

## chArm-v0: Subset of Arm A64 Instruction Set for C S 429, Fall 2022

Category	Opcode	Section
<b>Data transfer</b>	LDUR	C6.2.202
	STUR	C6.2.346
	MOVK	C6.2.225
	MOVZ	C6.2.227
<b>Computation (arithmetic, logical, shift)</b>	ADDS	C6.2.9
	SUBS	C6.2.364
	MVN	C6.2.233
	ORR	C6.2.241
	EOR	C6.2.120
	ANDS	C6.2.15
	LSL	C6.2.213
	LSR	C6.2.216
	UBFM	C6.2.385
	ASR	C6.2.17
<b>Control transfer</b>	B	C6.2.25
	B.cond	C6.2.26
	BL	C6.2.34
	RET	C6.2.254
<b>Misc</b>	NOP	C6.2.238
	HLT	C6.2.127

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	1	1	1	1	0	0	0	0	1	0										0	0										
1	1	1	1	1	0	0	0	0	0	0										0	0										
1	1	1	1	0	0	1	0	1																							
1	1	0	1	0	0	1	0	1																							
1	0	1	0	1	0	1	1	0	0	0						0	0	0	0	0	0										
1	1	1	0	1	0	1	1	0	0	0						0	0	0	0	0	0										
1	0	1	0	1	0	1	0	0	0	1						0	0	0	0	0	0	1	1	1	1	1					
1	0	1	0	1	0	1	0	0	0	0						0	0	0	0	0	0										
1	1	0	0	1	0	1	0	0	0	0						0	0	0	0	0	0										
1	1	1	0	1	0	1	0	0	0	0						0	0	0	0	0	0										
1	1	0	1	0	0	1	1	0	1																						
1	1	0	1	0	0	1	1	0	1							1	1	1	1	1	1										
1	1	0	1	0	0	1	1	0	1							1	1	1	1	1	1										
0	0	0	1	0	1																										
0	1	0	1	0	1	0	0																					0			
1	0	0	1	0	1																										
1	1	0	1	0	1	1	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0						0	0	0	0	0
1	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1
1	1	0	1	0	1	0	0	0	1	0																	0	0	0	0	0

Format
M
M
I
I
RR
RR
RR
RR
RR
RR
RI
RI
RI
RI
B1
B2
B1
B3
S
S

	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
M-format	op											imm9										0	0	Rn					Rt				
I-format	op										hw	imm16															Rd						
RR-format	op									0	0	Rm						0	0	0	0	0	0	Rn					Rd				
RI-format	op										1	imm12											Rn					Rd					
B1-format	op					imm26																											
B2-format	op								imm19																	0	cond						
B3-format	op										1	1	1	1	1	0	0	0	0	0	0	0	Rn					0	0	0	0	0	
S-format	op																																