## CURRICULA FOR UG PROGRAMS

**Table 1: Coverage of Subject Area over Curriculum (UG Programs)**

| Semester | Subject Area Coverage |
|---|---|
| I-II | Basic Science Courses, Engineering Science Course, Program Core Courses, Vocational and Skill Enhancement Courses, Ability Enhancement Courses, Indian Knowledge System (IKS), Co-curricular Courses. |
| III-IV | Combined institute and program core courses, Open Electives, Multidisciplinary Minor, Value Added Courses, Vocational and Skill Enhancement Courses, Ability Enhancement Courses, Entrepreneurship/Economics/Management Course, Value Education Courses, Community Engineering Project. |
| V-VI | Combined institute and program core courses, Program Electives, Multidisciplinary Minor, Open Elective, Vocational and Skill Enhancement Course. |
| VII - VIII | Program Core Courses, Program Electives, Multidisciplinary Minor, Internship, Research Methodology, Project work. |

| **Assessment for Theory Course** *(Scaled to allotted marks)* | | |
|---|---|---|
| **CIA** | **Weightage (Marks)** | **Description** |
| CIA 1 | 10 | Home Assignments |
| CIA 2 | 20 | Written Exam Components |
| CIA 3 | 10 | Activity/Project and Research Based Learning along with Seminar Presentation |
| CIA 4 | 10 | Behavioral Attitude and General Discipline (5%), Theory and Practical Attendance (5%) |
| ESE | 50 | End Semester Examination |
| **TOTAL** | **100** | |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Examination | *: Oral Examination<br>**PCC**: Program Core course<br>**PEC**: Programme elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement curses<br>**CEP/FP:** Community Engineering Project/Field project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + practical attendance (5%) |
| | | **TOTAL** | **50%** | |

| **Assessment for Theory Course**<br>*(Scaled to allotted marks)* | | |
|---|---|---|
| **CIA** | **Weightage (Marks)** | **Description** |
| CIA 1 | 10 | Home Assignments |
| CIA 2 | 20 | Written Exam Components |
| CIA 3 | 10 | Activity/Project and Research Based Learning along with Seminar Presentation |
| CIA 4 | 10 | Behavioral Attitude and General Discipline (5%), Theory and Practical Attendance (5%) |
| ESE | 50 | End Semester Examination |
| **TOTAL** | **100** | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

# Multidisciplinary Minor offered by Computer Science & Engineering Department

| Sr. No. | Course Name | Course Code | Scheme | Credits | Semester |
|---|---|---|---|---|---|
| 1 | Data Structures | NYCSM01 | 2-0-0 | 2 | III |
| 2 | Data Base Managements system | NYCSM02 | 2-0-0 | 2 | IV |
| 3 | Operating System | NYCSM03 | 4-0-0 | 4 | V |
| 4 | Computer Network | NYCSM04 | 2-0-0 | 2 | VI |
| 5 | Software Engineering | NYCSM05 | 2-0-0 | 2 | VII |
| 6 | Machine Learning | NYCSM06 | 2-0-0 | 2 | VIII |
| TOTAL | | | | 14 | |

# Honors Courses offered by Computer Science & Engineering Department Minor in Computer Science and Engineering

| Sr. No. | Course Name | Course Code | Scheme | Credits | Semester |
|---|---|---|---|---|---|
| 1 | Multicore Programming | NYCSH01 | 3-0-0 | 3 | V |
| 2 | Software Defined Networking | NYCSH02 | 3-0-0 | 3 | V |
| 3 | Pervasive and Ubiquitous Computing | NYCSH03 | 3-0-0 | 3 | VI |
| 4 | Virtualization Techniques | NYCSH04 | 3-0-0 | 3 | VI |
| 5 | Randomized Algorithm | NYCSH05 | 3-0-0 | 3 | VII |
| 6 | Fog and Edge Computing | | 3-0-0 | 3 | VIII |
| **TOTAL** | | | | **18** | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

# Open Electives offered by Computer Science & Engineering Department

| Sr. No. | Open Elective # | Course Name | Course Code | Scheme | Credits | Semester |
|---|---|---|---|---|---|---|
| 1 | Open Elective I | Fundamental of Computer Basics | NYCSO01 | 3-0-0 | 3 | III |
| 2 | Open Elective I | Multimedia System | NYCSO02 | 3-0-0 | | III |
| 3 | Open Elective II | Introduction to Artificial Intelligence | NYCSO03 | 3-0-0 | 3 | IV |
| 4 | Open Elective II | Introduction to DBMS | NYCSO04 | 3-0-0 | | IV |
| 5 | Open Elective III | Cyber Law & Ethics | NYCSO05 | 2-0-0 | 2 | V |
| 6 | Open Elective III | Introduction to Reverse Engineering | NYCSO06 | 2-0-0 | | V |
| TOTAL | | | | | 08 | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

# Programme Elective Courses offered by Computer Science & Engineering Department in

| Sr. No. | Programme Elective Courses# | Course Name | Course Code | Scheme | Credits | Semester |
|---|---|---|---|---|---|---|
| 1 | PEC#1 | Advanced Computer Organization | NYCSE01 | 3-0-0 | 3 | V |
| 2 | PEC#1 | Advanced Computer Architecture | NYCSE02 | 3-0-0 | | V |
| 3 | PEC#2 | Mobile Computing | NYCSE03 | 3-0-0 | 3 | VI |
| 4 | PEC#2 | Information Storage and Retrieval | NYCSE04 | 3-0-0 | | VI |
| 5 | PEC#3 | Mobile Application Development | NYCSE05 | 3-0-0 | 3 | VI |
| 6 | PEC#3 | Cloud Computing | NYCSE06 | 3-0-0 | | VI |
| 7 | PEC#4 | Software Project Management | NYCSE07 | 3-0-0 | 3 | VII |
| 8 | PEC#4 | Software Defined Networks | NYCSE08 | 3-0-0 | | VII |
| 9 | PEC#5 | Internet of Things | NYCSE09 | 3-0-0 | 3 | VIII |
| 10 | PEC#5 | Distributed Database System | NYCSE10 | 3-0-0 | | VIII |
| 11 | PEC#6 | Distributed Computing System | NYCSE11 | 3-0-0 | 3 | VIII |
| 12 | PEC#6 | High Performance Networks | NYCSE12 | 3-0-0 | | VIII |
| TOTAL | | | | | 18 | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**B. Tech Compute Sciences and Engineering (CSE)**
**Semester – III**

| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | | | | | Course | Lab | Course | Lab | |
| 1. | PCC | NYCS301 | Discrete Mathematics and Logic | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2. | PCC | NYCS302 | Computer Graphics | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3. | PCC | NYCS303 | Data Structures | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4. | PCC | NYCS311 | Data Structures Laboratory | -- | -- | 2 | 1 | -- | 50 | -- | 50* | 50 |
| 5. | MDM | -- | Minor Course 1 # | 2 | -- | -- | 2 | 50 | -- | 100 | - | 100 |
| 6. | OE | -- | Open Elective-I | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 7. | AEC (HSSM) | NHSA11 | Key Competencies for Career Growth | 0 | 0 | 4 | 2 | … | 50 | … | 50* | 50 |
| 8. | VEC | NLWV01 | Constitutional and Human Rights | 2 | -- | -- | 2 | 50 | -- | 100 | -- | 100 |
| 9. | CEP | NYCS312 | Community Engineering Project | -- | -- | 4 | 2 | -- | 50 | | 50* | 50 |
| | | | **TOTAL** | **16** | **00** | **10** | **21** | **300** | **150** | **600** | **150** | **750** |
| **Value Added Course** | | | | | | | | | | | | |
| 10 | VAC | ---------- | Computer Graphics Programming Using C++ | - | -- | 2 | -- | -- | 25 | -- | -- | 25 |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core course<br>**PEC**: Programme Elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement Course<br>**CEP/FP:** Community Engineering Project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

| B. Tech Compute Sciences and Engineering (CSE) Semester – IV | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
| | | | | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | | | | | Course | Lab | Course | Lab | |
| 1 | PCC | NYCS401 | Object Oriented Programming using Java | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2 | PCC | NYCS402 | Database Management System | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3 | PCC | NYCS403 | Computer Organization and Architecture | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4 | PCC | NYCS411 | Database Management System Laboratory | -- | -- | 2 | 1 | -- | 50 | -- | 50* | 50 |
| 5 | MDM | -- | Minor course 2 # | 2 | -- | -- | 2 | 50 | -- | 100 | -- | 100 |
| 6 | OE | -- | Open Elective-II | 3 | | | 3 | 50 | -- | 100 | -- | 100 |
| 7 | VSEC | NYCS412 | Object Oriented Programming Laboratory | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| 8 | AEC (HSSM) | NHSA12 | Strategic Communication for Professionals | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| 9 | EEMC (HSSM) | NYCS413 | Personal Finance Management | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| 10 | VEC (HSSM) | NYCS414 | Innovation and Entrepreneurship | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| | | | **TOTAL** | **14** | **00** | **18** | **23** | **250** | **250** | **500** | **250** | **750** |
| **Value Added Course** | | | | | | | | | | | | |
| 11 | VAC | ------ | Java Programming | -- | -- | 2 | -- | -- | 25 | -- | -- | 25 |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core course<br>**PEC**: Programme elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement curses<br>**CEP/FP:** Community Engineering project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary minor course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

**Exit option**:

- Award of UG Certificate in exiting the First Year programme after securing minimum 40 credits will be awarded UG Certificate in the Computer Sciences and Engineering provided they secure 8 credits in work-based vocational courses or internship / Apprenticeship offered during summer vacation in addition to 4 credit from skill based courses earn during first and second semester. **Refer Annexure 1**

- Award of UG Diploma in exiting the second Year programme after securing minimum 80 credits will be awarded UG Diploma in the Computer Sciences and Engineering provided they secure 8 credits in work-based vocational courses or internship / Apprenticeship offered during summer vacation in addition to 4 credit from skill based courses earn during first and second semester. **Refer Annexure 1**

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**Annexure-1**

| Course Work (for Exit Criterion to UG Diploma) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sr. No.** | **Core** | **Course Code** | **Course Name** | **Teaching Scheme (Hrs./Week)** | | | | **Examination Scheme** | | | | **Total Marks** |
| | | | | | | | | **Formative Assessment CIA** | | **Summative Assessment ESE** | | |
| | | | | **L** | **T** | **P** | **C** | **Course** | **Lab** | **Course** | **Lab** | |
| 1 | EC | NYCSX01 | Prompt Engineering for Software Development | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2 | EC | NYCSX02 | Python Programming for AI | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3 | EC | NYCSX03 | Internship (2 Weeks) | -- | -- | -- | 2 | -- | 50 | -- | -- | 50 |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**B. Tech Compute Sciences and Engineering (CSE)**
**Semester –V**

| Sr. No. | Core | Course Code | Course Name | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Course | Lab | Course | Lab | |
| 1 | PCC | NYCS501 | Theory of Computation | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2 | PCC | NYCS502 | Operating System | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3 | PCC | NYCS503 | Data Communication | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4 | PCC | NYCS511 | Operating System Laboratory | -- | -- | 2 | 1 | -- | 50 | -- | 50* | 50 |
| 5 | PEC | NYCSE- | Program Elective-I | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 6 | MDM | -------- | Minor Course 3# | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 7 | OE | -------- | Open Elective III | 2 | -- | -- | 2 | 50 | -- | 100 | -- | 100 |
| 8 | AEC (HSSM) | NHSA13 | Essential Aptitude Skills | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| | | | **TOTAL** | **17** | **00** | **6** | **20** | **300** | **100** | **600** | **100** | **700** |
| **Value Added Course** | | | | | | | | | | | | |
| 09 | VAC | ------ | Network Programming | -- | -- | 2 | -- | -- | 25 | -- | -- | 25 |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core Course<br>**PEC**: Programme elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement Courses<br>**CEP/FP:** Community Engineering Project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**B. Tech Compute Sciences and Engineering (CSE)**
**Semester – VI**

| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | L | T | P | C | Course | Lab | Course | Lab | |
| 1. | PCC | NYCS601 | Design and Analysis of Algorithm | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2. | PCC | NYCS602 | Computer Networks | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3. | PCC | NYCS603 | Software Engineering | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4. | PCC | NYCS611 | Design and Analysis of Algorithm Laboratory | -- | -- | 2 | 1 | -- | 50 | -- | 50* | 50 |
| 5. | PEC | NYCSE_ | Program Elective-II | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 6. | PEC | NYCSE_ | Program Elective-III | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 7. | MDM | ---- | Minor Course 4# | 2 | -- | -- | 2 | 50 | -- | 100 | -- | 100 |
| 8. | VSEC | NYCS612 | Computer Networks Laboratory | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| 9. | AEC | NHSA14 | Employability Skills and Career Advancement | -- | -- | 4 | 2 | -- | 50 | -- | 50* | 50 |
| | | | **TOTAL** | **17** | **--** | **10** | **22** | **300** | **150** | **600** | **150** | **750** |
| **Value Added Course** | | | | | | | | | | | | |
| 11 | VAC | ------ | Advanced Web Designing | -- | -- | 2 | -- | -- | 50 | -- | -- | 50 |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core course<br>**PEC**: Programme Elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement Courses<br>**CEP/FP:** Community Engineering Project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

**Exit option**:

- Students exiting the 3-year UG program will be awarded B.Voc. in the Computer Sciences and Engineering upon securing minimum 120 credits with additional 8 credits in skill-based vocational courses (skill-based courses, internship, mini projects etc.) offered during summer vacation after the sixth semester. **Refer Annexure 2**

**Annexure-2**

**Course Work (for Exit Criterion to UG Diploma) (B. Voc)**

| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | | | | | Course | Lab | Course | Lab | |
| 1 | CE | NYCSX04 | Networking Essentials | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2 | CE | NYCSX05 | Machine Learning with Practical Applications | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3 | CE | NYCSX06 | Internship (4 weeks) | -- | -- | -- | 2 | -- | 50 | -- | -- | 50 |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**B. Tech Compute Sciences and Engineering (CSE)**
**Semester – VII**

| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | | | | | Course | Lab | Course | Lab | |
| 1. | PCC | NYCS701 | Complier Design | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2. | PCC | NYCS702 | Data Science and Machine Learning | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3. | PEC | NYCSE_ | Program Elective-IV | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4. | MDM | --- | Minor Course 5# | 2 | -- | -- | 2 | 50 | -- | 100 | -- | 100 |
| 5. | ELC | NYCS711 | Internship | -- | -- | -- | 12 | -- | 100 | -- | 100 | 200 |
| 6. | AEC | NHSA15 | Corporate Readiness & Entrepreneurial Excellence | -- | -- | 4 | 2 | -- | 50 | -- | 50 | 100 |
| | | | **TOTAL** | **10** | **00** | **04** | **25** | **200** | **150** | **400** | **150** | **700** |
| **Value Added Course** | | | | | | | | | | | | |
| 7 | VAC | VAC105 | Data Science Essentials | - | - | 2 | - | - | 25 | - | - | 25 |

*45 Days Internship during summer vacation of 6th Semester

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core Course<br>**PEC**: Programme Elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement Courses<br>**CEP/FP:** Community Engineering Project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

SANDIP UNIVERSITY, NASHIK, MS (INDIA)
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Department of Computer Science and Engineering
MAHIRAVANI, TRIMBAK ROAD, TAL & DIST: NASHIK-422213, MAHARASHTRA,INDIA

**B. Tech Compute Sciences and Engineering (CSE)**
**Semester – VIII**

| Sr. No. | Core | Course Code | Course Name | Teaching Scheme (Hrs./Week) | | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | C | Formative Assessment CIA | | Summative Assessment ESE | | |
| | | | | | | | | Course | Lab | Course | Lab | |
| 1. | PCC | NYCS801 | Cryptography and Security | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 2. | PCC | NYCS802 | High Performance Computing | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 3. | PEC | NYCS- | Program Elective V | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 4. | PEC | NYCS- | Program Elective VI | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| 5. | RM | NRDP101 | Research Methodology | 4 | -- | -- | 4 | 50 | -- | 100 | -- | 100 |
| 6. | ELC | NYCS811 | Project | -- | -- | 8 | 4 | -- | 50 | -- | 100* | 100 |
| 7. | MDM | ---- | Minor Course 6# | 3 | -- | -- | 3 | 50 | -- | 100 | -- | 100 |
| | | | **TOTAL** | **18** | **00** | **08** | **23** | **300** | **100** | **600** | **100** | **800** |
| **Value Added Course** | | | | | | | | | | | | |
| 8 | VAC | ----- | Cryptography-Practical Approach | -- | -- | 2 | -- | - | 25 | - | - | 25 |

| | | Formative Assessment | | |
|---|---|---|---|---|
| **CIA**: Continuous Internal Assessment<br>**L**: Theory Lecture<br>**T**: Tutorial<br>**P**: Practical<br>**ESE**: End Semester Exam | *: Oral Examination<br>**PCC**: Program Core Course<br>**PEC**: Programme Elective Core<br>**OE:** Open Elective<br>**VAC:** Value Added Courses<br>**AEC :**Ability Enhancement Courses<br>**CEP/FP:** Community Engineering Project/Field Project<br>**VSEC:** Vocational and Skill Enhancement Course<br>**MDM:** Multidisciplinary Minor Course | **CIA** | **Weightage** | **Description** |
| | | CIA 1 | 10% | Home Assignment |
| | | CIA 2 | 20% | Written Exam |
| | | CIA 3 | 10% | Seminar Presentation |
| | | CIA 4 | 10% | • Behavioral Attitude + General Discipline (5%)<br>• Theory + Practical attendance (5%) |
| | | **TOTAL** | **50%** | |

# Credit Distribution

1

| Semester | | Total Credits as per GR | Total Credits SUN CSE |
|---|---|---|---|
| Basic Science Course | BSC/ESC | 14-18 | 16 |
| Engineering Science Course | | 16-12 | 12 |
| Programme Core Course ( PCC) | Program Courses | 44-56 | 52 |
| Programme Elective Course ( PEC) | | 20 | 18 |
| Multidisciplinary Minor (MD M) | Multidisciplinary Courses | 14 | 14 |
| Open Elective (OE) Other than a particular program | | 08 | 8 |
| Vocational and Skill Enhancement Course (VSEC) | Skill Courses | 08 | 08 |
| Ability Enhancement Course (AEC -01, AEC-02) | Humanities Social Science and Management (HSSM) | 04 | 12 |
| Entrepreneurship/ Economics / Management Course | | 04 | 02 |
| Indian knowledge System ( IKS) | | 02 | 02 |
| Value Education Course (VEC) | | 04 | 04 |
| Research Methodology | Experiential Learning Courses | 04 | 04 |
| Community Engineering Project (CEP ) / Field Project (FP ) | | 02 | 02 |
| Project | | 04 | 04 |
| Internship/ OJT | | 12 | 12 |
| Co-curricular Course ( CC ) | Liberal Learning Courses | 04 | 04 |
| **Total Credits ( Major )** | | **160-176** | **174** |