



Estd. 1962  
NAAC 'A' Grade

SHIVAJI UNIVERISTY, KOLHAPUR-416 004. MAHARASHTRA

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दुरध्वनी (ईपीएबीएक्स) २६०९०००० (अभ्यास मंडळे विभाग— २६०९०९४)

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SU/BOS/Sci & Tech./0551

Date : 17/09/2019

To,

**The Principal,**  
All Affiliated Colleges/Institutions  
Shivaji University,  
Kolhapur

**Subject: Regarding minor changes in Structure and practical syllabus of B.Sc. Computer Science (Entire) under the Faculty of Science and Technology.**

**Sir/Madam,**

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the minor changes in **Sturcture of B. Sc. Computer Science (Entire) Part I, II and III** and Practical Syllabus of B.Sc. Part II under the Faculty of Science and Technology.

A soft copy containg of Structure and practical syllabus is atatched herewith and it is also made available on university website [www.unishivaji.ac.in](http://www.unishivaji.ac.in).**(Online syllabus)**

You are therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

**Yours faithfully,**

**Dy. Registrar**

**Copy to:**

1) I/c Dean, Faculty of Science and Technology	7) B. Sc./ M. Sc. Exam Section
2) Director, Board of Examinations & Evaluation	8) IT Cell
3) Chairman, All BOS and Ad-hoc board	9) P.G.Admission
4) Appointment Section	10) P.G.Seminar.
5) Affilation Section T-1/T-2	11) Director, Centre for Distance Education
6) Eligibility Section	

**B. Sc. Part – I (Computer Science Entire) CBCS PATTERN(2018 – 19)**

**SEMESTER – I**

Sr. No.	Course Title	TEACHING SCHEME						EXAMINATION SCHEME						
		THEORY			PRACTICAL			THEORY			PRACTICAL			
		No. of lectures	Hours	Credits	No. of lectures	Hours	Credits	Hours	Max	Min	Hours	Max	Min	
1	DSC-101	3	2.4	2	4	3.2	2	2	50	20	<b>PRACTICAL EXAMINATION IS ANNUAL</b>			
2	DSC-102	3	2.4	2										
3	GEC-103	3	2.4	2										
4	GEC-104	3	2.4	2										
5	GEC-105	3	2.4	2										
6	GEC-106	3	2.4	2										
7	GEC-107	3	2.4	2										
8	GEC-108	3	2.4	2										
9	AECC-A	4	3.2	2				--	--	--				
	<b>TOTAL</b>	<b>28</b>	<b>22.4</b>	<b>18</b>	<b>16</b>	<b>12.8</b>	<b>8</b>		<b>450</b>					

**SEMESTER – II**

1	DSC-201	3	2.4	2	4	3.2	2	2	50	20	<b>As per BOS Guide-lines</b>		100	40
2	DSC-202	3	2.4	2										
3	GEC-203	3	2.4	2										
4	GEC-204	3	2.4	2										
5	GEC-205	3	2.4	2										
6	GEC-206	3	2.4	2										
7	GEC-207	3	2.4	2										
8	GEC-208	3	2.4	2										
9	AECC-B	4	3.2	2				--	--	--				
		<b>28</b>	<b>24.4</b>	<b>18</b>	<b>16</b>	<b>12.8</b>	<b>8</b>		<b>450</b>		<b>Theory</b>	<b>Practical</b>		
	<b>TOTAL</b>	<b>56</b>	<b>48.8</b>	<b>36</b>	<b>32</b>	<b>25.6</b>	<b>16</b>	<b>900</b>			<b>450+450= 900</b>	<b>400</b>		

- Student contact hours per week : 35.2 Hrs (minimum)
- Theory and Practical Lectures : 48 Minutes Each
- CC- Core Course: Two Computer Courses (Subjects) and GEC – Generic Elective Course: Three Courses (Electronics, Mathematics & Statistics) from the B. Sc. Part – I Computer Science Entire curriculum.
- AECC- Ability Enhancement Compulsory Course (A & B) – English for Communication.
- *Separate passing for each theory paper of 50 marks each. Minimum 20 (40%) marks out of 50 are required for passing.*
- *Practical Examination conducted annually will be of 100 Marks for each course except English and minimum 40 marks are required for passing.*
- *Separate passing for theory and practical.*

• Total Marks for B.Sc.-I (Including English) : **1300**

• Total Credits for B.Sc.-I (Semester I & II) : **52**

**B. Sc. Part – II (Computer Science Entire) CBCS PATTERN(2019 – 20)**

**SEMESTER – III**

Sr. No.	Course Title	TEACHING SCHEME						EXAMINATION SCHEME						
		THEORY			PRACTICAL			THEORY			PRACTICAL			
		No. of lectures	Hours	Credits	No. of lectures	Hours	Credits	Hours	Max	Min	Hours	Max	Min	
1	DSC-301	4	3.2	3	4	3.2	2	2	50	20	<b>PRACTICAL EXAMINATION IS ANNUAL</b>			
2	DSC-302	4	3.2	3										
3	GEC-303	4	3.2	3	4	3.2	2	2	50	20				
4	GEC-304	4	3.2	3										
5	GEC-305	4	3.2	3	4	3.2	2	2	50	20				
6	GEC-306	4	3.2	3										
7	SEC-I	--	--	--	4	3.2	2	--	--	--				
8	AECC-C	4	3.2	4	--	--	--	--	--	--				
	<b>TOTAL</b>	<b>28</b>	<b>22.4</b>	<b>22</b>	<b>16</b>	<b>12.8</b>	<b>08</b>		<b>300</b>					

**SEMESTER – IV**

1	DSC-401	4	3.2	3	4	3.2	2	2	50	20	<b>As per BOS Guide-lines</b>	100	40
2	DSC-402	4	3.2	3									
3	GEC-403	4	3.2	3	4	3.2	2	2	50	20			
4	GEC-404	4	3.2	3									
5	GEC-405	4	3.2	3	4	3.2	2	2	50	20			
6	GEC-406	4	3.2	3									
7	SEC-II	--	--	--	4	3.2	2	--	--	--	SEC I	50	20
											SEC II	50	20
8	AECC-D	--	---	---	---	---	---	3	70 + 30	25 + 10	Theory	Practical	
	<b>TOTAL</b>	<b>24</b>	<b>19.2</b>	<b>18</b>	<b>16</b>	<b>12.8</b>	<b>08</b>		<b>100</b>	<b>35</b>	<b>300+400 =700</b>	<b>400</b>	
		<b>52</b>	<b>41.6</b>	<b>40</b>	<b>32</b>	<b>25.6</b>	<b>16</b>		<b>400</b>				

- Student contact hours per week : 44.2 Hrs (minimum)
- Theory and Practical Lectures : 48 Minutes Each
- Total Marks for B.Sc.-II (Including Env. St.) : **1100**
- Total Credits for B.Sc.-II (Semester III & IV) : **56**

- **DSC-** Discipline Specific Core Course: Two Computer Courses (Subjects) and
- **GEC** – Generic Elective Course: Two Courses (Electronics & Mathematics) from the B. Sc. Part – II Computer Science Entire curriculum. **SEC:** Skill Enhancement Course.
- **AECC-** Ability Enhancement Compulsory Course: Environmental Studies
- **AECC-C:** Environmental Studies Theory of 70 marks. Minimum 25 marks out of 70 are required for passing.
- **AECC-D:** Project 30 marks. Minimum 10 marks out of 30 are required for passing.
- *Separate head of passing for each theory paper of 50 marks each.*
- *Minimum 20 (40%) marks out of 50 are required for passing.*
- *Except Environmental Studies, Practical Examination for each course shall be conducted annually for 100 marks and minimum 40 (40%) marks are required for passing.*
- *There shall be no theory examination for SEC courses. The practical examination for SEC shall be conducted annually of 50 marks each and 20 (40%) marks are required for passing.*
- *The practical examination for SEC shall be conducted internally.*
- *Separate head of passing for theory and practical.*

## B. Sc. Part – III Computer Science Entire CBCS PATTERN (2020-21)

SEMESTER – V													
Sr. No.	Subject Title	TEACHING SCHEME						EXAMINATION SCHEME					
		THEORY			PRACTICAL			THEORY					PRACTICAL
		No. of lectures	Hours	Credits	No. of lectures	Hours	Credits	University			Internal		Hours
Hours	Max Marks							Min Marks	Max Marks	Min Marks			
1	DSE-501	4	3.2	3	5	4	2	2	40	16	10	4	<b>PRACTICAL EXAMINATION IS ANNUAL</b>
2	DSE-502	4	3.2	3	5	4	2	2	40	16	10	4	
3	DSE-503	4	3.2	3	--	--	--	2	40	16	10	4	
4	DSE-504 / DSE-505	4	3.2	3	--	--	--	2	40	16	10	4	
5	SEC-III	--	--	--	5	4	2	--	--	--	--	--	
6	PW	--	--	--	5	4	2	--	--	--	--	--	
7	AECC-E	4	3.2	2	---	---	---	2	40	16	10	4	
	<b>TOTAL</b>	<b>20</b>	<b>16</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>8</b>		<b>200</b>		<b>50</b>		

SEMESTER – VI																
Sr. No.	Subject Title	No. of lectures	Hours	Credits	No. of lectures	Hours	Credits	Hours	Max Marks	Min Marks	Max Marks	Min Marks	As per BOS Guide lines	Hours	Max Marks	Min Marks
1	DSE-601	4	3.2	3	5	4	2	2	40	16	10	4	As per BOS Guide lines	100	40	
2	DSE-602	4	3.2	3	5	4	2	2	40	16	10	4		100	40	
3	DSE-603	4	3.2	3	--	--	--	2	40	16	10	4		100 PW	40	
4	DSE-604 / DSE-605	4	3.2	3	--	--	--	2	40	16	10	4				
5	SEC-IV	--	--	--	5	4	2	--	--	--	--	--	SEC III	50	20	
6	PW	--	--	--	5	4	2	--	--	--	--	--	SEC IV	50	20	
7	AECC-F	4	3.2	2	---	---	---	2	40	16	10	4				
	<b>TOTAL</b>	<b>16</b>	<b>16</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>8</b>		<b>200</b>		<b>50</b>		<b>Theory</b>	<b>Practical</b>		
		<b>32</b>	<b>32</b>	<b>28</b>	<b>40</b>	<b>32</b>	<b>16</b>						<b>250+250= 500</b>	<b>400</b>		

- Student contact hours per week : 32 Hours (Min)
- Total Marks for B.Sc.-III (Including English.) : **900**
- Theory and Practical Lectures : 48 Min. Each
- Total Credits for B.Sc.-III (Semester V & VI) : **44**

- **CC-** Core Course, **DSE:** Discipline Specific Elective Course, **SEC:** Skill Enhancement Course,
- **AECC-** Ability Enhancement Compulsory Course (E & F): English for communication.
- *Separate passing for each theory paper of 50 marks. Minimum 20 (16+4) marks out of 50 are required for passing.*
- *Practical Examination will be conducted annually for 200 marks. Out of which 100 marks for DSE-501 & DSE-601 combined and 100 marks for DSE-502 & DSE-602 combined. Minimum 40 (40%) marks are required for passing in each case.*
- *Project Work will be evaluated for 100 marks and minimum 40 (40%) out of 100 are required for passing.*
- *There will be no theory examination for SEC courses. The practical examination for SEC will be conducted annually of 50 marks each and 20 (40%) marks are required for passing.*
- *The practical examination for SEC shall be conducted internally.*
- *Separate passing for theory, practical and project.*

	B.Sc. – I	B.Sc. – II	B.Sc. – III	Total
Credits	52	56	44	152
Marks	1300	1100	900	3300

**B.Sc. II Computer Science Entire****ELECTRONICS****LAB COURSE: 06 (ELECTRONICS PRACTICAL)**

<b>Sr. No.</b>	<b>GROUP-A</b>
<b>Part-I</b>	
1	Study of Gray to binary and Binary to Gray converter
2	Study of 2 –bit serial Up/down counter ( IC-7473)
3	Study of 4-bit Ring & Johnson counter using D / JK Flip-Flops
4	Study of Decimal to BCD as Priority Encoder using IC-74147
5	Study of Digital single Bit / Magnitude Comparator.
6	Study of 4-bit asynchronous counter using IC-7476 or equivalent
7	Study of 4 bit Shift Register (SISO) using IC-7474 or equivalent
<b>Part-II</b>	
8	Study of DAC (R-2R Ladder)
9	Study of ADC (3 bit Flash) IC or Discrete
10	Study of Analog Multiplexers (8:1/4:1)
11	Study of characteristics of LM 35/ PT-100
12	Study of Instrumentation amplifier using Op. Amp.
13	Study of LDR based light control system
14	Study of op.amp as an Integrator and Differentiator

Sr. No.	GROUP-B
<b>Part-III</b>	
1	Interfacing of LED / Relay /Optocoupler with 8051
2	Interfacing of Thumb wheel switch / 7- Segment display with 8051
3	Time delay generation using timers ( Mode 1 OR Mode 2 ) of 8051 (using simulator or kit)
4	Interfacing of Stepper motor with 8051
5	Interfacing of DC motor ( PWM ) with 8051
6	Arithmetic / Logical operations using 8051 C (using Simulator)
7	Interfacing of DAC with 8051 to generate Triangular & Square / Staircase wave
<b>Part - IV</b>	
8	Study of Amplitude Modulator and Demodulator.
9	Study of Frequency Modulator.
10	Study of ASK Modulator
11	Study of FSK modulator
12	Study of BPSK Modulator
13	Study of Pulse Amplitude Modulation
14	Study of Pulse Width Modulation

*Note: Each student has to perform minimum 22 out of 28 experiments with at least 5 experiments from each part.*

## B.Sc. II Computer Science Entire

### Examination scheme for Practical

- 1) The practical examination shall carry 100 marks.
- 2) Every student has to perform total **Two** experiments, one experiment from Group – A and one experiment from Group-B.
- 3) Each session of practical examination shall be of three hours. There shall be two sessions per day.
- 4) Each batch shall be called for examination only one day.

### **Distribution of Marks**

Group	Group -A	Group -B	Journal	Total
	Part- I and II	Part – III and IV		
Marks	44	44	12	100

### **Total Workload**

*Theory Workload shall be of 08 lectures per week per semester*  
Semester III

Paper No.	Code	Title of the Paper	Total Marks	Theory Lectures Per week
V	GEC-303	Computer Organization	50	4
VI	GEC-304	Computer Instrumentation	50	4

### Semester IV

Paper No.	Code	Title of the Paper	Total Marks	Theory Lectures Per week
VII	GEC-403	Microcontroller Architecture & Programming	50	4
VIII	GEC-404	Communication Techniques	50	4

**\*Practical Workload shall be of 04 lectures per week per batch of 20 students**

**Practical Examination is Annual**