

# सोलापूर विद्यापीठ, सोलापूर

सोलापूर पुणे राष्ट्रीय महामार्ग,  
केगाव, सोलापूर-४१३ २५५.  
दुरध्वनी क्र-२१७-२७४४७७८.  
फॅक्स क्र-०२१७-२७४४७७८.



# SOLAPUR UNIVERSITY

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संदर्भ क्रमांक-सोविसो/अभ्यासमंडळे /२०१५-१६/ 4780

दिनांक. 18/२०१५.

19 AUG 2015

(परिपत्रक)

प्रस्तुत विद्यापीठाशी संलग्नित सर्व कला, वाणिज्य, विज्ञान, विधी, शिक्षणशास्त्र व अभियांत्रिकी महाविद्यालयांचे प्राचार्य व विद्यापीठ परिसरातील सर्व संकुलाचे संचालक यांना कळविण्यात येते की, दि.२३/०२/२०१५ रोजी राजभवन, मुंबई येथे झालेल्या जे.बी.व्ही.सी.च्या बैठकीतील निर्णयांच्या अंमलबजावणीचा आढावा घेण्यासाठी महाराष्ट्र शासनाने दिनांक १५/०५/२०१५ रोजी बैठक आयोजित केली होती. सदरील बैठकीत निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) लागू करण्याबाबत सखोल चर्चा करून त्याची अंमलबजावणी सन २०१५-१६ पासून सर्व अकृषी विद्यापीठे व संलग्नित महाविद्यालयात करण्याबाबत निर्णय घेण्यात आला आहे.

महाराष्ट्र शासनाने दिनांक १५/५/२०१५ रोजीच्या बैठकीत घेतलेल्या निर्णयाच्या अनुषंगाने कार्यवाही करण्यासाठी सोलापूर विद्यापीठात सर्व संलग्नित महाविद्यालयाचे प्राचार्य, स्थायी/अस्थायी अभ्यासमंडळाचे अध्यक्ष व सर्व विद्याशाखांचे अधिष्ठाता आणि विद्यापीठ परिसरातील सर्व संकुलाचे संचालक, शिक्षक व अधिकारी यांची दि.२५ मे, २०१५ रोजी विद्यापीठ सभागृहात विद्यापीठाच्या पदवी व पदव्युत्तर अभ्यासक्रमांना निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) लागू करण्याबाबत व सदर निवड आधारित श्रेयांक प्रणाली कशी राबवावी याबाबत कार्यशाळेचे आयोजन करण्यात आले होते. या कार्यशाळेत साधन व्यक्ती म्हणून डॉ.आर.डी.कपले प्राध्यापक, भूशास्त्र संकुल, स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड तसेच डॉ.वाय.एम.जयराज सेवानिवृत्त प्राध्यापक, गुलबर्गा विद्यापीठ, गुलबर्गा यांनी मार्गदर्शन केले.

वरील निर्णयाच्या अनुषंगाने निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) शैक्षणिक वर्ष २०१५-१६ पासून लागू करण्यासंदर्भात चर्चा करण्यासाठी मा.कुलगुरु महोदयांच्या अध्यक्षतेखाली मंगळवार दिनांक २३/६/२०१५ रोजी दुपारी ०२.३० वा विद्यापीठामध्ये सर्व विद्याशाखेचे अधिष्ठाता व संवैधानिक अधिकारी यांची संयुक्त बैठक आयोजित करण्यात आली होती.

सदरच्या बैठकीत शैक्षणिक वर्ष २०१५-१६ पासून पदव्युत्तर अभ्यासक्रमांच्या प्रथम वर्षास निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) लागू करून सर्व विद्याशाखेच्या अभ्यासक्रमाचा आराखडा (Structure) ७०-३० प्रमाणे ठेवण्यात यावा असा निर्णय घेण्यात आला.

वरीलप्रमाणे निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) लागू करण्यासंदर्भात झालेल्या निर्णयाची माहिती आपल्या महाविद्यालयातील संबंधित शिक्षक, प्रशासकीय अधिकारी/कर्मचारी व विद्यार्थी यांच्या निदर्शनास आणून देवून त्यानुसार कार्यवाही करण्याबाबत सर्व संबंधितांना सुचित करावे.



(आर.वाय.पाटील)  
प्रभारी कुलसचिव

जा.क्र.सोविसो/अभ्यासमंडळे विभाग/<sup>WCCO</sup> /२०१५.

दिनांक :- ऑगस्ट, २०१५.

19 AUG 2015

प्रत माहितीसाठी व योग्य त्या कार्यवाहीसाठी

- १) प्राचार्य, सोविसो संलग्नित सर्व कला, वाणिज्य, विज्ञान, अभियांत्रिकी व विधी महाविद्यालये
- २) सर्व संकुलाचे संचालक, सोलापूर विद्यापीठ, सोलापूर.

प्रत माहितीसाठी

१. कुलगुरु कार्यालय,
२. कुलसचिव कार्यालय,
३. मा.संचालक, बीसीयुडी, सोलापूर विद्यापीठ, सोलापूर.
४. मा.परीक्षा नियंत्रक, सोलापूर विद्यापीठ, सोलापूर
५. मा. वित्त व लेखाधिकारी, सोलापूर विद्यापीठ, सोलापूर
६. मा.संचालक, विद्यार्थी कल्याण विभाग, सोलापूर विद्यापीठ, सोलापूर.
७. कार्यालयीन नस्ती.

# सोलापूर विद्यापीठ

सोलापूर पुणे महामार्ग, केगांव,  
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# SOLAPUR UNIVERSITY

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संदर्भ क्र. सोविसो/अमं/२०१५-१६/

6568

दिनांक:-

14 OCT 2015

प्रति,  
मा. प्राचार्य/प्राचार्या,  
सर्व संलग्नित महाविद्यालये,  
सोलापूर विद्यापीठ,  
सोलापूर.

**विषय : निवड आधारित श्रेयांक प्रणालीच्या (Choice Based Credit System) निकषाबाबत...**

संदर्भ : या कार्यालयाचे परिपत्रक क्र. सोविसो/अभ्यासमंडळे/२०१५-१६/४७८० दि. १९ ऑगस्ट, २०१५

महोदय/महोदया,

संदर्भीय परिपत्रकानुसार शैक्षणिक वर्ष २०१५-१६ पासून पदव्युत्तर अभ्यासक्रमांच्या प्रथम वर्षास निवड आधारित श्रेयांक प्रणाली (Choice Based Credit System) लागू करण्यात आली असून, पूर्वाप्रमाणेच (CGP A पॅटर्ननुसार) अभ्यासक्रमाचा Criteria हा (७०+३० पॅटर्न) प्रमाणेच असेल त्यापैकी ७० गुण हे विद्यापीठ (U.A.) परीक्षेसाठी व ३० गुण महाविद्यालयीन स्तरावर विद्यार्थ्यांचे सातत्याने (CA-Continuous Assessment) मूल्यमापन करण्याकरीता राहतील. यामधील उत्तीर्ण होण्यासाठी - ७० पैकी २८ व ३० पैकी १२ गुण विद्यार्थ्यांना प्राप्त करणे आवश्यक आहे.

तरी उक्तबाब आपल्या महाविद्यालयातील सर्व संबंधित शिक्षक, विद्यार्थी व प्रशासकीय अधिकारी व कर्मचाऱ्यांच्या निदर्शनास आणून सहकार्य करावे ही विनंती.

कळावे,

आपली विश्वासू,

( ए.एस.साळुंखे )

सहायक कुलसचिव

प्रत माहितीस्तव :- मा.परीक्षा नियंत्रक, परीक्षा विभाग, प्रस्तुत विद्यापीठ, सोलापूर.



**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**



NAAC Accredited-2022  
'B+' Grade (CGPA 2.96)

**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Entire Computer Science**

**Name of the Course: B.Sc. I ECS (Sem.– I & II)**

**(Syllabus to be implemented from June 2022)**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Science and Technology

### Choice Based Credit System (CBCS), (w.e.f. 2022-23) Revised Structure for B.Sc.(Entire Computer Science)-I

Subject/ Core Course	Name and Type of the Paper		Paper / Practical No	Hrs./week			Total Marks Per Paper	UA	CA	Credits
	Type	Name		L	T	P				
<b>B.Sc.(Entire Computer Science)-I Sem-I</b>										
Ability Enhancement Compul- sory Course (AECC)	English Paper I Part-A (communication- skill)			4.0			50	40	10	2.0
*Core Courses	DSC 1A	Fundamental of Computer	Paper- I	2.5	--	--	50	40	10	4.0
		Basics of Operating System	Paper-II	2.5	--	--	50	40	10	
	DSC 2A	Programming using 'C'	Paper- I	2.5	--	--	50	40	10	4.0
		Python – I	Paper-II	2.5	--	--	50	40	10	
	**DSC 3A /GE-1A	Numerical Methods	Paper- I	2.5	--	--	50	40	10	4.0
		Graph Theory	Paper-II	2.5	--	--	50	40	10	
	***DSC 4A /GE- 2A	Basic Electronics	Paper- I	2.5	--	--	50	40	10	4.0
		Advanced Electronics	Paper-II	2.5	--	--	50	40	10	
		<b>Total</b>		<b>24</b>	--	--	<b>450</b>	<b>360</b>	<b>90</b>	<b>18</b>
<b>B.Sc.(Entire Computer Science)-I Sem-II</b>										
Ability Enhancement Compul- sory Course (AECC)	English Paper I Part-B (communication skill)			4.0			50	40	10	2.0
*Core Courses	DSC 1B	Introduction to Web Technology	Paper-III	2.5	--	--	50	40	10	4.0
		Operating System	Paper-IV	2.5	--	--	50	40	10	
	DSC 2B	Object Oriented Programming using C++	Paper-III	2.5	--	--	50	40	10	4.0
		Python – II	Paper-IV	2.5	--	--	50	40	10	
	**DSC 3B/GE-1B	Linear Algebra	Paper-III	2.5	--	--	50	40	10	4.0
		Discrete Mathematics	Paper-IV	2.5	--	--	50	40	10	
	***DSC 4B/GE-2B	Digital Electronics and Microprocessor	Paper-III	2.5	--	--	50	40	10	4.0
		Introduction to Microcontroller and Embedded System	Paper-IV	2.5	--	--	50	40	10	
		Democracy, Elections and Good Gov- ernance		3			50	40	10	NC
<b>Total (Theory)</b>				<b>24</b>	--	--	<b>450</b>	<b>360</b>	<b>90</b>	<b>18</b>
Core Practical	DSC 1 A & 1B	Practical I		--	--	4	100	80	20	4.0
	DSC 2 A & 2B	Practical II		--	--	4	100	80	20	4.0

DSC 3A & 3B / GE-1A&1B	Practical III		--	--	4	100	80	20	4.0
DSC 4A & 4B / GE-2A & 2B	Practical IV		--	--	4	100	80	20	4.0
<b>Total (Pract.)</b>					<b>16</b>	<b>400</b>	<b>320</b>	<b>80</b>	<b>16</b>
<b>Grand Total</b>			<b>48</b>		<b>16</b>	<b>1300</b>	<b>1040</b>	<b>260</b>	<b>52</b>
<p>*Core Courses: DSC 1A , DSC 1B, DSC 2A and DSC 2B (Core computer science courses)</p> <p>**Generic Electives: DSC 3A/GE-1A and DSC 3B/GE-1B: Mathematics</p> <p>***Generic Electives : DSC 4A/GE-2A and DSC 4B/GE-2B: Electronics</p> <p><b>Abbreviations:</b></p> <p>L: Lectures T: Tutorials P: Practical UA : University Assessment CA : College Assessment CC: Core Course  AEC : Ability Enhancement Course DSE : Discipline Specific Elective Paper SEC : Skill Enhancement Course,  AIC: Additional Interdisciplinary Courses GE: Generic Electives</p>									

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**



**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Entire Computer Science**

**Name of the Course: B.Sc. II (Sem-III & IV)**

**(Syllabus to be implemented from w.e.f. June 2020)**

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**Faculty of Science and Technology**

Subject/ Core Course	Name and Type of the Section		No. of Papers/ Practical	Hrs/week			Total Marks Per Section	UA	CA	Credits
	Type	Name		L	T	P				
<b>Class :</b>	<b>B.Sc(Entire Computer Science)- II Semester – III</b>									
<b>Core</b>	<b>DSC 1C</b>	Data Structure using C++ -I		3	-	--	50	40	10	4
		Data Structure using C++ -II		3	-	--	50	40	10	
	<b>DSC 2C</b>	Software Engineering		3	-	--	50	40	10	4
		Software Testing		3	-	--	50	40	10	
	<b>DSC 3C (GE-3)</b>	Probability Theory –I		3	-	--	50	40	10	4
		Probability Theory-II		3	-	--	50	40	10	
	<b>SEC-I</b>	Introduction to Python programming		3	-	--	50	40	10	2
<b>Total</b>				<b>21</b>	<b>-</b>	<b>--</b>	<b>350</b>	<b>280</b>	<b>70</b>	<b>14</b>
<b>Class :</b>	<b>B.Sc(Entire Computer Science)- II Semester – IV</b>									
<b>Core</b>	<b>DSC 1D</b>	Database Management System		3	-	--	50	40	10	4
		MYSQL		3	-	--	50	40	10	
	<b>DSC 2D</b>	Operating System		3	-	--	50	40	10	4
		Linux OS and Shell Scripting		3	-	--	50	40	10	
	<b>DSC 3D (GE-4)</b>	Statistics for Data Science		3	-	--	50	40	10	4
		Optimization techniques		3	-	--	50	40	10	
	<b>SEC-II</b>	Web Development using PHP		3	-	--	50	40	10	2
	<b>AECC</b>	Environmental studies		3	-	--	50	40	10	NC
<b>Total (Theory)</b>				<b>24</b>	<b>-</b>	<b>--</b>	<b>400</b>	<b>320</b>	<b>80</b>	<b>14</b>
<b>Practical's on</b>	DSC 1C , DSC 1D and SEC-I		Practical I & II	--	-	8	100	80	20	4
	DSC 2C , DSC 2D and SEC-II		Practical I & II	--	-	8	100	80	20	4
	DSC 3C & DSC 3D		Practical I & II	--	-	8	100	80	20	4
<b>Total (Practical)</b>						<b>24</b>	<b>300</b>	<b>240</b>	<b>60</b>	<b>12</b>
<b>Grand Total</b>				<b>45</b>	<b>-</b>	<b>24</b>	<b>1150</b>	<b>920</b>	<b>230</b>	<b>44</b>

**\*Core Subjects: Chemistry/Physics/Electronics/Computer**

**Science/Mathematics/Statistics/Botany/Zoology/ Microbiology/Geology/ Geography/Psychology**

**Abbreviations:**L: Lectures, T: Tutorials, P: Practical's, UA:University Assessment, CA: College

Assessment, DSC / CC: Core Course, AEC : Ability Enhancement Course, DSE : Discipline Specific

Elective Section, SEC : Skill Enhancement Course, GE : Generic Elective, CA: Continuous Assessment,

ESE: End Semester Examination



**PUNYASHLOK AHILYADEVI HOLKAR  
SOLAPUR UNIVERSITY, SOLAPUR**



**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

## **Syllabus**

**Name of the Course: B.Sc. (Entire Computer Science) - III  
(Semester –V and VI)**

**(Syllabus to be implemented w.e.f. June 2021)**

**Faculty of Science and Technology**  
**Syllabus of B.Sc. (ECS)-III (CBCS) (w.e.f. 2021-22)**

Subject/ Core Course	Name and Type of the Paper		No. of Papers/ Practical	Hrs./ Week			Total Marks per Paper	UA	CA	Credits
	Type	Name		L	T	P				
<b>Class:</b>	<b>B.Sc. (Entire Computer Science)- III Semester – V</b>									
<b>Ability Enhancement Course</b>	Paper – II Part A	English (Business English)	Paper II Part A	4	--	--	50	40	10	2.0
<b>Core</b>	DSE 1 A	Data Communication and Networking	Paper IX	4	--	--	100	80	20	4.0
	DSE 2 A	Theory of Computer Science	Paper X	4	--	--	100	80	20	4.0
	DSE 3 A	Visual Programming	Paper XI	4	--	--	100	80	20	4.0
	DSE 4 A	Advanced Java	Paper XII	4	--	--	100	80	20	4.0
<b>Skill Enhancement Course</b>	SEC 3	Advanced Python Programming	Paper XIII	4	--	--	100	80	20	4.0
<b>Total Theory Semester-V</b>				<b>24</b>			<b>550</b>	<b>440</b>	<b>110</b>	<b>22</b>
<b>Class:</b>	<b>B.Sc. (Entire Computer Science)- III Semester – VI</b>									
<b>Ability Enhancement Course</b>	Paper – II Part B	English (Business English)	Paper II Part B	4	--	--	50	40	10	2.0
<b>Core</b>	DSE 1 B	System Security	Paper XIV	4	--	--	100	80	20	4.0
	DSE 2 B	Compiler Construction	Paper XV	4	--	--	100	80	20	4.0
	DSE 3 B	Internet Programming using ASP.Net	Paper XVI	4	--	--	100	80	20	4.0
	DSE 4 B	Angular JS	Paper XVII	4	--	--	100	80	20	4.0
<b>Skill Enhancement Course</b>	SEC 4	Mobile Application Development	Paper XVIII	4	--	--	100	80	20	4.0
<b>Total Theory Semester-VI</b>				<b>24</b>			<b>550</b>	<b>440</b>	<b>110</b>	<b>22</b>
<b>Practical's on</b>	DSE 2 A and DSE 2 B		Practical IV	--	--	5	100	80	20	4.0
	DSE 3 A and DSE 3 B		Practical V	--	---	5	100	80	20	4.0
	DSE 4 A and DSE 4 B		Practical VI	--	--	5	100	80	20	4.0
	Project work		Practical VII	--	--	5	100	80	20	4.0
<b>Total (practical's)</b>						<b>20</b>	<b>400</b>	<b>320</b>	<b>80</b>	<b>16</b>
<b>Grand Total</b>				<b>48</b>	--	<b>20</b>	<b>1500</b>	<b>1200</b>	<b>300</b>	<b>60</b>
<b>Abbreviations:</b>										
L: Lectures, T: Tutorials, P: Practical, UA : University Assessment, CA : College Assessment, CC: Core Course, AEC : Ability Enhancement Course, DSE : Discipline Specific Elective Paper, SEC : Skill Enhancement Course										

## Skill Based Add – On Credit Course to be conducted in Sem. V

Name of the Paper	Hrs. / Week	Total Marks	UA	CA	Credit
<b>SWAYAM or NPTEL or MOOC Course / Internship / Industrial Training / Courses offered by College</b>	04	100 <sup>#</sup>	--	100 <sup>#</sup>	4.0

1. # - Not for SWAYAM or NPTEL or MOOC course.
2. In case of SWAYAM / NPTEL course credits should be given by SWAYAM / NPTEL / MOOC as per UGC rules.
3. If students complete SWAYAM / NPTEL / MOOC course, their marks/grades should be submitted by the college to the university.
4. Add-on College Course list should be submitted to the University for information

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**



NAAC Accredited-2022

'B++' Grade (CGPA 2.96)

**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Bachelor of Computer Application**

**Name of the Course: B.C.A. Part-I (Sem.– I & II)**

**(Syllabus to be implemented from June 2022)**

**Faculty of Science and Technology**  
**Choice Based Credit System (CBCS),(w.e.f. 2022-23) Revised Structure for**  
**BCA-I (Sem-I & II)**

Subject/ Core Course	Name and Type of the Paper		Paper / Practical No	Hrs./week			Total Marks Per Paper	UA	CA	Cred- its
	Type	Name		L	T	P				
<b>BCA-I ( Sem-I )</b>										
<b>Ability Enhancement Compulsory Course (AECC)</b>		English Paper I Part-A (Communica- tion Skill)		4.0			50	40	10	2.0
<b>*Core Courses</b>	DSC 1A	Fundamentals of Computer	Paper- I	2.5	--	--	50	40	10	4.0
		Office Automation	Paper-II	2.5	--	--	50	40	10	
	DSC 2A	Programming and Problem Solving using 'C' – I	Paper- I	2.5	--	--	50	40	10	4.0
		Web Program- ming-I	Paper-II	2.5	--	--	50	40	10	
	**DSC 3A /GE- 1A	Basics of Mathe- matics	Paper- I	2.5	--	--	50	40	10	4.0
		Descriptive Statis- tics	Paper-II	2.5	--	--	50	40	10	
	***DSC 4A /GE- 2A	Fundamentals of Electronics	Paper- I	2.5	--	--	50	40	10	4.0
		Linear Electronics	Paper-II	2.5	--	--	50	40	10	
		<b>Total</b>		<b>24</b>	--	--	<b>450</b>	<b>360</b>	<b>90</b>	<b>18</b>
<b>BCA-I ( Sem-II )</b>										
<b>Ability Enhancement Compulsory Course (AECC)</b>		English Paper I Part-B (Communi- cation Skill)		4.0			50	40	10	2.0
<b>*Core Courses</b>	DSC 1B	Introduction to Py- thon Programming	Paper-III	2.5	--	--	50	40	10	4.0
		Operating System	Paper-IV	2.5	--	--	50	40	10	
	DSC 2B	Programming and Problem Solving using 'C' – II	Paper-III	2.5	--	--	50	40	10	4.0
		Web Program- ming-II	Paper-IV	2.5	--	--	50	40	10	
	**DSC 3B/GE- 1B	Graph Theory	Paper-III	2.5	--	--	50	40	10	4.0
		Probability Thoery	Paper-IV	2.5	--	--	50	40	10	
	***DSC 4B/GE-	Digital Fundamen- tals of Computer	Paper-III	2.5	--	--	50	40	10	

	2B	Introduction of Microprocessor and Interfacing	Paper-IV	2.5	--	--	50	40	10	4.0
	Democracy, Elections and Good Governance			3			50	40	10	NC
<b>Total (Theory)</b>				<b>24</b>	--	--	<b>450</b>	<b>360</b>	<b>90</b>	<b>18</b>
<b>Core Practical</b>	DSC 1 A & 1B	Practical I		--	--	4	100	80	20	4.0
	DSC 2 A & 2B	Practical II		--	--	4	100	80	20	4.0
	DSC 3A & 3B / GE-1A&1B	Practical III		--	--	4	100	80	20	4.0
	DSC 4A & 4B / GE-2A & 2B	Practical IV		--	--	4	100	80	20	4.0
<b>Total (Pract.)</b>						<b>16</b>	<b>400</b>	<b>320</b>	<b>80</b>	<b>16</b>
<b>Grand Total</b>				<b>48</b>		<b>16</b>	<b>1300</b>	<b>1040</b>	<b>260</b>	<b>52</b>

**Punyashlok Ahilyadevi Holkar Solapur University**  
**Faculty of Science and Technology**  
**Choice Based Credit System (CBCS), (w.e.f.2020-21)**  
**Structure for B. C. A. – Part II (Science)**

Subject/ Core Course	Name and Type of the Section		No. of Papers/ Practical	Hrs/week			Total Marks Per Section	UA	CA	Credits
	Type	Name		L	T	P				
<b>Class :</b>	<b>B.C. A.- II Semester – III</b>									
<b>Core</b>	DSC1C	OOPS with C++-I	Section -I	03	--	--	50	40	10	4.0
		Data structures using 'C'- I	Section-II	03	--	--	50	40	10	
	DSC2C	Database Management System	Section-I	03	--	--	50	40	10	4.0
		Software Testing & Quality Assurance	Section-II	03	--	--	50	40	10	
	DSC3C	Web Development using PHP	Section-I	03	--	--	50	40	10	4.0
		Computer Networks-I	Section-II	03	--	--	50	40	10	
	SEC-I	Financial Accounting with Tally		06	--	--	100	80	20	4.0
<b>Total</b>				<b>24</b>	--	--	<b>400</b>	<b>320</b>	<b>80</b>	<b>16</b>
<b>Class :</b>	<b>B. C. A. - II Semester - IV</b>									
<b>Core</b>	DSC1D	OOPS with C++-II	Section -I	03	--	--	50	40	10	4.0
		Data structures using 'C'- II	Section-II	03	--	--	50	40	10	
	DSC2D	MySQL	Section-I	03	--	--	50	40	10	4.0
		Ethics and Cyber law	Section-II	03	--	--	50	40	10	
	DSC3D	Angular JS	Section-I	03	--	--	50	40	10	4.0
		Advanced Computer Networks	Section-II	03	--	--	50	40	10	
	AECC	Environmental Studies		03	--	--	50	40	10	NC
	SEC-II	Python Programming		06	--	--	100	80	20	4.0
<b>Total (Theory)</b>				<b>27</b>	--	--	<b>450</b>	<b>360</b>	<b>90</b>	<b>16</b>
<b>Core</b>	DSC 1 C & 1 D		Practical I & II	--	--	8	100	80	20	4.0
	DSC 2 C & 2 D		Practical I & II	--	--	8	100	80	20	4.0
	DSC 3 C & 3 D		Practical I & II	--	--	8	100	80	20	4.0
<b>Total (Practical)</b>						<b>24</b>	<b>300</b>	<b>240</b>	<b>60</b>	<b>12</b>
<b>Grand Total</b>				<b>51</b>	--	<b>24</b>	<b>1150</b>	<b>920</b>	<b>230</b>	<b>44</b>

\*Core Subjects: Chemistry/Physics/Electronics/Computer

Science/Mathematics/Statistics/Botany/Zoology/ Microbiology/Geology/ Geography/Psychology

**Abbreviations:** L: Lectures, T: Tutorials, P: Practical's, UA:University Assessment, CA: College Assessment, DSC / CC: Core Course, AEC : Ability Enhancement Course, DSE : Discipline Specific Elective Section, SEC : Skill Enhancement Course, GE : Generic Elective, CA: Continuous Assessment, ESE: End Semester Examination

**PUNYASHLOK AHILYADEVI HOLKAR  
SOLAPUR UNIVERSITY, SOLAPUR**



NAAC Accredited-2015 'B' Grade (CGPA 2.62)

**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Bachelor of Computer Applications**

**Name of the Course: B.C.A. III ( Sem-V & VI )**

**(Syllabus to be implemented w. e. f. June 2021)**



**Choice Based Credit System (CBCS), (w. e. f. June-2021)**

**Syllabus for B. C. A. – Part III (Science)**

Type of the Paper and paper code		Title of Paper	Hrs/Week		Total Marks per paper	UA	CA	Credits
Type	Code		L	P				
<b>B. C. A. – III Semester V</b>								
<b>Ability Enhancement Course</b>	Paper – II Part A	English (Business English)	4	-	50	40	10	2.0
DSE 1 A	Paper IX	Core Java	4	-	100	80	20	4.0
DSE 2 A	Paper X	Visual Programming	4	-	100	80	20	4.0
DSE 3 A	Paper XI	Computer Graphics	4	-	100	80	20	4.0
DSE 4 A	Paper XII	Recent Trends in IT	4	-	100	80	20	4.0
SEC 3	Paper XIII	Linux and Shell Programming	4	-	100	80	20	4.0
	<b>Total (Theory)</b>		<b>24</b>	<b>-</b>	<b>550</b>	<b>440</b>	<b>110</b>	<b>22.0</b>
<b>B. C. A. – III Semester VI</b>								
<b>Ability Enhancement Course</b>	Paper – II Part B	English (Business English)	4	-	50	40	10	2.0
DSE 1 B	Paper XIV	Advanced Java	4	-	100	80	20	4.0
DSE 2 B	Paper XV	Dot Net Technology	4	-	100	80	20	4.0
DSE 3 B	Paper XVI	Data Warehouse and Data Mining	4	-	100	80	20	4.0
DSE 4 B	Paper XVII	Cryptography and Network Security	4	-	100	80	20	4.0
SEC 4	Paper XVIII	Advanced Python	4	-	100	80	20	4.0
	<b>Total (Theory)</b>		<b>24</b>	<b>-</b>	<b>550</b>	<b>440</b>	<b>110</b>	<b>22.0</b>
<b>Practical</b>								
DSE 1A &1B	Practical IV	Practical On Core Java and Advance Java	-	5	100	80	20	4.0
DSE 2A &2B	Practical V	Practical on Visual Programming and .Net Technology	-	5	100	80	20	4.0
DSE 3A &3B	Practical VI	Practical on Computer Graphics And DM & DW	-	5	100	80	20	4.0
	Practical VII	Project	-	5	100	80	20	4.0
	<b>Total (Practicals)</b>		<b>-</b>	<b>20</b>	<b>400</b>	<b>320</b>	<b>80</b>	<b>16</b>
<b>Grand Total</b>			<b>48</b>	<b>20</b>	<b>1500</b>	<b>1200</b>	<b>300</b>	<b>60</b>

## Skill Based Add – On Credit Course to be conducted in Sem. V

Name of the Paper	Hrs. / Week	Total Marks	UA	CA	
<b>SWAYAM or NPTEL or MOOC Course / Internship / Industrial Training / Courses offered by College</b>	04	100 <sup>#</sup>	--	100 <sup>#</sup>	4.0

1. # - Not for SWAYAM or NPTEL or MOOC course.
2. In case of SWAYAM / NPTEL course credits should be given by SWAYAM / NPTEL / MOOC as per UGC rules.
3. If students complete SWAYAM / NPTEL / MOOC course, their marks/grades should be submitted by the college to the university.
4. Add-on College Course list should be submitted to the University for information

**PUNYASHLOK AHILYADEVJI HOLKAR  
SOLAPUR UNIVERSITY, SOLAPUR**



**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Computer Science**

**Name of the Course: M.Sc. I (Sem.–I & II)**

**(Syllabus to be implemented from w.e.f. June 2020)**

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. Sc. I year (Computer Science)**

**Syllabus (Semester – I and II)**

**(Choice Based Credit System)**

**With Effect from June 2020**

## 6. Structure of the Syllabus – M.Sc. (Computer Science):

### Part – I Semester-I

Paper Code	Title of the Paper	Hrs / week	Distribution of Marks for Examination			Credits
			Internal	University	Total	
<b>Hard Core - Theory</b>						
HCT 1.1	Object Oriented Programming using C++	04	20	80	100	4
HCT 1.2	Advanced DBMS	04	20	80	100	4
HCT 1.3	Data Structures and Algorithms	04	20	80	100	4
<b>Soft Core – Theory (Any One)</b>						
SCT 1.1	Software Engineering	04	20	80	100	4
SCT 1.2	UML					
<b>Hard core Lab / Project</b>						
HCP 1.1	Practical based on HCT 1.1	04	10	40	50	2
HCP 1.2	Practical based on HCT 1.2	04	10	40	50	2
HCP 1.3	Practical based on HCT 1.3	04	10	40	50	2
HCP 1.4	Project – I	02	10	40	50	2
	Tutorial	02	25	-	25	1
<b>Total</b>		<b>32</b>	<b>145</b>	<b>480</b>	<b>625</b>	<b>25</b>

### Part – I Semester-II

Paper Code	Title of the Paper	Hrs / week	Distribution of Marks for Examination			Credits
			Internal	University	Total	
<b>Hard Core – Theory</b>						
HCT 2.1	Java Programming	04	20	80	100	4
HCT 2.2	Python Programming	04	20	80	100	4
<b>Soft Core – Theory (Any One)</b>						
SCT 1.1	Computer Communication Network	04	20	80	100	4
SCT 1.2	Artificial Intelligence	04	20	80	100	4
<b>Open Elective – Theory (Any One)</b>						
OET 2.1	Office Automation	04	20	80	100	4
OET 2.2	SWAYAM Course*	--	--	--	--	4
<b>Hard core Lab / Project</b>						
HCP 2.1	Practical based on HCT 2.1	04	10	40	50	2
HCP 2.2	Practical based on HCT 2.2	04	10	40	50	2
HCP 2.3	Project – II	02	10	40	50	2
<b>Open Elective (Any One)</b>						
OEP 2.1	Practical Based on OET 2.1	04	10	40	50	2
OEP 2.2	Practical / Seminar / Viva based on SWAYAM course OET2.2					
<b>Others</b>	Tutorial	02	25	-	25	1
<b>Total</b>		<b>32</b>	<b>145</b>	<b>480</b>	<b>625</b>	<b>25</b>

\* : The credits will be transferred as per university policy and UGC guidelines after submitting the completion certificate / mark list from the SWAYAM.

**PUNYASHLOK AHILYADEVJI HOLKAR  
SOLAPUR UNIVERSITY, SOLAPUR**



**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Computer Science**

**Name of the Course: M.Sc. II (Sem.–III & IV)**

**(Syllabus to be implemented w.e.f. June 2021)**

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. Sc. II year (Computer Science)**

**Syllabus (Semester – III and IV)**

**(Choice Based Credit System)**

**With Effect from June 2021**

**M.Sc. (Computer Science) Part - II Semester-III**

Paper Code	Title of the Paper	Hrs / week	Distribution of Marks for Examination			Credits
			Internal	University	Total	
<b>Hard Core - Theory</b>						
HCT 3.1	Digital Image Processing	04	20	80	100	4
HCT 3.2	Open Source Technologies (PHP, MySql)	04	20	80	100	4
<b>Soft Core - Theory (Any One)</b>						
SCT 3.1	Network Security	04	20	80	100	4
SCT 3.2	Cloud Computing					
SCT 3.3	Mobile Computing					
<b>Open Elective - Theory (Any One)</b>						
OET 3.1	Fundamental of Web Designing	04	20	80	100	4
OET 3.2	SWAYAM Course*					
<b>Hard core Lab / Project</b>						
HCP 3.1	Practical based on HCT 3.1	04	10	40	50	2
HCP 3.2	Practical based on HCT 3.2	04	10	40	50	2
HCP 3.3	Project – III	02	10	40	50	2
<b>Open Elective (Any One)</b>						
OEP 3.1	Practical Based on OET 3.1	04	10	40	50	2
OEP 3.2	Practical / Seminar / Viva based on SWAYAM course OET 3.2					
Others	Tutorial	02	25	-	25	1
<b>Total of Sem. III</b>		<b>32</b>	<b>145</b>	<b>480</b>	<b>625</b>	<b>25</b>
<b>Add on Skill Course : Website Design using WordPress</b>		<b>Theory : 50 marks, Practical : 50 marks</b>				<b>4</b>

**Part - II Semester-IV**

Paper Code	Title of the Paper	Hrs / week	Distribution of Marks for Examination			Credits
			Internal	University	Total	
<b>Hard Core - Theory</b>						
HCT 4.1	•Net Technology	04	20	80	100	4
HCT 4.2	Machine Learning	04	20	80	100	4
HCT 4.3	Data Warehouse and Mining	04	20	80	100	4
<b>Soft Core - Theory (Any One)</b>						
SCT 4.1	Soft Computing	04	20	80	100	4
SCT 4.2	Block chain Technology					
<b>Hard core Lab / Project</b>						
HCP 4.1	Practical based on HCT 4.1	04	10	40	50	2
HCP 4.2	Practical based on HCT 4.2	04	10	40	50	2
HCP 4.3	Practical based on HCT 4.3	04	10	40	50	2
HCP 4.4	Project – IV	02	10	40	50	2
Others	Tutorial	02	25	-	25	1
<b>Total of Sem. IV</b>		<b>32</b>	<b>145</b>	<b>480</b>	<b>625</b>	<b>25</b>

\*: The credits will be transferred as per university policy and UGC guidelines after submitting the completion certificate / mark list from the SWAYAM.