

دېپارټمنټ انجنيېري نرم افزار

2018

Software Engineering Department



موسسه تحصیلات عالی دنیا

BS Computer Science (Soft ware Engineering) 4 years Program

Objectives: To provide a sound foundation to the learners in the principal areas of Software engineering so as to equip them for future study/research, as well as enable them to take up professional industrial career after graduating.

| Semester I | | | | |
|---------------------------|--|----|----|-----------|
| Course# | Title of the Subject | P | T | T.C.H |
| CS101 | Introduction to Computer Science | 01 | 03 | 04 |
| MTH101 | Mathematics-I | 00 | 03 | 03 |
| CS102 | MS MOUS | 03 | 00 | 03 |
| ENG101 | English Composition | 00 | 03 | 03 |
| HT101 | History | 00 | 02 | 02 |
| CS103 | Introduction to Web Engineering | 01 | 03 | 04 |
| Total Credit Hours | | | | 19 |
| Semester II | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| CS201 | Database-I | 01 | 03 | 04 |
| CS202 | Introduction to Programming | 01 | 03 | 04 |
| PHY201 | Physics(Optics) | 00 | 03 | 03 |
| ENG201 | Business and Technical English Writing | 00 | 03 | 03 |
| ISL201 | Islamic Studies | 00 | 02 | 02 |
| MTH201 | Mathematics-II | 00 | 03 | 03 |
| Total Credit Hours | | | | 19 |
| Semester III | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| CS301 | Digital Logic and Design | 01 | 03 | 04 |
| MTH301 | Discrete Mathematics | 00 | 03 | 03 |
| CS302 | Data Structures | 01 | 03 | 04 |
| CS303 | Data Communication | 01 | 03 | 04 |
| MTH301 | Advance Calculus | 00 | 03 | 03 |
| CS304 | Database-II | 01 | 03 | 04 |
| Total Credit Hours | | | | 18 |
| Semester IV | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| PHY401 | Circuit Theory | 01 | 03 | 04 |
| CS401 | Object Oriented Programming(OOP) | 01 | 03 | 04 |
| CS402 | Microprocessor and Assembly Language | 00 | 03 | 03 |
| CS403 | Analysis of Algorithm | 00 | 03 | 03 |
| CS404 | Computer Network-I | 01 | 03 | 04 |
| MTH401 | Linear Algebra | 00 | 03 | 03 |
| Total Credit Hours | | | | 18 |

| Semester V | | | | |
|----------------------|--|----------|----------|--------------|
| Course# | Title of the Subject | P | T | T.C.H |
| CS501 | Theory of Automata and Formal Languages | 00 | 03 | 03 |
| CS502 | E-Commerce Applications and Technologies | 01 | 03 | 04 |
| CS503 | Computer Architecture | 00 | 03 | 03 |
| CS504 | Software Engineering-I | 00 | 03 | 03 |
| CS505 | Computer Network-II | 01 | 03 | 04 |
| CS506 | Advance Database Management System | 01 | 03 | 04 |
| | Total Credit Hours | | | 21 |
| Semester VI | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| CS601 | Operating System | 01 | 03 | 04 |
| CS602 | Compiler Construction | 00 | 03 | 03 |
| CS603 | Visual Programming-I | 01 | 03 | 04 |
| CS604 | Software Engineering-II | 00 | 03 | 03 |
| STA601 | Statistic and Probability | 00 | 03 | 03 |
| CS605 | Computer Graphics | 01 | 03 | 04 |
| | Total Credit Hours | | | 21 |
| Semester VII | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| CS701 | Visual Programming-II | 01 | 03 | 04 |
| CS702 | Web Design and Development | 01 | 03 | 04 |
| CS703 | Elective-I | 00 | 03 | 03 |
| CS704 | Network Security | 00 | 03 | 03 |
| CS705 | Software Project-I | 00 | 03 | 03 |
| | Total Credit Hours | | | 17 |
| Semester VIII | | | | |
| Course# | Title of the Subject | P | T | T.C.H |
| CS801 | Software Project Management | 00 | 03 | 03 |
| CS802 | Artificial Intelligence | 00 | 03 | 03 |
| CS803 | Wireless Networks | 01 | 03 | 04 |
| CS804 | Elective-II | 00 | 03 | 03 |
| CS805 | Software Project-II | 00 | 03 | 03 |
| | Total Credit Hours | | | 16 |

Note:

1. Only those elective courses will be offered whose teaching staff will be available.
2. Students can select any of the two offered elective courses of their choice.
3. Only those elective courses will be offered whose students' strength will be 15 or above.
4. The courses and semester plan can be modified subject to the decision of board of studies.

Table 01: Elective-I subject should be chosen from the below Subjects Lists

| S. No | C.Code | Subject Name | Pre-Requisite |
|-------|--------|--------------------------------|---|
| 01 | 703 | Signal And Systems | CS301:Digital Electronics |
| 02 | 703 | Data Warehousing | CS201: Database-I, CS304: Database-II, CS506: Advance Database Systems |
| 03 | 703 | Advanced Operating Systems | CS601: Operating System |
| 04 | 703 | Software Engineering using UML | CS504:Software Engineering-I CS506:Software Engineering-II |
| 05 | 703 | Database Administration | CS201: Database-I, CS304: Database-II, CS506: Advance Database Systems |
| 06 | 703 | Management Information System | CS101: Introduction to Computer Science |
| 07 | 703 | Telecommunication System | CS303: Data Communication, CS404: Computer Network-I, CS505: Computer Network-II CS704: Network Security CS803: Wireless Networks |
| 08 | PHY701 | Electronics | CS301: Digital Logic and Design PHY401: Circuit Theory |

Table 02: Elective-II Subject should be chosen from the below Subjects List:

| S.No | C.Code | Subject Name | Pre-Requisite |
|------|--------|----------------------------------|---|
| 01 | 804 | Digital Signal Processing | CS301:Signal And System, CS301:Digital Electronics |
| 02 | 804 | Data Mining | CS705: Data Warehousing CS201: Database-I, CS304: Database-II, CS506: Advance Database Systems |
| 03 | 804 | UNIX operating system | CS705: Advance Operating System CS601: Operating System |
| 04 | 804 | Advance Java Technologies (J2EE) | CS201: Introduction to Programming CS401:Object Oriented Programming (OOP) CS504: Software Engineering-I CS604: Software Engineering-II CS701:Visual Programming-II |
| 05 | 804 | Expert Systems | CS802: Artificial Intelligence |
| 06 | 804 | Distributed Computing | CS705: Advance Operating System CS601: Operating System |

Table. 03 List of Courses and Its Pre-Requisites and the credit hours of each Course

| Course# | Title of Course | Titles of Pre-Requisite Courses | T.C.H |
|---------|--|--|-------|
| CS101 | Introduction to Computer Science | None | 04 |
| MTH101 | Mathematics-I | None | 03 |
| CS102 | MS MOUS | CS101: Introduction To Computer Science | 03 |
| ENG101 | English Composition | None | 03 |
| HT101 | History | None | 02 |
| CS103 | Introduction to Web Engineering | CS101: Introduction To Computer Science | 04 |
| CS201 | Database-I | CS302: Data Structures | 04 |
| CS202 | Introduction to Programming | CS101: Introduction To Computer Science | 04 |
| PHY201 | Physics(Optics) | None | 03 |
| ENG201 | Business and Technical English Writing | ENG101: English Composition | 03 |
| ISL201 | Islamic Studies | None | 02 |
| MTH201 | Mathematics-II | MTH101: Mathematics-I | 03 |
| CS301 | Digital Logic and Design | CS101: Introduction To Computer Science | 04 |
| MTH301 | Discrete Mathematics | CS101: Introduction To Computer Science | 03 |
| CS302 | Data Structures | CS202: Introduction to Programming | 04 |
| CS303 | Data Communication | CS101: Introduction to Computer Science | 04 |
| MTH301 | Advance Calculus | MTH101: Mathematics-I MTH201: Mathematics-II | 03 |
| CS304 | Database-II | CS201: Database-I | 04 |
| PHY401 | Circuit Theory | CS301: Digital Logic and Design PHY201: Physics(Optics) | 04 |
| CS401 | Object Oriented Programming(OOP) | CS202: Introduction to Programming CS302: Data Structures | 04 |
| CS402 | Microprocessor and Assembly Language | CS301: Digital Logic and Design CS101: Introduction to Computer Science | 03 |
| CS403 | Analysis of Algorithm | MTH301: Discrete Mathematics CS302: Data Structures CS401: Object Oriented Programming (OOP) | 03 |
| CS404 | Computer Network-I | CS303: Data Communication | 04 |
| MTH401 | Linear Algebra | MTH101: Mathematics-I MTH201: Mathematics-II, MTH301: Advance Calculus | 03 |
| CS501 | Theory of Automata and Formal Languages | None | 03 |
| CS502 | E-Commerce Applications and Technologies | CS103: Introduction to Web Engineering | 04 |
| CS503 | Computer Architecture | CS301: Digital Logic and Design CS402: Microprocessor and Assembly Language | 03 |

| Course# | Title of Course | Titles of Pre-Requisite Courses | T.C.H |
|---------|------------------------------------|---|-------|
| CS 504 | Software Engineering-I | CS202: Introduction to Programming | 03 |
| CS 505 | Computer Network-II | CS303: Data Communication CS404: Computer Network-I | 04 |
| CS 506 | Advance Database Management System | CS201: Database-I, CS304: Database-II | 04 |
| CS 601 | Operating System | CS302:Data Structures | 04 |
| CS 602 | Compiler Construction | CS202: Introduction to Programming CS501: Theory of Automata and Formal Languages | 03 |
| CS603 | Visual Programming-I | CS401: Object Oriented Programming (OOP) | 04 |
| CS604 | Software Engineering-II | CS202: Introduction to Programming CS302: Data Structures | 03 |
| STA601 | Statistic and Probability | None | 03 |
| CS605 | Computer Graphics | CS202: Introduction to Programming | 04 |
| CS701 | Visual Programming-II | CS401: Object Oriented Programming (OOP) | 04 |
| CS702 | Web Design and Development | CS103: Introduction to Web Engineering CS502: E-Commerce Applications and Technologies | 04 |
| CS703 | Elective-I | See Table No 01 | 03 |
| CS704 | Network Security | CS303:Data Communication CS404: Computer Networks-1 CS505:Computer Networks-II | 03 |
| CS705 | Software Project-I | All the concepts of Computer Science | 03 |
| CS801 | Software Project Management | CS504: Software Engineering-I, CS604: Software Engineering-II | 03 |
| CS802 | Artificial Intelligence | CS202: Introduction to Programming CS403: Analysis of Algorithm | 03 |
| CS803 | Wireless Networks | CS303:Data Communication CS404: Computer Networks-1 CS505:Computer Networks-II | 04 |
| CS804 | Elective-II | See Table No.02 | 03 |
| CS805 | Software Project-II | All the Concepts of Computer Science | 03 |

Computer Science Courses

| Table 04 Compulsory subjects of Computer Science | | |
|--|---|------------|
| S.No. | Title of the Subjects | T/Credits |
| 1. | Introduction to Computer Science | 04 |
| 2. | MS MOUS | 03 |
| 3. | Introduction to Web Engineering | 04 |
| 4. | Database-I | 04 |
| 5. | Introduction to Programming | 04 |
| 6. | Digital Logic and Design | 04 |
| 7. | Data Structure | 04 |
| 8. | Database-II | 04 |
| 9. | Data Communication | 04 |
| 10. | Object Oriented Programming(OOP) | 04 |
| 11. | Microprocessor and Assembly Language | 03 |
| 12. | Analysis of Algorithm | 03 |
| 13. | Computer Network-I | 04 |
| 14. | Theory of Automata and Formal Languages | 03 |
| 15. | E-Commerce Applications and Technologies | 04 |
| 16. | Computer Architecture | 03 |
| 17. | Software Engineering-I | 03 |
| 18. | Computer Network-II | 04 |
| 19. | Advance Database Management System | 04 |
| 20. | Operating System | 04 |
| 21. | Compiler Construction | 03 |
| 22. | Visual Programming-I | 04 |
| 23. | Software Engineering-II | 03 |
| 24. | Computer Graphics | 04 |
| 25. | Visual Programming-II | 04 |
| 26. | Web Design and Development | 04 |
| 27. | Elective-I | 03 |
| 28. | Network Security | 03 |
| 29. | Software Project-I | 03 |
| 30. | Software Project Management | 03 |
| 31. | Artificial Intelligence | 03 |
| 32. | Wireless Networks | 04 |
| 33. | Elective-II | 03 |
| 34. | Software Project-II | 03 |
| | Total Cred. Hrs of Computer Science Compulsory Courses | 121 |

Table 05. Elective subjects of Computer Sciences 03 credit hours each in Semester 07 and in Semester 09

| S.No. | Title of the Subjects | T/Credits |
|---|----------------------------------|------------------|
| 01 | Signal And Systems | 03 |
| 02 | Data Warehousing | 03 |
| 03 | Advanced Operating Systems | 03 |
| 04 | Software Engineering using UML | 03 |
| 05 | Database Administration | 03 |
| 06 | Management Information System | 03 |
| 07 | Telecommunication System | 03 |
| 08 | Digital Signal Processing | 03 |
| 09 | Data Mining | 03 |
| 10 | UNIX operating system | 03 |
| 11 | Advance Java Technologies (J2EE) | 03 |
| 12 | Expert Systems | 03 |
| 13 | Distributed Computing | 03 |
| Total Cred. Hrs of Computer Science Compulsory Courses | | 06 |

Mathematics Courses

| S.NO | Title of the Courses | T/Credits |
|---|-----------------------------|------------------|
| 1. | Mathematics-I | 03 |
| 2. | Mathematics-II | 03 |
| 3. | Discrete Mathematics | 03 |
| 4. | Advance Calculus | 03 |
| 5. | Linear Algebra | 03 |
| 6. | Statistics & Probability | 03 |
| Total Cred. Hrs of Mathematics courses | | 18 |

Natural Sciences Courses

| S.NO. | Title of the Courses | T/Credits |
|--|-------------------------------|-----------|
| 1. | Physics(Optics) | 03 |
| 2. | Circuit Theory | 04 |
| 3. | Electronics(Elective Subject) | 03 |
| Total Cred. Hrs of Natural Sciences courses | | 10 |

Social Sciences Courses

| S.NO. | Title of the Courses | T/Credits |
|---|--|-----------|
| 1. | English Composition | 03 |
| 2. | Technical and Business English Writing | 03 |
| 3. | History | 02 |
| | Islamic Studies | 02 |
| Total Cred. Hrs of Social Sciences courses | | 10 |