804	Research Methodology	Global
275.		18A4105491	AI application development Lab	Skill Development
276.		18A4105492	Predictive Analytics using R	Global
277.		18A1105493	Full stack web development lab	Skill Development
278.	B. Tech	18A1100292	Minor project	Skill Development
279.		18A4100804	Research Methodology	Global
280.		18A4205513	Social networking and Semantics	Global
281.		18A4204609	Image Processing	Global

**NRIA20 REGULATION:**

S.No	Programme	Course Code	Title of the Course	Need
1.	B. Tech	20A2100201	Vector calculus, Fourier Transforms and Partial Differential Equations	Global
2.		20A2102401	Electronic Devices and Circuits	Global
3.		20A2102402	Electrical Circuit Analysis-II	Global
4.		20A2102403	DC Machines and Transformers	Global
5.		20A2102404	Electro Magnetic Fields	Global
6.		20A2102491	Electrical Circuits Lab	Skill Development
7.		20A2102492	DC Machines and Transformers Lab	Skill Development
8.		20A2102493	Electronic Devices and Circuits Lab	Skill Development
9.		20A2102991	Design of Electrical Circuits using Engineering Software Tools	Skill Development
10.		20A2102802	Professional Ethics & Human Values	Human Values
11.		20A2205301	Python Programming	Global
12.		20A2202401	Digital Electronics	Global
13.		20A2202402	Power System-I	Global
14.		20A2202403	Induction and Synchronous Machines	Global
15.		20A2200101	Managerial Economics & Financial Analysis	Global
16.		20A2205391	Python Programming Lab	Skill Development
17.		20A2202491	Induction and Synchronous Machines Lab	Skill Development
18.		20A2202492	Digital Electronics Lab	Skill Development
19.		20A2202991	IoT Applications of Electrical Engineering	Skill Development
20.		20A3102401	Power Systems-II	Global
21.		20A3102402	Power Electronics	Global
22.		20A3102403	Linear Control Systems	Global
23.		20A3100601	Aptitude And Reasoning	Global
24.		20A3102511	Utilization of Electrical Energy	Global
25.		20A3102491	Control Systems Lab	Skill Development
26.		20A3102492	Power Electronics Lab	Skill Development
27.		20A3102991	IoT Lab	Skill Development
28.		20A3102791	Summer Internship 2 Months	Skill

			(Mandatory) after second year (to be evaluated during V semester)	Development
29.		20A3202401	Microprocessors and Microcontrollers	Global
30.		20A3202402	Electrical Measurements and Instrumentation	Global
31.		20A3202403	Power System Analysis	Global
32.		20A3202511	Switch Gear And Protection	Global
33.		20A3204605	Industrial Electronics	Global
34.		20A3202491	Electrical Measurements and Instrumentation Lab	Skill Development
35.		20A3202492	Microprocessors and Microcontrollers Lab	Skill Development
36.		20A3202493	Power Systems and Simulation Lab	Skill Development
37.		20A3202991	Skill Advanced Course: Machine Learning with Python	Skill Development
38.		20A3200801	Research Methodology	Global
39.		20A4102511	Renewable and Distributed Energy Technologies	Global
40.		20A4102522	High Voltage Engineering	Global
41.		20A4102531	Power System Operation and Control	Global
42.		20A4101607	Highway Engineering	Global
43.		20A4103613	Safety Engineering	Global
44.		20A4100101	Universal Human Values-2: Understanding Harmony	Human Values
45.		20A4102792	Mini Project	Skill Development
46.		20A4102791	Industrial / Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII Semester)	Skill Development
47.		20A4102793	Term Paper	Skill Development
48.			Project work, seminar and internship in industry (6 Months)	Skill Development

### **CURRICULUM & IT'S RELEVANCE TO NATIONAL NEEDS**

<b>S.No</b>	<b>Programme</b>	<b>Course Code</b>	<b>Title of the Course</b>	<b>Need</b>
1	B.Tech	18A3100801	Indian Constitution	National