Lecture Schedule

Abbreviations: V = Vogel (2003); MP = mini project; RP = research project; PS = problem set

	Date	#	**Lecture Topic**	**Readings**	**Assignments**
week 1	August 31	1	Setting the stage: What is biomechanics?	V Ch. 1 Dickinson et al. (2000)	
	September 2	2	Physical principles I	V Ch. 2, Append. 1 & 2	
	September 4	3	Physical principles II		R tutorial, Ch. 1-8
week 2	September 7	-	Labor Day—No class		
	September 9	4	Materials I: Stress, strain	V pp. 286–306	
	September 11	5	Materials II: Biological materials	V Ch. 16, 17	PS1 assigned; LaTeXtutorial
week 3	September 14	6	Materials III: Viscoelastics	V Ch. 18	
	September 16	7	Structures: Properties and failing of the simple	V Ch. 19	
	September 18	-	MP1: Bending Bamboo Baby!		PS1 due
week 4	September 21	8	Structures: Joints	V Ch. 20	
	September 23	9	Muscle mechanics I	V Ch. 24	
	September 25	10	Muscle mechanics II		MP1 Report due
week 5	September 28	11	Springs in movement		
	September 30	12	Scaling I	V Apend. 3, Farley et al. (1993)	
	October 2	13	Scaling II	Biewener (2005)	PS2 assigned
week 6	October 5	14	Levers: Mechanics and motion	V pp. 473-479	
	October 7	15	Locomotion I: Gaits	V Ch. 25, Rome et al. (2005)	
	October 9	-	MP2: Get Your Gait On!		PS2 due
week 7	October 12	-	Columbus Day—No classs		
	October 14	16	Locomotion II: Cost and efficiency		
	October 16	17	Jumping & sssslithering: legless locomotion	V pp. 507-510	MP2 Report due
week 8	October 19	18	Adhesion, tension, pressure	V pp. 425-436, Geim et al. (2003)	

	October 21	19	Life in fluids I: Bernoulli	V. Ch. 7	
	October 23	20	Life in fluids II: Reynold's number, drag		PS3 assigned
week 9	October 26	21	Life in fluids III: Shape, drag		
	October 28	22	Life in fluids IV: Lift		
	October 30	-	MP3: Come Fly with Me!		PS3 due
week 10	November 2	23	Flight I: Gliding	V Ch. 12	
	November 4	24	Flight II: Flapping	V pp. 251-263	
	November 6	25	Swimming I	V pp. 263-283	MP3 Report due
week 11	November 9	25	Swimming II	Liao et al. (2005)	
	November 11	26	Flow in tubes	V Ch. 8, 9	
	November 13	27	Cardiovascular flow I: Principles	V Ch. 10	PS4 assigned
week 12	November 16	28	Cardiovascular flow II: Problems		
	November 18	29	Cardiovascular flow III: Lungs		Literature review due
	November 20	-	Review: Literature Review		PS4 due
week 13	November 23	-	RP Class discussion: So Watcha Gonna Do?		
	November 25	-	Fall break		
	November 27	-	Fall break		
week 14	November 30	-	RP Experimentation		
	December 2	-	RP Experimentation		
	December 4	-	RP Experimentation		
week 15	December 7	-	RP Presentations (Teams 1–4)		RP paper due
	December 9	-	RP Presentations (Teams 5–8)		