| INUM | Instruction | Mnemonic | Format | Inputs | | | | Control Outputs | | | | | | | | | | | Input bits | | | | Output bits | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | opcode | funct3 | funct7 | funct6 | RFW | ALUOp | ALUSrcA | ALUSrcB | PCsel | WDsel | ST | LD | MSZ | INUM | BrOp | opcode | funct3 | funct7 | func6 | bin | hex |
| 0 | addi | ADDI | I | 0010011 | 000 | xxxxxxx | xxxxxx | 1 | 000 | 0 | 001 | 00 | 00 | 0 | 0 | 00 | 00000 | 00 | 0b0010011 | 0b000 | 0bxxxxxxx | 0bxxxxxx | 0b1000000100000000000000000 | 0x408000 |
| 1 | slli | SLLI | I | 0010011 | 001 | xxxxxxx | 000000 | 1 | 011 | 0 | 001 | 00 | 00 | 0 | 0 | 00 | 00001 | 00 | 0b0010011 | 0b001 | 0bxxxxxxx | 0b000000 | 0b1011000100000000000000100 | 0x588004 |
| 2 | srli | SRLI | I | 0010011 | 101 | xxxxxxx | 000000 | 1 | 100 | 0 | 001 | 00 | 00 | 0 | 0 | 00 | 00010 | 00 | 0b0010011 | 0b101 | 0bxxxxxxx | 0b000000 | 0b1100000100000000000001000 | 0x608008 |
| 3 | addr | ADDR | R | 0110011 | 000 | 0000000 | xxxxxx | 1 | 000 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 00011 | 00 | 0b0110011 | 0b000 | 0b0000000 | 0bxxxxxx | 0b1000000000000000000001100 | 0x40000C |
| 4 | mul | MUL_ | R | 0110011 | 000 | 0000001 | xxxxxx | 1 | 010 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 00100 | 00 | 0b0110011 | 0b000 | 0b0000001 | 0bxxxxxx | 0b1010000000000000000010000 | 0x500010 |
| 5 | sll | SLL_ | R | 0110011 | 001 | 0000000 | 000000 | 1 | 011 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 00101 | 00 | 0b0110011 | 0b001 | 0b0000000 | 0b000000 | 0b1011000000000000000010100 | 0x580014 |
| 6 | srl | SRL_ | R | 0110011 | 101 | 0000000 | 000000 | 1 | 100 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 00110 | 00 | 0b0110011 | 0b101 | 0b0000000 | 0b000000 | 0b1100000000000000000011000 | 0x600018 |
| 7 | and | AND_ | R | 0110011 | 111 | 0000000 | xxxxxx | 1 | 101 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 00111 | 00 | 0b0110011 | 0b111 | 0b0000000 | 0bxxxxxx | 0b1101000000000000000011100 | 0x68001C |
| 8 | sub | SUB_ | R | 0110011 | 000 | 0100000 | xxxxxx | 1 | 001 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 01000 | 00 | 0b0110011 | 0b000 | 0b0100000 | 0bxxxxxx | 0b1001000000000000000100000 | 0x480020 |
| 9 | jal | JAL_ | J | 1101111 | xxx | xxxxxxx | xxxxxx | 1 | 000 | 1 | 010 | 01 | 01 | 0 | 0 | 00 | 01001 | 00 | 0b1101111 | 0bxxx | 0bxxxxxxx | 0bxxxxxx | 0b1000101001010000000100100 | 0x452824 |
| 10 | jalr | JALR | I | 1100111 | 000 | xxxxxxx | xxxxxx | 1 | 000 | 0 | 001 | 01 | 01 | 0 | 0 | 00 | 01010 | 00 | 0b1100111 | 0b000 | 0bxxxxxxx | 0bxxxxxx | 0b1000000101010100000101000 | 0x40A828 |
| 11 | beq | BEQ_ | B | 1100011 | 000 | xxxxxxx | xxxxxx | 0 | 000 | 1 | 011 | 10 | 00 | 0 | 0 | 00 | 01011 | 00 | 0b1100011 | 0b000 | 0bxxxxxxx | 0bxxxxxx | 0b0000101110000000101100 | 0x5C02C |
| 12 | bne | BNE_ | B | 1100011 | 001 | xxxxxxx | xxxxxx | 0 | 000 | 1 | 011 | 10 | 00 | 0 | 0 | 00 | 01100 | 01 | 0b1100011 | 0b001 | 0bxxxxxxx | 0bxxxxxx | 0b0000101110000000110001 | 0x5C031 |
| 13 | blt | BLT_ | B | 1100011 | 100 | xxxxxxx | xxxxxx | 0 | 000 | 1 | 011 | 10 | 00 | 0 | 0 | 00 | 01101 | 10 | 0b1100011 | 0b100 | 0bxxxxxxx | 0bxxxxxx | 0b0000101110000000110110 | 0x5C036 |
| 14 | bge | BGE_ | B | 1100011 | 101 | xxxxxxx | xxxxxx | 0 | 000 | 1 | 011 | 10 | 00 | 0 | 0 | 00 | 01110 | 11 | 0b1100011 | 0b101 | 0bxxxxxxx | 0bxxxxxx | 0b0000101110000000111011 | 0x5C03B |
| 15 | sd | SD__ | S | 0100011 | 011 | xxxxxxx | xxxxxx | 0 | 000 | 0 | 100 | 00 | 00 | 1 | 1 | 00 | 01111 | 00 | 0b0100011 | 0b011 | 0bxxxxxxx | 0bxxxxxx | 0b0000100000011000111100 | 0x2063C |
| 16 | sw | SW__ | S | 0100011 | 010 | xxxxxxx | xxxxxx | 0 | 000 | 0 | 100 | 00 | 00 | 1 | 1 | 01 | 10000 | 00 | 0b0100011 | 0b010 | 0bxxxxxxx | 0bxxxxxx | 0b0000100000011011000000 | 0x206C0 |
| 17 | sb | SB__ | S | 0100011 | 000 | xxxxxxx | xxxxxx | 0 | 000 | 0 | 100 | 00 | 00 | 1 | 1 | 10 | 10001 | 00 | 0b0100011 | 0b000 | 0bxxxxxxx | 0bxxxxxx | 0b0000100000011101000100 | 0x20744 |
| 18 | ld | LD__ | I | 0000011 | 011 | xxxxxxx | xxxxxx | 1 | 000 | 0 | 001 | 00 | 10 | 0 | 1 | 00 | 10010 | 00 | 0b0000011 | 0b011 | 0bxxxxxxx | 0bxxxxxx | 0b1000000100100100001001000 | 0x409248 |
| 19 | lw | LW__ | I | 0000011 | 010 | xxxxxxx | xxxxxx | 1 | 000 | 0 | 001 | 00 | 10 | 0 | 1 | 01 | 10011 | 00 | 0b0000011 | 0b010 | 0bxxxxxxx | 0bxxxxxx | 0b1000000100100101001001100 | 0x4092CC |
| 20 | lb | LB__ | I | 0000011 | 000 | xxxxxxx | xxxxxx | 1 | 000 | 0 | 001 | 00 | 10 | 0 | 1 | 10 | 10100 | 00 | 0b0000011 | 0b000 | 0bxxxxxxx | 0bxxxxxx | 0b1000000100100110101010000 | 0x409350 |
| 21 | or | OR__ | R | 0110011 | 110 | 0000000 | xxxxxx | 1 | 110 | 0 | 000 | 00 | 00 | 0 | 0 | 00 | 10101 | 00 | 0b0110011 | 0b110 | 0b0000000 | 0bxxxxxx | 0b1110000000000000001010100 | 0x700054 |
| | | | | | | | | | | | | | | | | | | | 0b | 0b | 0b | 0b | 0b | 0x0 |