

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/ ५७८०

दिनांक. १८/२०१५.

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/^{WCO} /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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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,

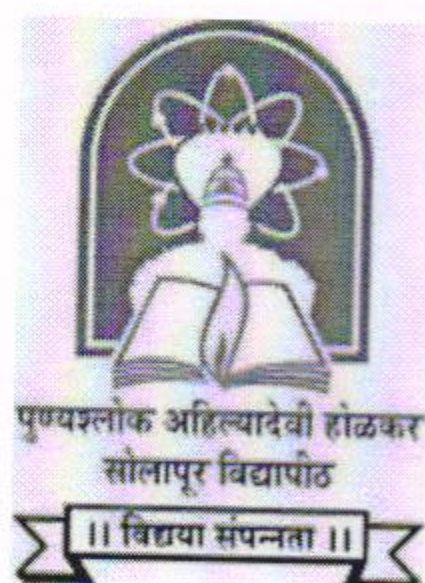
(ए.एस.साळुंखे)

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.Sc.(Entire Computer Science)-I Sem-I | | | | | | | | | | |
| 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 | |
| | | Total | | 24 | -- | -- | 450 | 360 | 90 | 18 |
| B.Sc.(Entire Computer Science)-I Sem-II | | | | | | | | | | |
| 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 |
| Total (Theory) | | | | 24 | -- | -- | 450 | 360 | 90 | 18 |
| 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 |
| Total (Pract.) | | | | | 16 | 400 | 320 | 80 | 16 |
| Grand Total | | | 48 | | 16 | 1300 | 1040 | 260 | 52 |

*Core Courses: DSC 1A , DSC 1B, DSC 2A and DSC 2B (Core computer science courses)

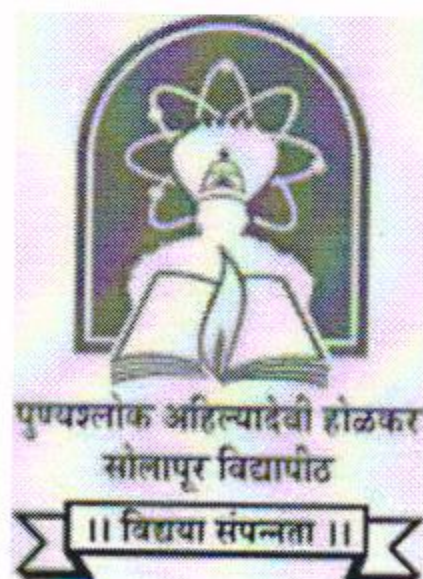
**Generic Electives: DSC 3A/GE-1A and DSC 3B/GE-1B: Mathematics

***Generic Electives : DSC 4A/GE-2A and DSC 4B/GE-2B: Electronics

Abbreviations:

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

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: 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 | | | | |
| Class : B.Sc(Entire Computer Science)- II Semester – III | | | | | | | | | | |
| Core | DSC 1C | Data Structure using C++ -I | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | Data Structure using C++ -II | | 3 | - | -- | 50 | 40 | 10 | |
| | DSC 2C | Software Engineering | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | Software Testing | | 3 | - | -- | 50 | 40 | 10 | |
| | DSC 3C (GE-3) | Probability Theory –I | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | Probability Theory-II | | 3 | - | -- | 50 | 40 | 10 | |
| | SEC-I | Introduction to Python programming | | 3 | - | -- | 50 | 40 | 10 | 2 |
| Total | | | | 21 | - | -- | 350 | 280 | 70 | 14 |
| Class : B.Sc(Entire Computer Science)- II Semester – IV | | | | | | | | | | |
| Core | DSC 1D | Database Management System | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | MYSQL | | 3 | - | -- | 50 | 40 | 10 | |
| | DSC 2D | Operating System | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | Linux OS and Shell Scripting | | 3 | - | -- | 50 | 40 | 10 | |
| | DSC 3D (GE-4) | Statistics for Data Science | | 3 | - | -- | 50 | 40 | 10 | 4 |
| | | Optimization techniques | | 3 | - | -- | 50 | 40 | 10 | |
| | SEC-II | Web Development using PHP | | 3 | - | -- | 50 | 40 | 10 | 2 |
| | AECC | Environmental studies | | 3 | - | -- | 50 | 40 | 10 | NC |
| Total (Theory) | | | | 24 | - | -- | 400 | 320 | 80 | 14 |
| Practical's on | 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 |
| Total (Practical) | | | | | | 24 | 300 | 240 | 60 | 12 |
| Grand Total | | | | 45 | - | 24 | 1150 | 920 | 230 | 44 |

***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

**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)

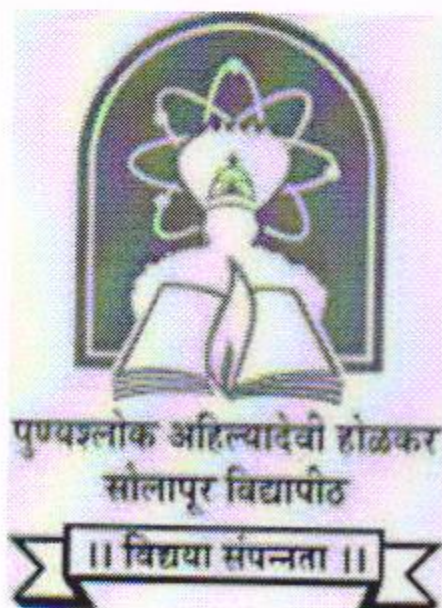
| Subject/ Core Course | Name and Type of the Paper | | No. of Papers/ Practical | Hrs./ Week | | | Total Marks per Paper | UA | CA | Credits |
|---|---|------------------------------------|--------------------------|------------|-----|-----------|-----------------------|-------------|------------|-----------|
| | Type | Name | | L | T | P | | | | |
| Class: | B.Sc. (Entire Computer Science)- III Semester – V | | | | | | | | | |
| Ability Enhancement Course | Paper – II Part A | English (Business English) | Paper II Part A | 4 | -- | -- | 50 | 40 | 10 | 2.0 |
| Core | 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 |
| Skill Enhancement Course | SEC 3 | Advanced Python Programming | Paper XIII | 4 | -- | -- | 100 | 80 | 20 | 4.0 |
| Total Theory Semester-V | | | | 24 | | | 550 | 440 | 110 | 22 |
| Class: | B.Sc. (Entire Computer Science)- III Semester – VI | | | | | | | | | |
| Ability Enhancement Course | Paper – II Part B | English (Business English) | Paper II Part B | 4 | -- | -- | 50 | 40 | 10 | 2.0 |
| Core | 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 |
| Skill Enhancement Course | SEC 4 | Mobile Application Development | Paper XVIII | 4 | -- | -- | 100 | 80 | 20 | 4.0 |
| Total Theory Semester-VI | | | | 24 | | | 550 | 440 | 110 | 22 |
| Practical's on | 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 |
| Total (practical's) | | | | | | 20 | 400 | 320 | 80 | 16 |
| Grand Total | | | | 48 | -- | 20 | 1500 | 1200 | 300 | 60 |
| Abbreviations: | | | | | | | | | | |
| 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 |
|--|-------------|------------------|----|------------------|--------|
| SWAYAM or NPTEL or MOOC Course / Internship / Industrial Training / Courses offered by College | 04 | 100 [#] | -- | 100 [#] | 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 | | | | |
| BCA-I (Sem-I) | | | | | | | | | | |
| Ability Enhancement Compulsory Course (AECC) | | English Paper I Part-A (Communica- tion Skill) | | 4.0 | | | 50 | 40 | 10 | 2.0 |
| *Core Courses | 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 | |
| | | Total | | 24 | -- | -- | 450 | 360 | 90 | 18 |
| BCA-I (Sem-II) | | | | | | | | | | |
| Ability Enhancement Compulsory Course (AECC) | | English Paper I Part-B (Communi- cation Skill) | | 4.0 | | | 50 | 40 | 10 | 2.0 |
| *Core Courses | 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 Mi- croprocessor and Interfacing | Paper-IV | 2.5 | -- | -- | 50 | 40 | 10 | 4.0 |
| | Democracy, Elections and Good Governance | | | 3 | | | 50 | 40 | 10 | NC |
| Total (Theory) | | | | 24 | -- | -- | 450 | 360 | 90 | 18 |
| Core Prac- tical | 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 |
| Total (Pract.) | | | | | | 16 | 400 | 320 | 80 | 16 |
| Grand Total | | | | 48 | | 16 | 1300 | 1040 | 260 | 52 |

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 | | | | |
| Class : | | | | | | | | | | |
| B.C. A.- II Semester – III | | | | | | | | | | |
| Core | 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 |
| Total | | | | 24 | -- | -- | 400 | 320 | 80 | 16 |
| Class : | | | | | | | | | | |
| B. C. A. - II Semester - IV | | | | | | | | | | |
| Core | 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 |
| SEC-II | Python Programming | | | 06 | -- | -- | 100 | 80 | 20 | 4.0 |
| Total (Theory) | | | | 27 | -- | -- | 450 | 360 | 90 | 16 |
| Core | 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 |
| Total (Practical) | | | | | | 24 | 300 | 240 | 60 | 12 |
| Grand Total | | | | 51 | -- | 24 | 1150 | 920 | 230 | 44 |

*Core Subjects: Chemistry/Physics/Electronics/Computer

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

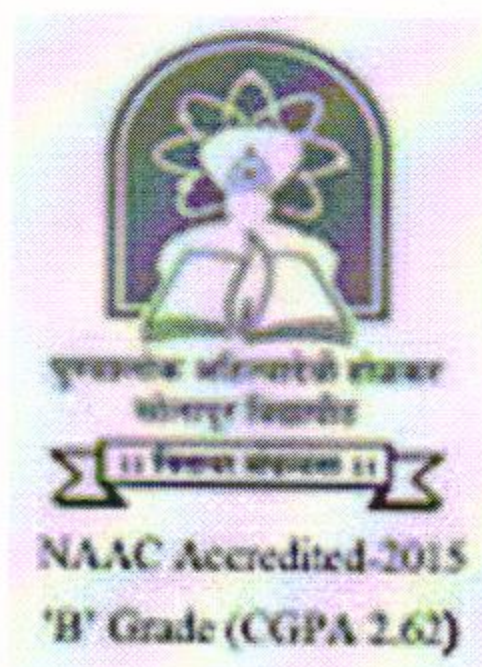
Abbreviations: L: Lectures, T: Tutorials, P: Practical's, UA:University Assessment, CA: College Assessment,

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)

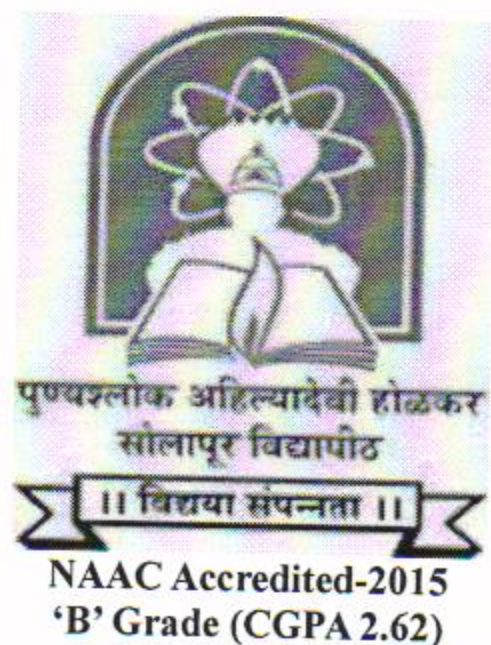
| Type of the Paper and paper code | | Title of Paper | Hrs/Week | | Total Marks per paper | UA | CA | Credits |
|-----------------------------------|-------------------|---|-----------|-----------|-----------------------|-------------|------------|-------------|
| Type | Code | | L | P | | | | |
| B. C. A. – III Semester V | | | | | | | | |
| Ability Enhancement Course | 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 |
| Total (Theory) | | | 24 | - | 550 | 440 | 110 | 22.0 |
| B. C. A. – III Semester VI | | | | | | | | |
| Ability Enhancement Course | 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 |
| Total (Theory) | | | 24 | - | 550 | 440 | 110 | 22.0 |
| Practical | | | | | | | | |
| 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 |
| Total (Practicals) | | | - | 20 | 400 | 320 | 80 | 16 |
| Grand Total | | | 48 | 20 | 1500 | 1200 | 300 | 60 |

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

| Name of the Paper | Hrs. / Week | Total Marks | UA | CA | |
|--|-------------|------------------|----|------------------|-----|
| SWAYAM or NPTEL or MOOC Course / Internship / Industrial Training / Courses offered by College | 04 | 100 [#] | -- | 100 [#] | 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)

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

Part - I Semester-I

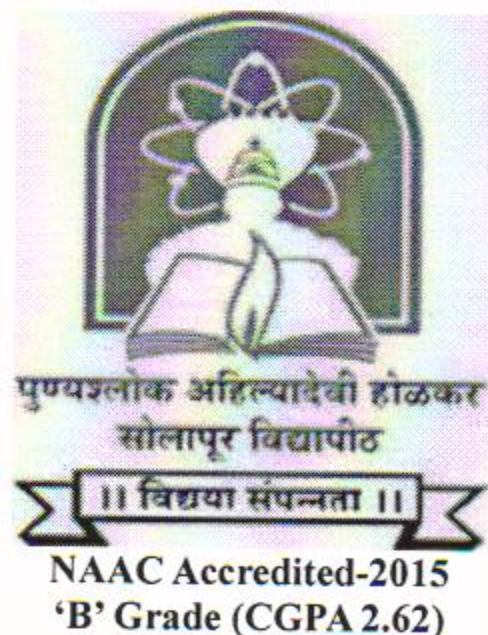
| Paper Code | Title of the Paper | Hrs / week | Distribution of Marks for Examination | | | Credits |
|-------------------------------------|---------------------------------------|------------|---------------------------------------|------------|------------|-----------|
| | | | Internal | University | Total | |
| Hard Core - Theory | | | | | | |
| 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 |
| Soft Core - Theory (Any One) | | | | | | |
| SCT 1.1 | Software Engineering | 04 | 20 | 80 | 100 | 4 |
| SCT 1.2 | UML | | | | | |
| Hard core Lab / Project | | | | | | |
| 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 |
| Total | | 32 | 145 | 480 | 625 | 25 |

Part - I Semester-II

| Paper Code | Title of the Paper | Hrs / week | Distribution of Marks for Examination | | | Credits |
|---|--|------------|---------------------------------------|------------|------------|-----------|
| | | | Internal | University | Total | |
| Hard Core - Theory | | | | | | |
| HCT 2.1 | Java Programming | 04 | 20 | 80 | 100 | 4 |
| HCT 2.2 | Python Programming | 04 | 20 | 80 | 100 | 4 |
| Soft Core - Theory (Any One) | | | | | | |
| SCT 1.1 | Computer Communication Network | 04 | 20 | 80 | 100 | 4 |
| SCT 1.2 | Artificial Intelligence | 04 | 20 | 80 | 100 | 4 |
| Open Elective - Theory (Any One) | | | | | | |
| OET 2.1 | Office Automation | 04 | 20 | 80 | 100 | 4 |
| OET 2.2 | SWAYAM Course* | -- | -- | -- | -- | 4 |
| Hard core Lab / Project | | | | | | |
| 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 |
| Open Elective (Any One) | | | | | | |
| 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 | | | | | |
| Others | Tutorial | 02 | 25 | - | 25 | 1 |
| Total | | 32 | 145 | 480 | 625 | 25 |

* : 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)

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 | |
| Hard Core - Theory | | | | | | |
| HCT 3.1 | Digital Image Processing | 04 | 20 | 80 | 100 | 4 |
| HCT 3.2 | Open Source Technologies (PHP, MySQL) | 04 | 20 | 80 | 100 | 4 |
| Soft Core - Theory (Any One) | | | | | | |
| SCT 3.1 | Network Security | 04 | 20 | 80 | 100 | 4 |
| SCT 3.2 | Cloud Computing | | | | | |
| SCT 3.3 | Mobile Computing | | | | | |
| Open Elective - Theory (Any One) | | | | | | |
| OET 3.1 | Fundamental of Web Designing | 04 | 20 | 80 | 100 | 4 |
| OET 3.2 | SWAYAM Course* | | | | | |
| Hard core Lab / Project | | | | | | |
| 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 |
| Open Elective (Any One) | | | | | | |
| 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 |
| Total of Sem. III | | 32 | 145 | 480 | 625 | 25 |
| Add on Skill Course : Website Design using WordPress | | Theory : 50 marks, Practical : 50 marks | | | | 4 |

Part - II Semester-IV

| Paper Code | Title of the Paper | Hrs / week | Distribution of Marks for Examination | | | Credits |
|---|----------------------------|------------|---------------------------------------|------------|------------|-----------|
| | | | Internal | University | Total | |
| Hard Core - Theory | | | | | | |
| 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 |
| Soft Core - Theory (Any One) | | | | | | |
| SCT 4.1 | Soft Computing | 04 | 20 | 80 | 100 | 4 |
| SCT 4.2 | Block chain Technology | | | | | |
| Hard core Lab / Project | | | | | | |
| 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 |
| Total of Sem. IV | | 32 | 145 | 480 | 625 | 25 |
| *: The credits will be transferred as per university policy and UGC guidelines after submitting the completion certificate / mark list from the SWAYAM. | | | | | | |