

**MUNI UNIVERSITY**  
**Master of Science in Computer Science**  
**Program Structure**

**M.Sc. (CS): Computer and Network Security Track**

**Year One | Semester One (Plan A and Plan B)**

Study Plan	Course Code	Course Name	LH	PH	TH	CH	CU
Plan A, & Plan B	<b>6 Core Courses</b>						
	MCS 1101	Machine Learning and Predictive modelling	45	30	30	60	4
	MCS 1102	Communication Networks Technologies	45	30	-	60	4
	MCS 1103	Advanced Database Management Systems	45	30	-	60	4
	MCS 1104	Advanced Algorithms and Complexity	45	30	-	60	4
	MCS 1105	Information Technology Project Management	30	30	-	45	3
	MCS 1106	Product Design and Entrepreneurship	30	15	15	45	3
<b>Semester Total (Plan A and Plan B)</b>			<b>240</b>	<b>165</b>	<b>45</b>	<b>330</b>	<b>22</b>

**Year One | Semester Two (Plan A and Plan B)**

Study Plan	Course Code	Course Name	LH	PH	TH	CH	CU
Plan A, & Plan B	<b>4 Core Courses</b>						
	MCS 1201	Research Methods in Computing	30	30	-	45	3
	MCS 1202	Data Engineering and Visualization	45	30	-	60	4
	MCS 1203	Cyber Security	45	30	-	60	4
	MCS 1204	Applied Cryptography	45	30	-	60	4
	<b>2 Electives Courses</b>						
	MCS 1205	Computer Security	30	30	-	45	3
	MCS 1206	Digital Forensics	30	30	-	45	3
MCS 1207	Malware Analysis & Reverse Engineering	30	30	-	45	3	
<b>Semester Total (Plan A and Plan B)</b>			<b>225</b>	<b>180</b>	<b>00</b>	<b>315</b>	<b>21</b>

**Year Two | Semester One (PLAN A)**

Course code	Course name	LH	PH	TH	CH	CU
<b>3 Core Courses</b>						
MSD 2103	Skills Development (Audited)	-	-	90	45	3
MCS 2101	Research Seminar Series I	15	30	30	45	3
MCS 2102	Master's Dissertation (Proposal)	-	150	-	75	5
<b>Semester Total</b>		<b>15</b>	<b>180</b>	<b>120</b>	<b>165</b>	<b>11</b>

### Year Two | Semester Two (Plan A)

Course code	Course name	LH	PH	TH	CH	CU
<b>2 Core Courses</b>						
MCS 2201	Research Seminar Series II	-	-	90	45	3
MCS 2202	Master's Dissertation (Implementation)	-	150	-	75	5
<b>Semester Total</b>		<b>00</b>	<b>150</b>	<b>90</b>	<b>120</b>	<b>8</b>

### Year Two | Semester One (Plan B)

Course code	Course name	LH	PH	TH	CH	CU
<b>5 Core Courses</b>						
MSD 2103	Skills Development (Audited)	-	-	90	45	3
MCS 2103	Advanced Human Computer Interaction	30	30	-	45	3
MCS 2104	Wireless Security	30	30	-	45	3
MCS 2105	Legal and Ethical Aspects of Computing	30	30	-	45	3
MCS 2106	Research Seminar Series	30	30	-	45	3
<b>Choose 2 Electives</b>						
MCS 2107	Information Systems Security	30	30	-	45	3
MCS 2108	System and Network Security	30	30	-	45	3
MCS 2109	Network Management and Monitoring	30	30	-	45	3
<b>Semester Total</b>		<b>180</b>	<b>180</b>	<b>90</b>	<b>315</b>	<b>21</b>

### Year Two | Semester Two (Plan B)

Course code	Course name	LH	PH	TH	CH	CU
<b>1 Core Courses</b>						
MCS 2202	Master's Project Report	-	150	-	75	5
<b>Semester Total</b>		<b>00</b>	<b>150</b>	<b>00</b>	<b>75</b>	<b>05</b>

## M.Sc. (CS): Software Engineering Track

### Year One | Semester One (Plan A and Plan B)

Study Plan	Course Code	Course Name	LH	PH	TH	CH	CU
Plan A, & Plan B	<b>6 Core Courses</b>						
	MCS 1101	Machine Learning and Predictive modelling	45	30	30	60	4
	MCS 1102	Communication Networks Technologies	45	30	-	60	4
	MCS 1103	Advanced Database Management Systems	45	30	-	60	4
	MCS 1104	Advanced Algorithms and Complexity	45	30	-	60	4
	MCS 1105	Information Technology Project Management	30	30	-	45	3
	MCS 1106	Product Design and Entrepreneurship	30	15	15	45	3
<b>Semester Total (Plan A and Plan B)</b>			<b>240</b>	<b>165</b>	<b>45</b>	<b>330</b>	<b>22</b>

### Year One | Semester Two (Plan A and Plan B)

Study Plan	Course Code	Course Name	LH	PH	TH	CH	CU
Plan A, & Plan B	<b>4 Core Courses</b>						
	MCS 1201	Research Methods in Computing	30	30	-	45	3
	MCS 1202	Data Engineering and Visualization	45	30	-	60	4
	MCS 1203	Advanced Software Engineering	45	30	-	60	4
	MCS 1204	Secure Software Architecture and Design	45	30	-	60	4
	<b>Choose 2 Electives</b>						
	MCS 1205	Software Quality and Security	30	30	-	45	3
	MCS 1206	Software Modelling	30	30	-	45	3
	MCS 1207	Software Verification and Validation	30	30	-	45	3
<b>Semester Total (Plan A and Plan B)</b>			<b>225</b>	<b>180</b>	<b>00</b>	<b>315</b>	<b>21</b>

### Year Two | Semester One (Plan A)

Course code	Course name	LH	PH	TH	CH	CU
<b>3 Core Courses</b>						
MSD 2103	Skills Development (Audited)	-	-	90	45	3
MCS 2101	Research Seminar Series I	15	30	30	45	3
MCS 2102	Master's Dissertation (Proposal)	-	150	-	75	5
<b>Semester Total</b>		<b>15</b>	<b>180</b>	<b>120</b>	<b>165</b>	<b>11</b>

**Year Two | Semester Two (Plan A)**

Course code	Course name	LH	PH	TH	CH	CU
<b>2 Core Courses</b>						
MCS 2201	Research Seminar Series II	-	-	90	45	3
MCS 2202	Master's Dissertation (Implementation)	-	150	-	75	5
<b>Semester Total</b>		<b>00</b>	<b>150</b>	<b>90</b>	<b>120</b>	<b>8</b>

**Year Two | Semester One (Plan B)**

Course code	Course name	LH	PH	TH	CH	CU
<b>5 Core Courses</b>						
MSD 2103	Skills Development (Audited)	-	-	90	45	3
MCS 2110	Software Refactoring	30	30	-	45	3
MCS 2111	Advanced Human Computer Interaction	30	30	-	45	3
MCS 2112	Legal and Ethical Aspects of Computing	30	30	-	45	3
MCS 2106	Research Seminar Series	30	30	-	45	3
<b>Choose 2 Electives</b>						
MCS 2113	Software Design Process and Metrics	30	30	-	45	3
MCS 1214	Service Oriented Architectures	30	30	-	45	3
MCS 1215	Software Architecture	30	30	-	45	3
<b>Semester total</b>		<b>180</b>	<b>180</b>	<b>90</b>	<b>315</b>	<b>21</b>

**Year Two | Semester Two (Plan B)**

Course code	Course name	LH	PH	TH	CH	CU
<b>1 Core Course</b>						
MCS 2202	Master's Project Report	-	150	-	75	5
<b>Semester total</b>		<b>00</b>	<b>150</b>	<b>00</b>	<b>75</b>	<b>05</b>