



SUKKUR INSTITUTE OF BUSINESS ADMINISTRATION
Merit-Quality-Excellence



Schema of Studies
for
MS in Computer Sciences
&
MS in Software Engineering
(2016-2017)

DEPARTMENT OF COMPUTER SCIENCE

Schema of Studies for MS Programs

MS in Computer Sciences (CS)

MS in Software Engineering (SE)

➤ **Distribution of Total Credit Hours (MS with Thesis)**

Category of Area	Credit Hours
Core Courses	09
Specialization Elective Courses	15
Thesis	06
Total Credit Hours	30

➤ **Distribution of Total Credit Hours (MS with Project)**

Category of Area	Credit Hours
Core Courses	09
Specialization Elective Courses	18
Project	03
Total Credit Hours	30

➤ **Distribution of Total Credit Hours (MS with Course)**

Category of Area	Credit Hours
Core Courses	09
Specialization Elective Courses	21
Total Credit Hours	30

Semester wise Plan for MS (CS/SE) with Thesis (Credit Hrs.: 30)

Note: All courses have 3 credits each

Semester I (Credit hrs.: 3)

Course Title	Credits Hours
SIBA Elective-I	3
SIBA Core-I	Pass
SIBA Core-II	Pass
Total	3

Semester II (Credit hrs.: 9)

Course Title	Credits Hours
MS Core-I	3
MS Core-II	3
Specialization Elective-I	3
Total	9

Semester III (Credit hrs.: 12)

Course Title	Credits Hours
Thesis (Partial Registration)*	3
MS Core-III	3
Specialization Elective-II	3
Specialization Elective-III	3
Total	12

Semester IV (Credit hrs.: 6)

Course Title	Credits Hours
Thesis **	3
Specialization Elective-IV	3
Total	6

* Maximum duration for submission of the thesis proposal and getting approved by the Doctoral Committee is **Three Months** from the date of Registration

** Minimum duration for Thesis completion is 6 months and maximum duration is 12 months. In case of exceed the candidate will have to get approval from the Doctoral Committee and he/she will have to pay fees also.

Semester wise Plan for MS (CS/SE) with Project (Credit Hrs.: 30)

Note: All courses have 3 credits each

Semester I (Credit hrs.: 3)

Course Title	Credits Hours
SIBA Elective-I	3
SIAB Core-I	Pass
SIBA Core-II	Pass
Total	3

Semester II (Credit hrs.: 9)

Course Title	Credits Hours
MS Core-I	3
MS Core-II	3
Specialization Elective-I	3
Total	9

Semester III (Credit hrs.: 12)

Course Title	Credits Hours
MS Core-III	3
Specialization Elective-II	3
Specialization Elective-III	3
Specialization Elective-IV	3
Total	12

Semester IV (Credit hrs.: 6)

Course Title	Credits Hours
Project Report**	3
Specialization Elective-V	3
Total	6

** Students can register then self in Project Report after completion of 18 credit

Must be supervised by Faculty member approved by the Doctoral Committee

Project Evaluation Procedure

Project credits will be awarded when

- He/she writes Project Report in their respective fields of specialization.
- Present and defend in front of the Doctoral Committee.

Semester wise Plan for MS (CS/SE) with Course (Credit Hrs.: 30)

Note: All courses have 3 credits each

Semester I (Credit hrs.: 3)

Course Title	Credits Hours
SIBA Elective-I	3
SIAB Core-I	Pass
SIBA Core-II	Pass
Total	3

Semester II (Credit hrs.: 9)

Course Title	Credits Hours
MS Core-I	3
MS Core-II	3
Specialization Elective-I	3
Total	9

Semester III (Credit hrs.: 12)

Course Title	Credits Hours
MS Core-III	3
Specialization Elective-II	3
Specialization Elective-III	3
Specialization Elective-IV	3
Total	12

Semester IV (Credit hrs.: 6)

Course Title	Credits Hours
Specialization Elective-V	3
Specialization Elective-VI	3
Total	6

MS in Computer Sciences

➤ Core Courses For MS in Computer Sciences (Credit hrs.: 09)

Course Code	Course Title	Credit Hours	Expected Offering
CSC-521	Advanced Analysis of Algorithms	3	Fall / Spring
CSC-522	Advanced Operating Systems	3	Fall / Spring
CSC-524	Advanced Theory of Computation	3	Fall / Spring

➤ SIBA Electives

Course Code	Course Title	Credit Hours	Expected Offering
CSC-513	Research Methodology	3	Fall / Spring

➤ SIBA Core Courses (Non-Credit)**

Course Code	Course Title	Credit Hours	Expected Offering
CSC-511	Advanced Computational Mathematics	Pass/Fail	Fall / Spring
CSC-512	Scientific Report Writing	Pass/Fail	Fall / Spring

**SIBA Core Courses would be offered in case deficiency in the level of students. The deficiency level would be identified by targeted tests and interviews.

➤ Specialization Tracks:

1. Data and Knowledge Engineering
2. Net-Centric Computing

Each track has their own set of prerequisites which are usually BS level Computer Science courses.

1. Data and Knowledge Engineering

Prerequisite: Database Systems, Introduction to Programming

Course Code	Course Title	Credit Hours	Expected Offering
CSC-531	Advanced Database Systems	3	Fall / Spring
CSC-532	Distributed Database Systems	3	Fall / Spring
CSC-533	Semantic Web	3	Fall / Spring
CSC-534	Knowledge Discovery and Data Mining	3	Fall / Spring
CSC-561	Advanced Artificial Intelligence	3	Fall / Spring
CSC-572	Machine Learning	3	Fall / Spring
CSC-631	Advanced Data Mining and Data Ware Housing	3	Fall / Spring
CSC-632	Spatio/Temporal Database Systems	3	Fall / Spring
CSC-633	Big Data Analytics	3	Fall/Spring
CSC-662	Computational Intelligence	3	Fall / Spring
CSC-675	Probabilistic Reasoning	3	Fall / Spring

*Electives (Specialized Areas)-Not limited to the list given above/Subject to the availability of the Faculty

2. Net-Centric Computing

Prerequisite: Operating Systems, Data Communication and Networks

Course Code	Course Title	Credit Hours	Expected Offering
CSC-551	Advanced Computer Networks	3	Fall / Spring
CSC-552	Network Risk Management	3	Fall / Spring
CSC-553	Advanced Network Security and Cryptography	3	Fall / Spring
CSC-542	Ubiquitous and Pervasive Computing	3	Fall / Spring
CSC-543	Advanced Distributed Computing	3	Fall / Spring
CSC-554	Information Security	3	Fall / Spring
CSC-651	Advanced Data Communications	3	Fall / Spring
CSC-652	Network Design and Management	3	Fall / Spring
CSC-653	Mobile Computing	3	Fall / Spring
CSC-641	Grid and Cluster Computing	3	Fall / Spring
CSC-642	Parallel Computing	3	Fall / Spring

* Electives (Specialized Areas)-Not limited to the list given above/Subject to the availability of the Faculty

MS in Software Engineering (SE)

➤ Core Courses For MS in Software Engineering (Credit hrs.: 09)

Course Code	Course Title	Credit Hours	Expected Offering
SWE-521	Software Project Management	3	Fall / Spring
SWE-523	Software Requirement Engineering	3	Fall / Spring
SWE-541	Software Quality Assurance and Management	3	Fall / Spring

➤ SIBA Electives

Course Code	Course Title	Credit Hours	Expected Offering
CSC-513	Research Methodology	3	Fall / Spring

➤ SIBA Core Courses (Non-Credit)**

Course Code	Course Title	Credit Hours	Expected Offering
CSC-511	Advanced Computational Mathematics	Pass/Fail	Fall / Spring
CSC-512	Scientific Report Writing	Pass/Fail	Fall / Spring

**SIBA Core Courses would be offered in case deficiency in the level of students. The deficiency level would be identified by targeted tests and interviews.

Specialization Electives for Software Engineering

Chose four courses from the specialization electives

Prerequisite: Software Engineering, Introduction to Programming

Course Code	Course Title	Credit Hours	Expected Offering
SWE-521	Advanced Topics in Software Engineering	3	Fall / Spring
SWE-621	Formal Methods in Software Engineering	3	Fall / Spring
SWE-622	Software Costing and Estimation	3	Fall / Spring
SWE-631	Software Risk Management	3	Fall / Spring
SWE-632	Software Configuration Management	3	Fall / Spring
SWE-532	Software Process Management and Metrics	3	Fall / Spring
SWE-524	Software System Design and Architecture	3	Fall / Spring
SWE-542	Software Development: Tools & Engineering	3	Fall / Spring
SWE-623	Business Process Re-Engineering	3	Fall / Spring
SWE-522	Knowledge Based Software Engineering	3	Fall / Spring
SWE-624	Software Engineering Ontologies	3	Fall / Spring
MGT-511	Human Capital & Organizational Behavior	3	Fall / Spring
SWE-625	Machine Learning Applications for Software Engineering	3	Fall / Spring
CSC-571	Advanced Artificial Intelligence	3	Fall / Spring

* Electives (Specialized Areas)-Not limited to the list given above/Subject to the availability of the Faculty