	Name	Duration	Predecessors	Qtr 2, 2023 Qtr 3, 2023 Qtr 4, 2023 Qtr 1, 2024 Qtr 2, 202 Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May
1	Specific Aim 1	260 days		
2	TCP Fabrication	60 days		
3	Environment Setup	5 days		
4	Design TCP Machine	10 days	3SS	
5	Build TCP Machine	20 days	4	
6	TCP Creation	30 days	5	
7	Data Collection	30 days	6SS	
8	Kinematic Modeling	100 days	2	*
9	Environment Setup	10 days		
1 0	Program Model Equations	50 days	9SS	
11	Model Comparisons (1)	40 days	10SS+2 weeks	→
1 2	Program Tension Equations	50 days	11	
1 3	Model Comparisons (2)	40 days	12SS+2 weeks	—
1 4	Controller Design	100 days	8	
1 5	Select Controller Type	10 days		
16	Program Single-strand Controller	20 days	15	
17	Test in Simulation	20 days	16	
18	Test in Physical System	20 days	17SS	—
19	Program Multi-strand Controller	30 days	17;18	
2 0	Test in Simulation	20 days	19	
2 1	Test in Physical System	20 days	20SS	→
2 2	Specific Aim 2	260 days		▼
2 3	End Effector Design	120 days		
2 4	Research Tubing Materials	30 days		
2 5	Internal Circuit Layout Planning	30 days	24SS	
26	Implementation	60 days	25;24	
27	Camera/Lighting Testing	30 days	26	
28	Flexibility Testing	30 days	27SS	→
29	Dimension Testing	30 days	27SS	→
3 0	Core Tubing Design	60 days	2 3	→
3 1	Configuration Planning	10 days		
3 2	Connection Point Planning	10 days	31SS	
3 3	Implementation	40 days	31;32	
3 4	Flexibility Testing	10 days		
3 5	Dimension Testing	10 days	34SS	
3 6	Connection Point Design	60 days	3 0	
3 7	Locking Mechanism Research	10 days		
3 8	End Effector Planning	10 days	37	
3 9	Core Tubing Planning	10 days	38SS	
4 0	Implementation	20 days	38;39	
4 1	Durability Testing	20 days	40	
4 2	Circuit Testing	20 days	41SS	
4 3	Flexibility Testing	20 days	42SS	
4 4	Open Period	20 days	3 6	
4 5	Miscellaneous Tasks	20 days		
Complete Timeline				