|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Instruction | Inst[6:0] | Branch | MemRe | MemtoReg | ALUop | MemWr | ALUsr | RegWr | memOffset | UnsignMem | PCmux |
| LUI | 0110111 | 0 | 0 | 011 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| AUIPC | 0010111 | 0 | 0 | 100 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| JAL | 1101111 | 0 | 0 | 010 | -- | 0 | 0 | 1 | 000 | 0 | 01 |
| JALR | 1100111 | 0 | 0 | 010 | -- | 0 | 1 | 1 | 000 | 0 | 10 |
| BEQ | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| BNE | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| BLT | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| BGE | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| BLTU | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| BGEU | 1100011 | 1 | 0 | 000 | -- | 0 | 0 | 0 | 000 | 0 | 11 |
| LB | 0000011 | 0 | 1 | 001 | -- | 0 | 1 | 1 | 001 | 0 | 00 |
| LH | 0000011 | 0 | 1 | 001 | -- | 0 | 1 | 1 | 010 | 0 | 00 |
| LW | 0000011 | 0 | 1 | 001 | -- | 0 | 1 | 1 | 100 | 0 | 00 |
| LBU | 0000011 | 0 | 1 | 001 | -- | 0 | 1 | 1 | 001 | 1 | 00 |
| LHU | 0000011 | 0 | 1 | 001 | -- | 0 | 1 | 1 | 010 | 1 | 00 |
| SB | 0100011 | 0 | 0 | 000 | -- | 1 | 1 | 0 | 001 | 0 | 00 |
| SH | 0100011 | 0 | 0 | 000 | -- | 1 | 1 | 0 | 010 | 0 | 00 |
| SW | 0100011 | 0 | 0 | 000 | -- | 1 | 1 | 0 | 100 | 0 | 00 |
| ADDI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| SLTI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| SLTIU | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| XORI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| ORI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| ANDI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| SLLI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| SRLI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| SRAI | 0010011 | 0 | 0 | 000 | -- | 0 | 1 | 1 | 000 | 0 | 00 |
| ADD | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SUB | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SLL | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SLT | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SLTU | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| XOR | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SRL | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| SRA | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| OR | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |
| AND | 0110011 | 0 | 0 | 000 | -- | 0 | 0 | 1 | 000 | 0 | 00 |