

	Instruction	op-code	function 3	function 7	ALU opp [4:0]	MEM read [2:0]	MEM Write [2:0]	Memory to reg [1:0]	REG write	ALU source [1:0]	Branch	Register destination	IMM_SEL [1:0]	PC_SEL
	LB	0000011	000		00000	001	000	01	1	01	0	1	00	x
	LH	0000011	001		00000	010	000	01	1	01	0	1	00	x
	LW	0000011	010		00000	101	000	01	1	01	0	1	00	x
	LBU	0000011	100		00000	100	000	01	1	01	0	1	00	x
	LHU	0000011	101		00000	101	000	01	1	01	0	1	00	x
	FENCE	0001111	000										00	
	FENCE.I	0001111	001										00	
	ADDI	0010011	000		00000	000	000	00	1	01	0	1	00	x
	SLTI	0010011	010		00010	000	000	00	1	01	0	1	00	x
	SLTIU	0010011	011		00011	000	000	00	1	01	0	1	00	x
	XORI	0010011	100		00100	000	000	00	1	01	0	1	00	x
	ORI	0010011	110		00110	000	000	00	1	01	0	1	00	x
	ANDI	0010011	111		00111	000	000	00	1	01	0	1	00	x
	SLLI	0010011	001		00001	000	000	00	1	01	0	1	01	x
	SRLI	0010011	101		00101	000	000	00	1	01	0	1	01	x
	SRAI	1000000	101		10101	000	000	00	1	01	0	1	01	x
	SB	0100011	000		00000	000	001	x	0	01	0	x	10	x
	SH	0100011	001		00000	000	010	x	0	01	0	x	10	x
	SW	0100011	010		00000	000	011	x	0	01	0	x	10	x
	SBU	0100011	100		00000	000	100	x	0	01	0	x	10	x
	SHU	0100011	101		00000	000	101	x	0	01	0	x	10	x
	ADD	0110011	000	0000000	00000	000	000	00	1	00	0	1	xx	x
	SUB	0110011	000	0100000	10000	000	000	00	1	00	0	1	xx	x
	SLL	0110011	001	0000000	00001	000	000	00	1	00	0	1	xx	x
	SLT	0110011	010	0000000	00010	000	000	00	1	00	0	1	xx	x
	SLTU	0110011	011	0000000	00011	000	000	00	1	00	0	1	xx	x
	XOR	0110011	100	0000000	00100	000	000	00	1	00	0	1	xx	x
	SRL	0110011	101	0000000	00101	000	000	00	1	00	0	1	xx	x
	SRA	0110011	101	0100000	10101	000	000	00	1	00	0	1	xx	x
	OR	0110011	110	0000000	00110	000	000	00	1	00	0	1	xx	x
	AND	0110011	111	0000000	00111	000	000	00	1	00	0	1	xx	x
	MUL	0110011	000	0111011	11000	000	000	00	1	00	0	1	xx	x
	MULH	0110011	001	0111011	11001	000	000	00	1	00	0	1	xx	x
	MULHSU	0110011	010	0111011	11010	000	000	00	1	00	0	1	xx	x
	MULHU	0110011	011	0111011	11011	000	000	00	1	00	0	1	xx	x
	DIV	0110011	100	0111011	11100	000	000	00	1	00	0	1	xx	x
	REM	0110011	101	0111011	11101	000	000	00	1	00	0	1	xx	x
	REMU	0110011	111	0111011	11111	000	000	00	1	00	0	1	xx	x
	LUI	0110111			11110	000	000	00	1	01	0	1	11	x
	AUIPC	0010011			11110	000	000	10	1	xx	0	1	11	x

	JALR	1100111	000		10001	000	000	00	1	10	1	1	11	0	
	JAL	1101111			10001	000	000	00	1	10	1	1	11	1	
	BEQ	1100011	000		01000	000	000	10	0	00	1	x	10	0	
	BNE	1100011	001		01001	000	000	10	0	00	1	x	10	0	
	BLT	1100011	100		01100	000	000	10	0	00	1	x	10	0	
	BGE	1100011	101		01101	000	000	10	0	00	1	x	10	0	
	BLTU	1100011	110		01110	000	000	10	0	00	1	x	10	0	
	BGEU	1100011	111		01111	000	000	10	0	00	1	x	10	0	