



R.V.COLLEGE OF ENGINEERING

(Autonomous Institution Affiliated to VTU, Belagavi)

R.V. Vidyaniketan Post, Mysore Road

Bengaluru – 560 059



Bachelor of Engineering (B.E.) Scheme and Syllabus for III - VIII Semesters

2016 SCHEME

INFORMATION SCIENCE & ENGINEERING

Department Vision

To be the hub for innovation in Information Science & Engineering through Teaching, Research, Development and Consultancy; thus make the department a well known resource centre in advanced, sustainable and inclusive technology.

Department Mission

ISE1: To enable students to become responsible professionals, strong in fundamentals of information science and engineering through experiential learning.

ISE2: To bring research and entrepreneurship into class rooms by continuous design of innovative solutions through research publications and dynamic development oriented curriculum.

ISE3: To facilitate continuous interaction with the outside world through student internship, faculty consultancy, workshops, faculty development programmes, industry collaboration and association with the professional societies.

ISE4: To create a new generation of entrepreneurial problem solvers for a sustainable future through green technology with an emphasis on ethical practices, inclusive societal concerns and environment.

ISE5: To promote team work through inter-disciplinary projects, co-curricular and social activities.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To provide adaptive and agile skills in Information Science and Engineering needed for professional excellence / higher studies /Employment, in rapidly changing scenarios.

PEO2: To provide students a strong foundation in basic sciences and its applications to technology.

PEO3: To train students in core areas of Information science and Engineering, enabling them to analyze, design and create products and solutions for the real world problems, in the context of changing technical, financial, managerial and legal issues.

PEO4: To inculcate leadership, professional ethics, effective communication, team spirit, multi-disciplinary approach in students and an ability to relate Information Engineering issues to social and environmental context.

PEO5:To motivate students to develop passion for lifelong learning, innovation, career growth and professional achievement.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO	Description
PSO1	Recognize and appreciate the principles of theoretical foundations, data organization, data communication, security and data analytical methods in the evolving technology
PSO2	Learn the applicability of various system software for the development of quality products in solving real-world problems with a focus on performance optimization
PSO3	Demonstrate the ability of team work, professional ethics, communication and documentation skills in designing and implementation of software products using the SDLC principles

Lead Society:

Program Criteria

All programs seeking accreditation from the Computing Accreditation Commission of ABET must demonstrate that they satisfy all of the specific Program Criteria implied by the program title.

PROGRAM CRITERIA FOR COMPUTER SCIENCE AND SIMILARLY NAMED COMPUTING PROGRAMS

Lead Society: CSAB

Computer Science	<ol style="list-style-type: none">1. Coverage of fundamentals of algorithms, data structures, software design, concepts of programming languages and computer organization and architecture.[CS]2. An exposure to a variety of programming languages and systems.[CS]3. Proficiency in at least one higher-level language. [CS]4. Advanced course work that builds on the fundamental course work to provide depth. [CS]
Information Technology	<ol style="list-style-type: none">1. The core information technologies of human computer interaction, information management, programming, networking, web systems and technologies. [IT]2. information assurance and security.[IT]3. System administration and maintenance. [IT]4. System integration and architecture. [IT]

R.V. College of Engineering, Bengaluru- 560059
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FIRST SEMESTER CREDIT SCHEME FOR PHYSICS CYCLE

(COMMON TO ALL PROGRAMS)								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	SS (EL)	
1	16MA11	Applied Mathematics-I	Maths	3	1	0	1	5
2	16PH12	Engineering Physics (Theory and Practice)	Physics	4	0	1	0	5
3	16CV13	Elements of civil Engineering	CV	4	1	0	0	5
4	16ME14	Computer Aided Engineering Drawing (Theory and Practice)	ME	1	0	2	0	3
5	16EE15	Elements of Electrical Engineering	EE	4	0	0	1	5
6	16HSC16	Constitution of India and Legal Studies for Engineers	HSS	2	0	0	0	2
7	16HSK17*	Kannada*	HSS	1	0	0	0	0
		Total No. of Credits						25
		No. Of Hrs.		19	04	6	8**	29

***Mandatory Audit course 1 Hr per week**

**** Non contact hours**

R.V. College of Engineering, Bengaluru- 560059
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FIRST SEMESTER CREDIT SCHEME FOR CHEMISTRY CYCLE

(COMMON TO ALL PROGRAMS)								
Sl.No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	SS (EL)	
1	16MA11	Applied Mathematics-I	Maths	3	1	0	1	5
2	16CH12	Engineering Chemistry (Theory and Practice)	Chemistry	4	0	1	0	5
3	16CS13	Programming in C (Theory and Practice)	CS	4	0	1	0	5
4	16EC14	Basics of Electronic Engineering	ECE	4	0	0	1	5
5	16ME15	Basics of Mechanical Engineering (Theory and Practice)	ME	4	0	1	0	5
6	16HSE16*	Professional Practice-I (Communicative English)	HSS	2	0	0	0	0
		Total No. of Credits						25
		No. Of Hrs.		21	2	6	8**	29

***Mandatory Audit course 2 Hrs per week**

**** Non contact hours**

1Hr. Theory= 1 credit

2Hrs. Practical=1credit

2Hrs. Tutorial=1 credit

4Hrs. SS(EL) = 1 Credit

R.V. College of Engineering, Bengaluru- 560059
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SECOND SEMESTER CREDIT SCHEME FOR PHYSICS CYCLE

(COMMON TO ALL PROGRAMS)								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	SS (EL)	
1	16MA21	Applied Mathematics-II	Maths	3	1	0	1	5
2	16PH22	Engineering Physics (Theory and Practice)	Physics	4	0	1	0	5
3	16CV23	Elements of civil Engineering	CV	4	1	0	0	5
4	16ME24	Computer Aided Engineering Drawing (Theory and Practice)	ME	1	0	2	0	3
5	16EE25	Elements of Electrical Engineering	EE	4	0	0	1	5
6	16HSC26	Constitution of India and Legal Studies for Engineers	HSS	2	0	0	0	2
7	16HSK27*	Kannada*	HSS	1	0	0	0	0
		Total No. of Credits						25
		No. Of Hrs.		19	04	6	8**	29

***Mandatory Audit course 1 Hr per week**

**** Non contact hours**

R.V. College of Engineering, Bengaluru- 560059
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SECOND SEMESTER CREDIT SCHEME FOR CHEMISTRY CYCLE

SEMESTER (COMMON TO ALL PROGRAMS)								
Sl.No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	SS (EL)	
1	16MA21	Applied Mathematics-II	Maths	3	1	0	1	5
2	16CH22	Engineering Chemistry (Theory and Practice)	Chemistry	4	0	1	0	5
3	16CS23	Programming in C (Theory and Practice)	CS	4	0	1	0	5
4	16EC24	Basics of Electronic Engineering	ECE	4	0	0	1	5
5	16ME25	Basics of Mechanical Engineering (Theory and Practice)	ME	4	0	1	0	5
6	16HSE26*	Professional Practice-I (Communicative English)	HSS	2	0	0	0	0
		Total No. of Credits						25
		No. Of Hrs.		21	2	6	8**	29

*Mandatory Audit course 2 Hrs per week

** Non contact hours

1Hr. Theory= 1 credit

2Hrs. Practical=1credit

2Hrs. Tutorial=1 credit

4Hrs. SS (EL) = 1 Credit

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THIRD SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1.	16MA31A	Fourier series,Laplace transforms and Linear algebra	Maths	3	1	0	0	4
2.	16EB32	Biology for Engineers	BT	2	0	0	0	2
3.	16IS33	Discrete Mathematical Structures	ISE	3	1	0	0	4
4.	16IS34	Computer Organization and Architecture	ISE	4	0	0	1	5
5.	16IS35	Data Structures and File Structures	ISE	3	0	1	1	5
6.	16IS36	Object Oriented Programming using C++	ISE	3	0	1	1	5
7.	16DCS37	Bridge Course C Programming *	CSE	2	0	0	0	0
Total number of Credits								27
Total Number of Hours / Week								

FOURTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1	16MA41A	Graph & Probability Theory	Maths	3	1	0	0	4
2	16ET42	Environmental Technology	BT	2	0	0	0	2
3	16IS43	Operating Systems	ISE	3	1	0	0	4
4	16IS44	Design and Analysis of Algorithms	ISE	3	0	1	1	5
5	16IS45	Micro controllers and Embedded Systems	ISE	3	0	1	1	5
6	16IS46	Unix System Programming	ISE	3	0	1	1	5
7	16HSE47	Professional Practice-II (Team Work and Professional Ethics)\$	HSS	0	0	0	0	1
8	16DMA48	Bridge Course Mathematics	Maths	2	0	0	0	0
Total number of Credits								28
Total Number of Hours / Week								

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FIFTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
8.	16HSI51	IPR & Entrepreneurship	HSS	3	0	0	0	3
9.	16IS52	Theory of Computation	ISE	3	0	0	0	3
10.	16IS53	Computer Networks	ISE	3	1	0	0	4
11.	16IS54	Introduction to Parallel Programming	ISE	3	0	1	1	5
12.	16IS55	System Software	ISE	3	0	1	1	5
13.	16IS5AX	Elective A (PE)	ISE	3	0	0	1	4
14.	16GB5XX	Elective B (OE)	ISE	4	0	0	0	4
Total number of Credits								28
Total Number of Hours / Week								

Elective A (PE)		Elective B (OE)	
16IS5A1	Natural Language Processing with Python	16G5B09	Introduction to Management Information System
16IS5A2	Management Information System		
16IS5A3	Information Theory and Coding		
16IS5A4	Java and J2EE		
16IS5A5	Advanced Algorithm		

SIXTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1.	16HEM61	Foundations of Management & Economics	HSS	2	0	0	0	2
2.	16IS62	Web Programming	ISE	3	0	0	0	3
3.	16IS63	Software Engineering and Testing	ISE	3	0	1	1	5
4.	16IS64	Database Management System	ISE	3	0	1	1	5
5.	16IS6CX	Elective C (PE)	ISE	3	0	0	1	4
6.	16IS6DX	Elective D (PE)	ISE	4	0	0	0	4
7.	16GE6XX	Elective E(O E)	ISE	3	0	0	0	3

8.	16HSE68	Professional Practice-III (Employability Skills and Professional Development of Engineers)\$\$	HSS	1	0	0	0	1
Total number of Credits								27
Total Number of Hours / Week								

*Mandatory Audit course for lateral entry diploma students

** Non-contact hours

Elective C (PE)	Elective Title	Elective D (PE)	Elective Title	Elective E (OE)	Elective Title
16IS6C1	Information Security	16IS6D1	Machine Learning and Pattern Recognition	16GE6E09	Introduction to Mobile Application Development
16IS6C2	System Simulation and Modeling	16IS6D2	Wireless Sensor Networks		
16IS6C3	Supply Chain Management	16IS6D3	Fuzzy Logic and Genetic Algorithm		
16IS6C4	Mobile Application Development	16IS6D4	Advanced Compiler Design		
16IS6C5	Data Storage Technologies and Networking	16IS6D5	Computer System Performance Analysis		

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SEVENTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1	16IS71	Human Computer Interaction	ISE	3	0	0	0	3
2	16IS72	Data Science and Engineering	ISE	4	0	1	0	5
3	16IS73	Cryptography and Network Security	ISE	4	0	1	0	5
4	16IS7FX	Elective F (PE)	ISE	4	0	0	0	4
5	16IS7GX	Elective G(PE)	ISE	4	0	0	0	4
6	16G7HXX	Elective H (OE)	ISE	3	0	0	0	3
Total number of Credits								24
Total Number of Hours / Week								

Elective F (PE)	Elective Title	Elective G(PE)	Elective Title	Elective H (OE)	Elective Title
16IS7F1	Internet of Things	16IS7G1	Image Processing and Computer Vision	16G7HXX	Introduction to Internet of Things
16IS7F2	Software Defined Networks	16IS7G2	Cyber Security and Digital Forensics		
16IS7F3	Software Architecture	16IS7G3	Information Retrieval		
16IS7F4	Cloud Computing	16IS7G4	Big Data Analytics		

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1	16ISP81	Major Project		0	0	16	0	16
2	16ISS82	Technical Seminar		0	0	2	0	2
3	16HSS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total number of Credits								20
Total Number of Hours / Week								