	Topics to be covered				
Topics covered in the course with number of lectures on each topic (Assume 15 weeks of instruction and 1 hour lecture duration)	**List of Topics**	**Week**	**No. of Weeks**	**Contact Hours**	**CLO(s)**
	Introduction: Introduction to Computer Architecture & Organization & Assembly Language ***(1 Lecture)*** --- Applications of Assembly Language, Assemble-Link-Execute Cycle ***(1 Lecture)*** --- Assembly Relativity, Portability, Virtual Machine Concept and Machine Levels ***(1 Lecture)***	**1**	**1**	**3**	**1**
	Microcomputer Concepts, Components of Microcomputer (***1 Lecture)*** --- Intel 80x86 Processor Architecture, Mode of Operations ***(1 Lecture)*** --- Basic Execution Environment ***(1 Lecture)***	**2**	**1**	**3**	**1**
	Assembly Language Fundamentals: *Integer, Character & String Literals, Identifier, Directive Vs Instruction* ***(1 Lecture)*** --- *Instruction, Defining Data* ***(1 Lecture)*** --- Symbolic Constants ***(1 Lecture)*** **Assignment no 1 Release (Start of Week 3)**	**3**	**1**	**3**	**2**
	Data Transfer **(1 Lecture)** --- Addressing **(1 Lecture)** --- Arithmetic Operations **(1 Lecture)** **Assignment no 1 Submission**	**4**	**1**	**3**	**2**

	(End of Week 4)				
	Operators and Directive **(1 Lecture)** --- Instruction to control transfer Instructions **(1 Lecture)** --- Arrays and Loops **(1 Lecture)**	**5**	**1**	**3**	**2**
	WEEK 6	***MID -1 Exam***			
	Procedures and Stack Operations **(1 Lecture)** --- Runtime Stack **(1 Lecture)** --- PUSH and POP Instructions **(1 Lecture)** **Assignment no 2 Release (Start of Week 7)**	**7**	**1**	**3**	**4**
	Conditional Processing: Boolean and comparison instruction, conditional jumps ***(3 Lectures)***	**8**	**1**	**3**	**2**
	conditional loop structures, high-level language constructs ***(3 Lectures)*** **Assignment no 2 Submission (End of Week 9)**	**9**	**1**	**3**	**2**
	Shift & Rotate *Instructions* ***(1 Lectures)*** --- Multiplication & Division instructions ***(1 Lecture)*** --- Extended Addition & Subtraction ***(1 Lecture)***	**10**	**1**	**3**	**2**

	Week 11	***MID -2 Exam***			
	Advanced Procedures – Introduction and Examples: Stack Frames --- *Recursion* **(1 Lecture)** --- *INVOKE, ADDR, PROC, PROTO Directives* **(1 Lecture)** **Assignment no 3 Release (Start of Week 12)**	**12**	**1**	**3**	**1,2,4**
	String and Arrays String primitive Instructions ***(3 Lectures)*** --- *Two dimensional array* **(1 Lecture)** **Assignment no 3 Submission (End of Week 13)**	**13**	**1**	**3**	**2**
	Machine Language Translation Instruction Formats, encoding an Instruction Set and Modes of Addressing, Translation and Working of an Assembler, Map File and Memory Map ***(3 Lectures)***	**14**	**1**	**3**	**3**
	CISC vs RISC, Introduction to MIPS Assembly ***(3 Lectures)***	**15**	**1**	**3**	
	Week 16	***Final Exam***			
	Review		**1**	**3**	
	Total		**16**	**48**	

Laboratory Projects/Experiments Done in the Course	**Mentioned in Lab Course Description**			
Programming Assignments Done in the Course	3 Assignments are given which are attached in the assignments section			
Class Time Spent (in percentage)	**Theory (%)**	**Problem Analysis (%)**	**Solution Design (%)**	**Social and Ethical Issues (%)**