



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

**Department of Computer Science and Engineering**  
**B.Tech**  
**(Computer Science and Engineering ( Data Science))**  
**First Year – First Semester**  
**AR20 Regulations**

S. No.	Sub. Code	Category	Name of Subject	Periods		Maximum Marks		Total	Credits
				T	L	Internal	External		
1	20MA1001	BS	Calculus	3	--	30	70	100	3
2	20CH1001	BS	Applied chemistry	3	--	30	70	100	3
3	20HS1001	HS	English for Communication	3	--	30	70	100	3
4	20ES1004	ES	Programming for Problem Solving using C	3	--	30	70	100	3
5	20ES1005	ES	Computer engineering workshop	2	2	30	70	100	3
6	20HS1101	HSLAB	English language communication skills lab	--	3	15	35	50	1.5
7	20CH1101	BSLAB	Engineering/Applied chemistry lab	--	3	15	35	50	1.5
8	20ES1104	ESLAB	Programming for Problem Solving using C Lab	--	3	15	35	50	1.5
SPORTS/NSS/NCC/Social Services									
								Total Credits	19.5



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

## First Year – Second Semester- Computer Science and Engineering (Data Science)

S. No	Sub. Code	Category	Name of Subject	Periods		Maximum Marks		Total	Credits
				T	L	Internal	External		
1	20MA2001	BS	Linear algebra and Vector Calculus	3	--	30	70	100	3
2	20PH1002	BS	Applied physics	3	--	30	70	100	3
3	20CS2001	CS	Data structures	3	--	30	70	100	3
4	20CS2002	CS	Python programming	3	--	30	70	100	3
5	20ES2006	ES	Digital logic design	3	--	30	70	100	3
6	20CS2101	CSLAB	Data Structures through C Lab	--	3	15	35	50	1.5
7	20PH1101	BSLAB	Engineering/Applied physics lab	--	3	15	35	50	1.5
8	20CS2102	CSLAB	Python programming lab	--	3	15	35	50	1.5
9	20MC2502	MC	Universal Human Values(AICTE Suggested)	2	0	0	0	0	0
SPORTS/NSS/NCC/Social Services									
								Total Credits	19.5

F



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

## Second Year – First Semester- Computer Science and Engineering ( Data Science))

S.No.	Sub. Code	Category	Name of Subject	Periods		Maximum Marks		Total	Credits
				T	L	Internal	External		
1	20ES3019	ES	Discrete Mathematical Structures	3	--	30	70	100	3
2	20MA2003	BS	Numerical Techniques and Vector Spaces	3	--	30	70	100	3
3	20ES3005	ES	Object Oriented Programming through Java	3	--	30	70	100	3
4	20CS3003	PC	Operating Systems	2	2	30	70	100	3
5	20CS3005	PC	Database Management System	3	--	30	70	100	3
6	20ES3105	ESLAB	JAVA Programming Lab	--	3	15	35	50	1.5
7	20CS3103	PCLAB	Operating Systems Lab	--	3	15	35	50	1.5
8	20CS3105	PCLAB	DBMS Lab	--	3	15	35	50	1.5
9	20CS3202	SC	Skill oriented Course: AWS & Fundamental of cloud computing	1	2	50	50	100	2
10	20MC3502	MC	Environmental Science(AICTE Suggested)	2	0	0	0	0	0
SPORTS/NSS/NCC/Social Services									
Total Credits								21.5	



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

## Second Year – Second Semester- Computer Science and Engineering ( Data Science)

S.No.	Sub. Code	Category	Name of Subject	Periods		Maximum Marks		Total	Credits
				T	L	Internal	External		
1	20CS4002	PC	Computer Organization & Introduction to Compile design	3	--	30	70	100	3
2	20MA4006	BS	Probability and Statistics	3	--	30	70	100	3
3	20CS4001	PC	Fundamentals of Data Science	3	--	30	70	100	3
4	20CS4008	PC	Data warehousing & Data Mining	3	--	30	70	100	3
5	20HS4002	HS	Managerial Economics and Financial Accountancy	3	--	30	70	100	3
6	20CS4101	PCLAB	Statistics using R programming Lab	--	3	15	35	50	1.5
7	20CS4105	PCLAB	Data Mining Lab	--	3	15	35	50	1.5
8	20CS4102	PCLAB	CO and CD Lab	--	3	15	35	50	1.5
9	20CS4101	SC	Skill Oriented Course* Basic web design	--	3	50	50	100	2
SPORTS/NSS/NCC/Social Services									
								Total credits	21.5
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	30	70	100	4



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

## Third Year –First Semester- Computer Science and Engineering ( Data Science)

Sl.No.	Sub.Code	Category	Name of Subject	Periods		Maximum Marks			Credits
				Theory	Lab	Internal	External	Total	
1	20CS5005	PC	Introduction to Artificial Intelligence and Machine Learning	3	--	30	70	100	3
2	20CS5007	PC	Design and Analysis of Algorithms	3	--	30	70	100	3
3	20CS5009	PC	Object Oriented Software Engineering	3	--	30	70	100	3
4	20xx54xx	OE	Open Elective-I(Inter Disciplinary)/MOOCs	2	2	30	70	100	3
5	20CS5316 20CS5301 20CS5321 20CS5304	PE	<b>Professional Elective-I/MOOCs</b> 1. Distributed Computing 2. Advanced Databases 3. Computer Graphics 4. Internet of Things	3	--	30	70	100	3
6	20CS5105	PCLAB	Machine Learning using Python Lab	--	3	15	35	50	1.5
7	20CS5107	PCLAB	Design and Analysis of Algorithms Lab	--	3	15	35	50	1.5
8	<b>20CS5204</b>	SC	Skill advanced course: Full Stack web development Lab	1	2	50	50	100	2
9	20MC5503	MC	Essence of Indian Tradition(AICTE Suggested)	2	0	0	0	0	0
	20CS5801	<b>Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)</b>							<b>1.5</b>
<b>Total Credits</b>									<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				<b>4</b>	<b>0</b>	<b>30</b>	<b>70</b>	<b>100</b>	<b>4</b>



# RAGHU INSTITUTE OF TECHNOLOGY

**AUTONOMOUS**

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
 Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
 Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
 Ph: +91-8922-248003, 248013  
 e-mail: principal@raghuinstech.com website: www.raghuinstech.com

## Third Year –Second Semester- Computer Science and Engineering ( Data Science))

S.No	Sub.Code	Category	Name of Subject	Periods		Maximum Marks			Credits
				Theory	Lab	Internal	External	Total	
1	20CS6012	PC	Computer Networks	3	--	30	70	100	3
2	20AI6054	PC	Big Data Analytics	3	--	30	70	100	3
3	20DS6075	PC	Data Wrangling	3	--	30	70	100	3
4	20AI6339 20AI6341 20CY6342 20CS6331	PE	<b>Professional Elective-II/MOOCs</b>	3	--	30	70	100	3
			1.Computer Vision						
			2.Introduction to Robotics						
			3.Cryptography Network Security 4.Software Project Management						
5	20xx64xx	OE	Open Elective-II(Inter Disciplinary)/MOOCs	3	--	30	70	100	3
6	20AI6154	PCLAB	Data Analytics Lab	--	2	15	35	50	1.5
7	20DS6175	PCLAB	Data Wrangling Lab	--	3	15	35	50	1.5
8	20CS6112	PCLAB	Computer Networks Lab	--	3	15	35	50	1.5
9	20HS6209	HS	Employability & corporate Readiness skills	2	2	50	50	100	2
10	20MC6504	MC	Indian Constitution(AICTE Suggested)	2	0	0	0	0	0
<b>Total Credits</b>									21.5
<b>Honors/Minor courses</b> (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	30	70	100	4
<b>Internship 2 Months (Mandatory) during summer vacation</b>									





# RAGHU INSTITUTE OF TECHNOLOGY

## AUTONOMOUS

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
Ph: +91-8922-248003, 248013  
e-mail: principal@raghuinstech.com website: www.raghuinstech.com

### Open Electives for Other Departments

#### Open Elective-I

Sub.Code	Name
1	Advanced Data Structures
2	Software Engineering
3	Data Base Management Systems
4	Operating Systems
5	UNIX Programming
6	Computer Graphics

#### Open Elective-II

Sub.Code	Name
1	Web Technologies
2	Mobile Computing
3	Python Programming
4	Distributed Computing
5	Computer Networks
6	Cloud computing with AWS

#### Open Elective-III

Sub.Code	Name
1	Internet of Things
2	Fundamentals of Data Science
3	Artificial Intelligence
4	Introduction to Cyber Security
5	Big Data Analytics
6	R Programming

#### Open Elective-IV

Sub.Code	Name
1	Cloud Computing
2	Machine Learning
3	Deep Learning
4	Software Project Management
5	Cryptography and Network Security
6	Malware Analysis



# RAGHU INSTITUTE OF TECHNOLOGY

## AUTONOMOUS

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)  
Accredited by NBA (ECE, EEE, MECH, CSE) & NAAC with 'A' Grade, Listed u/s 2(f) & 12(B) of UGC Act 1956.  
Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)  
Ph: +91-8922-248003, 248013  
e-mail: [principal@raghuinstech.com](mailto:principal@raghuinstech.com) website: [www.raghuinstech.com](http://www.raghuinstech.com)