

**GODAVARI INSTITUTE OF ENGINEERING & TECHNOLOGY (A)  
CHAITANYA NAGAR, RAJAHMUNDRY**

**Course Structure of  
B.Tech. Programme in Computer Science and Engineering  
(Artificial Intelligence and Machine Learning)  
GRBT-20**

**I Year I Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201HB101	BSC	Mathematics-I	3	0	0	3	30	70	100
2	201HB102	HSMC	Communicative English-1	3	0	0	3	30	70	100
3	201HB103b	BSC	Engineering Chemistry	3	0	0	3	30	70	100
4	201CS104	ESC	Problem Solving & Programming in C	3	0	0	3	30	70	100
5	201ME105	ESC	Engineering Graphics	1	0	4	3	30	70	100
6	201HB111b	BSC	Engineering Chemistry Laboratory	0	0	3	1.5	50	50	100
7	201CS112	ESC	Problem Solving & Programming in C Lab	0	0	3	1.5	50	50	100
8	201ME113c	ESC	Computer Engineering Workshop	0	0	3	1.5	50	50	100
<b>Total =</b>				<b>13</b>	<b>0</b>	<b>13</b>	<b>19.5</b>	<b>300</b>	<b>500</b>	<b>800</b>

**I Year II Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201HB201	BSC	Mathematics-II	3	0	0	3	30	70	100
2	201HB202a	BSC	Applied Physics	3	0	0	3	30	70	100
3	201EC203	ESC	Fundamentals of Digital Electronics	3	0	0	3	30	70	100
4	201CS204	ESC	Data Structures	3	0	0	3	30	70	100
5	201CS205	ESC	Python Programming	3	0	0	3	30	70	100
6	201HB296	MC	Environmental Science	2	0	0	0	30*	---	---
7	201HB211a	BSC	Applied Physics Laboratory	0	0	3	1.5	50	50	100
8	201HB212	HSMC	Communicative English Lab	0	0	3	1.5	50	50	100
9	201CS213	ESC	Data Structures Lab	0	0	3	1.5	50	50	100
<b>Total =</b>				<b>17</b>	<b>0</b>	<b>9</b>	<b>19.5</b>	<b>300</b>	<b>500</b>	<b>800</b>

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**II Year I Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CS301	BSC	Mathematical Foundations of Computer Science	2	1	0	3	30	70	100
2	201CS302	PCC	Design and Analysis of Algorithms	3	0	0	3	30	70	100
3	201AI303	PCC	Database Management Systems	3	0	0	3	30	70	100
4	201CS304	PCC	Object Oriented Programming through JAVA	3	0	0	3	30	70	100
5	201HB305	HSB C	Managerial Economics and Financial Analysis	3	0	0	3	30	70	100
6	201AI311	PCC	Database Management Systems Lab	0	0	3	1.5	50	50	100
7	201CS312	PCC	Object Oriented Programming through JAVA Lab	0	0	3	1.5	50	50	100
8	201CS313	PCC	Linux and Shell Programming Lab	0	0	3	1.5	50	50	100
9	201CS381	SOC	Web Application Development Using Full Stack Module -1	0	1	2	2	---	50	50
10	201CE391	MC	Constitution of India	2	0	0	0	30	70*	100
<b>Total =</b>				<b>16</b>	<b>2</b>	<b>11</b>	<b>21.5</b>	<b>330</b>	<b>620</b>	<b>950</b>

**II Year II Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CS401	BSC	Statistics with R Programming	2	1	0	3	30	70	100
2	201CS402	PCC	Formal Languages and Automata Theory	3	0	0	3	30	70	100
3	201AI403	PCC	Computer Organization	3	0	0	3	30	70	100
4	201AI404	PCC	Introduction to Artificial Intelligence and Machine Learning	3	0	0	3	30	70	100
5	201CS405	PCC	Software Engineering	3	0	0	3	30	70	100
6	201CS411	PCC	R Programming Lab	0	0	3	1.5	50	50	100
7	201AI412	PCC	Introduction to Artificial Intelligence and Machine Learning Lab	0	0	3	1.5	50	50	100
8	201AI413	PCC	Software Engineering Lab	0	0	3	1.5	50	50	100
9	201CS481	SOC	Web Application Development Using Full Stack Module -2	0	1	2	2	---	50	50
<b>Total =</b>				<b>14</b>	<b>2</b>	<b>11</b>	<b>21.5</b>	<b>300</b>	<b>550</b>	<b>850</b>

**# After II B.Tech II Semester Summer Internship/ Mini Project-1 is mandatory. Evaluation should be III B.Tech I semester.**

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**(Artificial Intelligence and Machine Learning)**  
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**III Year I Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201AI501	PCC	Natural Language Processing	3	0	0	3	30	70	100
2	201CS502	PCC	Compiler Design	3	0	0	3	30	70	100
3	201CS503	PCC	Computer Networks	3	0	0	3	30	70	100
4	201AI564A 201AI564B 201AI564C 201AI564D	PE/IC	Professional Elective-I A) Operating Systems B)Data Visualization C) DevOps D)MOOCS: NPTEL/SWAYAM	3	0	0	3	30	70	100
5	201CE565a  201EE565a  201ME565a 201EC565a  201CS565a  201MM565a 201AM565a 201PT565a  201MB565a	OE1	Open Electives –I/ Job Oriented Elective a) Environmental Pollution & Control b) Fundamentals of Utilization of Electrical Energy c) Robotics d) Microprocessors and its interfacing e) Foundations of Operating Systems f) Elements of Mining Technology g) Basic Automobile Engineering h) Fundamentals of Petroleum Engineering i) Principles of Management.	3	0	0	3	30	70	100
6	201HB591	MC	Quantitative Aptitude and Reasoning	2	0	0	0	30	70	100
7	201AI511	PCC	Natural Language Processing Lab	0	0	3	1.5	50	50	100
8	201CS512	PCC	Internetworking Protocol Lab	0	0	3	1.5	50	50	100
9	201CS581	SOC	Web Application Development Using Full Stack Module -3	0	1	2	2	--	50	50
10	201CS531/201CS521	PROJ	Summer Internship/ Mini Project-1	0	0	0	1.5	100	---	100
<b>Total =</b>				<b>17</b>	<b>1</b>	<b>8</b>	<b>21.5</b>	<b>380</b>	<b>570</b>	<b>950</b>
<b>Minor courses</b>							<b>4</b>			

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**III Year II Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201AI601	PCC	Advanced Data Structures	3	0	0	3	30	70	100
2	201AI602	PCC	Soft Computing	3	0	0	3	30	70	100
3	201CS603	PCC	Machine Learning	3	0	0	3	30	70	100
4	201AI664A 201AI664B 201AI664C 201AI664D	PEC	Professional Elective-II A)Big Data Analytics B)Block Chain Technologies and its Applications C)Mean Stack Technologies D)MOOCS: NPTEL/SWAYAM	3	0	0	3	30	70	100
5	201CE665a 201EE665a 201ME665a 201EC665a 201CS665a 201MM665a 201AM665a 201PT665a 201MB665a	OEC	Open Electives –II/ Job Oriented Elective a) Solid Waste Management b) Concepts of Power System Engineering c) Introduction to MEMS d) IOT and its Applications e) Fundamentals of Databases f) Open Pit Slope Analysis and Design g) Hybrid and Electric Vehicles h) Basic Concepts in Petroleum Drilling Engineering i) Operations Management	3	0	0	3	30	70	100
6	201MB691	MC	IPR and Patents	2	0	0	0	30	70	100
7	201AI611	PCC	Advanced Data Structures Lab	0	0	3	1.5	50	50	100
8	201AI612	PCC	Soft Computing Lab	0	0	3	1.5	50	50	100
9	201CS613	PCC	Machine Learning using Python Lab	0	0	3	1.5	50	50	100
10	201HB681	SOC	English for Career	0	1	2	2	--	50	50
<b>Total =</b>				<b>17</b>	<b>1</b>	<b>11</b>	<b>21.5</b>	<b>330</b>	<b>620</b>	<b>950</b>
<b>Minor courses</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>			
<b>Industrial/ Research Internship/ Miniproject-2 (Mandatory) after third year to be evaluated during IV year I semester</b>										

**GODAVARI INSTITUTE OF ENGINEERING & TECHNOLOGY (A)**

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**Tentative Course Structure of**

**B.Tech. Programme in Computer Science and Engineering**

**(Artificial Intelligence and Machine Learning)**

**GRBT-20**

**IV Year I Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CS761A 201CS761B 201AI761C 201AI761D	PEC	Professional Elective-III A) Distributed Systems B) Cloud Computing C) Speech Processing D) Deep Learning	3	0	0	3	30	70	100
2	201AI762A 201AI762B  201AI762C  201AI762D	PEC	Professional Elective-IV A) Robotic Process Automation B) Information Storage and Management C) Data Mining and Knowledge discovery D) MOOCS-NPTEL/SWAYAM	3	0	0	3	30	70	100
3	201AI763A 201AI763B 201AI763C 201AI763D	PEC	Professional Elective-V A) Computer Vision B) Quantum Computing C) Web Engineering D) MOOCS-NPTEL/SWAYAM	3	0	0	3	30	70	100
4	201CE764a 201EE764a  201ME764a  201EC764a 201CS764a 201MM764a 201AM764a 201PT764a  201MB764a	OEC	Open Electives-III/ Job Oriented Elective a) Building Technology b) Fundamentals of Smart Grid Technologies c) Nano Technology and its Applications d) Embedded Systems e) Information Security f) Mining and its Importance g) Modern Vehicle Technology h) Introduction to Petroleum Production Engineering i) Entrepreneurship for Engineers	3		0	3	30	70	100
5	201CE765a 201EE765a  201ME765a 201EC765a 201CS765a 201MM765a 201AM765a  201PT765a  201MB765a	OEC	Open Electives –IV/ Job Oriented Elective a) Safety Engineering b) Basics of Electrical Measurements and Instrumentation c) Introduction to Operations Research d) Digital Image Processing e) Human Computer Interaction f) Remote Sensing & GIS in Mining g) Alternative Energy	3	0	0	3	30	70	100

			Resources for Automotives h) Basic Concepts in Reservoir Engineering i) Digital Marketing							
6	201HB796	HSMC	UHV 2: Understanding Harmony	3	0	0	3	30	70	100
7	201CS781	SOC	Deep Learning using Python	0	1	2	2	---	50	50
8	201CS721	PROJ	Industrial/ Research Internship/ Mini Project-2	0	0	0	3	100	---	100
Total =				18	1	2	23	280	470	750
Minor courses				4	0	0	4			

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**IV Year II Semester**

S. No	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201AI841	PROJ	Project Project Work, Seminar, Internship	0	0	0	8	60	140	200
Total =				0	0	0	8			

  
**University Nominee**  
**Dr. M.H.M. Krishna Prasad**  
*Professor*  
of Computer Science & Engg  
College of Engineering  
RAJAHMUNDRY - 533 003.  
  
**Industry Expert**  
**Mr. K.Lakshmi Narasimha Arun**

  
**Subject Expert-1**  
**(Dr. D.Chandra Mohan)**

  
**Subject Expert-2**  
**(Dr. B. Srinivasa Rao)**

  
**BOS-Chairman**  
**(Dr. B. Sujatha)**