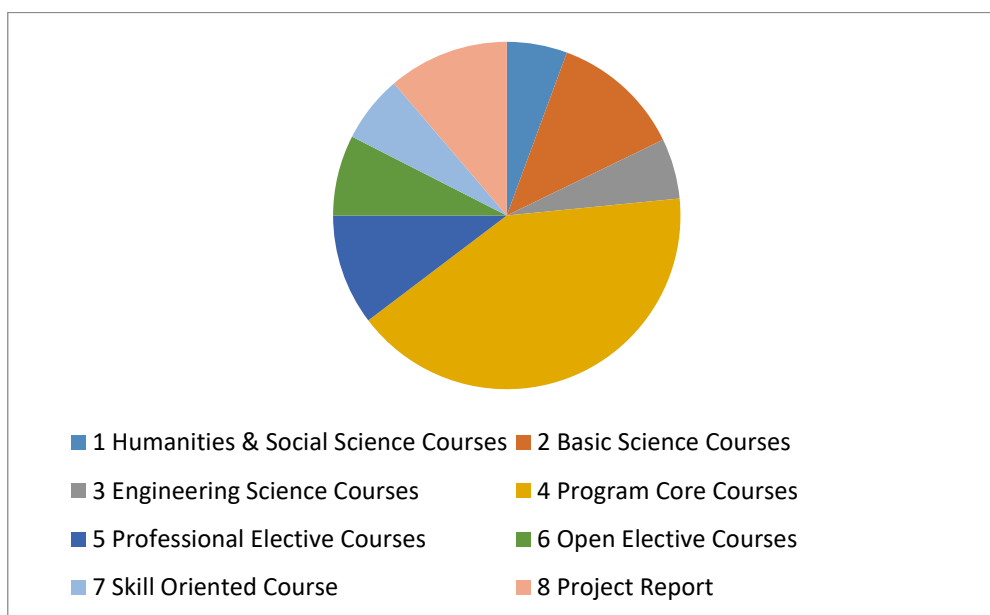


R V R & J C COLLEGE OF ENGINEERING (Autonomous), CHOWDAVARAM, GUNTUR-19
B.Tech., Computer Science & Engineering (AI & ML)

(w.e.f. the academic year 2021-2022)

Strucutre (Categories of Courses)

Sl. No.	Category	Breakup of Credits	Semester								
			I	II	III	IV	V	VI	VII	VIII	
1	Humanities & Social Science Courses	9	4.5	1.5						3	
2	Basic Science Courses	19.5	7.5	7.5	4.5						
3	Engineering Science Courses	9	3	3	3						
4	Program Core Courses	66	4.5	7.5	12	19.5	10.5	12			
5	Professional Elective Courses	16.5					4.5	3	9		
6	Open Elective Courses	12					3	3	6		
7	Skill Oriented Course	10			2	2	2	2	2		
8	Project Report	18					1.5	1.5	3	12	
	Total	160	19.5	19.5	21.5	21.5	21.5	21.5	23	12	



Semester Wise Structure

Semester I (First year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 111	Mathematics – I	3 – 0 – 0	30	70	3	BS
2	CM 112	Engineering Chemistry	3 – 0 – 0	30	70	3	BS
3	CM 113	English for Communication Skills	3 – 0 – 0	30	70	3	HS
4	CM 114	Fundamentals of Computer Science	3 – 0 – 0	30	70	3	PC
5	CM 151	Engineering Chemistry Lab	0 – 0 – 3	30	70	1.5	BS
6	CM 152	English Language Communication Skills Lab	0 – 0 – 3	30	70	1.5	HS
7	CM 153	Engineering Graphics and Design Lab	1 – 0 – 4	30	70	3	ES
8	CM 154	Fundamentals of Computer Science Lab	0 – 0 – 3	30	70	1.5	PC
9	CMMC1	Environmental Science	2 – 0 – 0	100	-	-	MC
		Three Weeks Orientation Program	-	-	-	-	-
Total			15 – 0 – 13	340	560	19.5	

Semester II (First Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM121	Mathematics – II	3 – 0 – 0	30	70	3	BS
2	CM122	Engineering Physics	3 – 0 – 0	30	70	3	BS
3	CM123	Digital Electronics	3 – 0 – 0	30	70	3	ES
4	CM 124	Data Structures & Algorithms	3 – 0 – 0	30	70	3	PC
5	CM125	Programming in Python	2 – 0 – 0	30	70	2	PC
6	CM161	Engineering Physics Lab	0 – 0 – 3	30	70	1.5	BS
7	CM 162	Technical Communication & Value Science Lab	0 – 0 – 3	30	70	1.5	HS
8	CM 163	Data Structures & Algorithms Lab	0 – 0 – 3	30	70	1.5	PC
9	CM 164	Programming in Python Lab	0 – 0 – 2	30	70	1	PC
10	CMMC2	Constitution of India	2 – 0 – 0	100	-	-	MC
Total			16 – 0 – 11	370	630	19.5	

Semester III (Second Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 211	Probability and Statistics	3 – 0 – 0	30	70	3	BS
2	CM 212	Discrete Mathematics	3 – 0 – 0	30	70	3	ES
3	CM 213	Computer Organization	3 – 0 – 0	30	70	3	PC
4	CM 214	Database Management Systems	3 – 0 – 0	30	70	3	PC
5	CM 215	Object Oriented Programming	3 – 0 – 0	30	70	3	PC
6	CM 251	Probability and Statistics Lab	0 – 0 – 3	30	70	1.5	BS
7	CM 252	Database Management System Lab	0 – 0 – 3	30	70	1.5	PC
8	CM 253	Object Oriented Programming Lab	0 – 0 – 3	30	70	1.5	PC
9	CM SL1	Skill Oriented Course - I	1 – 0 – 2	100	-	2	SC
10	CM MC3	Design Thinking & Product Innovation	2 – 0 – 0	100	-	-	MC
Total			18 – 0 – 11	440	560	21.5	

Semester IV (Second Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 221	Computational Statistics	3 – 0 – 0	30	70	3	PC
2	CM 222	Artificial Intelligence	3 – 0 – 0	30	70	3	PC
3	CM 223	Operating Systems	3 – 0 – 0	30	70	3	PC
4	CM 224	Software Engineering	3 – 0 – 0	30	70	3	PC
5	CM 225	Design and Analysis of Algorithms	3 – 0 – 0	30	70	3	PC
6	CM 261	Computational Statistics Lab	0 – 0 – 3	30	70	1.5	PC
7	CM 262	Artificial Intelligence Lab	0 – 0 – 3	30	70	1.5	PC
8	CM 263	Design and Analysis of Algorithms Lab	0 – 0 – 3	30	70	1.5	PC
9	CM SL2	Skill Oriented Course - II	1 – 0 – 2	100	-	2	SC
10	CM MC4	Ethics & Human Values	2 – 0 – 0	100	-	-	MC
Total			18 – 0 – 11	440	560	21.5	

Internship of Minimum 3 Weeks is mandatory during Summer Vacation (Will be evaluated in fifth Semester)

Registration for Honors/Minor degree permitted in this semester (Maximum Two additional courses per semester are permitted for Honors/Minor

Semester V (Third Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 311	Automata Theory & Formal Languages	3 – 0 – 0	30	70	3	PC
2	CM 312	Computer Networks	3 – 0 – 0	30	70	3	PC
3	CM 313	Data and Visual Analytics in AI	3 – 0 – 0	30	70	3	PC
4	CM 314	Professional Elective – I	3 – 0 – 0	30	70	3	PE
5	CM 315	Open/Job-Oriented Elective – I	3 – 0 – 0	30	70	3	OE
6	CM 351	Data and Visual Analytics in AI Lab	0 – 0 – 3	30	70	1.5	PC
7	CM 352	Professional Elective Lab	0 – 0 – 3	30	70	1.5	PE
8	CM 353	Summer Internship	0 – 0 – 0	100	-	1.5	PR
9	CM SL3	Skill Oriented Course – III	1 – 0 – 2	100	-	2	SC
Total			16 – 0 – 8	410	490	21.5	

Semester VI (Third Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 321	Natural Language Processing	3 – 0 – 0	30	70	3	PC
2	CM 322	Machine Learning	3 – 0 – 0	30	70	3	PC
3	CM 323	Soft Computing	3 – 0 – 0	30	70	3	PC
4	CM 324	Professional Elective – II	3 – 0 – 0	30	70	3	PE
5	CM 325	Open/Job-Oriented Elective – II	3 – 0 – 0	30	70	3	OE
6	CM 361	Natural Language Processing Lab	0 – 0 – 3	30	70	1.5	PC
7	CM 362	Machine Learning Lab	0 – 0 – 3	30	70	1.5	PC
8	CM 363	Term Paper / Seminar	0 – 0 – 3	100	-	1.5	PR
9	CM SL4	Skill Oriented Course – IV	1 – 0 – 2	100	-	2	SC
Total			16 – 0 – 11	410	490	21.5	

Internship minimum 6 weeks (Mandatory) during summer vacation (will be evaluated in Seventh semester)

Semester VII (Fourth Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 411	Humanities & Social Sciences Elective	3 – 0 – 0	30	70	3	HS
2	CM 412	Professional Elective – III	3 – 0 – 0	30	70	3	PE
3	CM 413	Professional Elective – IV	3 – 0 – 0	30	70	3	PE
4	CM 414	Professional Elective – V (MOOCS)	0 – 0 – 0	-	100	3	PE
5	CM 415	Open/Job-Oriented Elective – III	3 – 0 – 0	30	70	3	OE
6	CM 416	Open Elective – IV (MOOCS)	0 – 0 – 0	-	100	3	OE
7	CM 451	Industrial Internship / Professional Certification	0 – 0 – 3	100	-	3	PR
8	CM SL5	Skill Oriented Course – V	1 – 0 – 2	100	-	2	SC
Total			13 – 0 – 5	320	480	23	

Semester VIII (Fourth Year)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM 461	Project Work, Seminar and Internship in Industry	0 – 0 – 12	30	70	12	PR
Total			0 – 0 – 12	30	70	12	

Skill Courses

Skill Oriented Courses (Basic)	Skill Oriented Course (Advanced)
A. Web Design & Development	A. Mobile App Development
B. Programming with C++	B. Soft Skills
C. 2D - Computer Animation	C. Ethical Hacking
D. Server-side Scripting	D. Computer Animation

Professional Elective Courses

V & VI Semesters		VII & VIII Semesters	
Code	Course Title	Code	Course Title
CMEL01	Cloud Computing	CMEL09	Deep Learning
CMEL02	Interactive Computer Graphics	CMEL10	Block Chain Technologies
CMEL03	Cryptography & Network Security	CMEL11	Optimization Techniques for ML
CMEL04	Digital Image Processing	CMEL12	Robotic Process Automation
CMEL05	Business Intelligence & Analytics	CMEL13	Augmented and Virtual Reality
CMEL06	Quantum Computing	CMEL14	Human Computer Interaction
CMEL07	Web Services	CMEL15	Cyber Security
CMEL08	Industry Recommended Course	CMEL16	Industry Recommended Course

Humanities and Social Science Elective Courses

Code	Course Title	Code	Course Title
HSEL1	Industrial Management & Entrepreneurship	HSEL3	Introduction To Industrial Management
HSEL2	Economics For Engineers	HSEL4	Project Management & Entrepreneurship

Open Electives Offered by CSE (AI & ML) for other depts

Code	Course Title	Code	Course Title
CMOL1	Artificial Intelligence	CMOL2	Programming in C++

Job-Oriented Elective Courses

Code	Course Title	Code	Course Title
JOEL21	Open Source Systems	JOEL22	Machine Learning

Courses offered for Minor in Computer Science & Engineering (AI & ML)
(Offered for ChE / CE / ECE / EEE / ME branch students)

S. No.	Course Code	Course Title	Hours Per Week	Scheme of Examination			Category Code
			L – T – P	INT	EXT	Credits	
1	CM MR1	Introduction to Artificial Intelligence	3 – 1 – 0	30	70	4	PC
2	CM MR2	Machine Learning	3 – 1 – 0	30	70	4	PC
3	CM MR3	Data Analytics	3 – 1 – 0	30	70	4	PC
4	CM MR4	Soft Computing	3 – 1 – 0	30	70	4	PC
5	CM MR5	MOOCS – I	0 – 0 – 0	-	-	2	PC
6	CM MR6	MOOCS – II	0 – 0 – 0	-	-	2	PC

Note: Two courses to be done through MOOCs (12 weeks duration) with the acceptance of CSE (AI & ML) BoS

List of MOOCS

- | |
|--|
| <ul style="list-style-type: none"> A. Natural Language Processing B. Deep Learning C. Data Science for Engineers D. Robotics |
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