

**Department of Computer Science  
Rollwala Computer Centre  
Gujarat University**

**Structure and Examination Scheme: Effective June 2017  
M. Sc. (Artificial Intelligence & Machine Learning)**

**Semester-I**

Subject Code	Subject	External (Theory)	External (Practical)	Internal	Term work	Total
<b>MSCAI 111</b>	Mathematical Foundation	100	--	25	25	150
<b>MSCAI 112</b>	Introduction to Programming with Python	100	50	25	25	200
<b>MSCAI 113</b>	Introduction to Artificial Intelligence	100	--	25	25	150
<b>MSCAI 114</b>	Object oriented Concepts & Programming Using C++	100	50	25	25	200
<b>MSCAI 115</b>	Project - I	--	100	25	25	150
	<b>Total</b>	<b>400</b>	<b>200</b>	<b>125</b>	<b>125</b>	<b>850</b>

**Semester-II**

Subject Code	Subject	External (Theory)	External (Practical)	Internal	Term work	Total
<b>MSCAI 121</b>	Numerical Optimization	100	--	25	25	150
<b>MSCAI 122</b>	Advanced Python	100	50	25	25	200
<b>MSCAI 123</b>	Introduction to Machine Learning	100	50	25	25	200
<b>MSCAI 124</b>	Introduction to Computer Vision	100	--	25	25	150
<b>MSCAI 125</b>	Project - II	--	100	25	25	150
	<b>Total</b>	<b>400</b>	<b>200</b>	<b>125</b>	<b>125</b>	<b>850</b>

### Semester-III

Subject Code	Subject	External (Theory)	External (Practical)	Internal	Term work	Total
MSCAI 211	Deep Learning Fundamentals	100	--	25	25	150
MSCAI 212	Introduction to Reinforcement Learning	100	--	25	25	150
MSCAI 213	Elective*	100	50	25	25	200
MSCAI 214	Major Project-Phase I (Ideation and Literature Review)	--	200	50	100	350
	<b>Total</b>	<b>300</b>	<b>250</b>	<b>125</b>	<b>125</b>	<b>850</b>

#### \*Elective : M. Sc. (Artificial Intelligence & Machine Learning)

- (1) Natural Language Processing
- (2) Deep Learning for Computer Vision

### Semester-IV

Subject Code	Subject	External	Internal	Term work	Total
MSCAI 221	Major Project –Phase II	500	150	200	850