

	Date	Topic	Materials
1	9/1 (W)	Introduction, organization, goals. Outline and rationale of the Team Project. Glucose as the central molecule of life. The impact of diabetes. Basic glucose biochemistry and chemistry (different sugars), tasting sugar, tongue receptors.	<a href="#">Lecture 1: Intro to SCRB 175-2021-F3.pptx</a> Readings: <a href="#">Bitter taste bodyguards</a> <a href="#">Sugar is toxic</a> <a href="#">Taste Nutrients</a>
TF1	9/3 (F)	Meet TA, review readings, discuss logistics, review project goals	<a href="#">TF Section 1 (sep 3).pptx</a>
	9/6 (M)	Labor Day	
2	9/8 (W)	Metabolism and sugars: How do bacteria and lower organisms use glucose? How glucose is fundamental for plants, too. Basic metabolism in higher organisms. Krebs cycle and mitochondria. Glycogen storage in liver. What pathways are active when you starve? What pathways are active when you eat, or overeat?	<a href="#">Lecture 2</a> Readings: <a href="#">Science 2009 Warburg</a> <a href="#">Starve Cancer</a>
	9/10 (F)	Animal training (if you aren't already approved to work with mice)	
3	9/13 (M)	Introduction to Insulin and endocrine regulation of glucose. Why did animals evolve to depend on insulin to use glucose? Basic organization of the pancreas. Discovery, structure, biochemistry of insulin. Sequencing the insulin protein (the first protein sequence determined), measuring insulin (first ELISA or antibody test was for insulin), cloning the gene (again, one of the first cloned) and making recombinant insulin.	<a href="#">Lecture 3 Insulin.pptx</a> Readings: <a href="#">Discovery of insulin</a> <a href="#">Insulin structure</a>
4	9/15 (W)	Insulin II. Insulin signaling, counter-regulatory hormones, physiology. Glucagon and other secretin hormones. Insulin signaling in aging.	<a href="#">Lecture 4</a> Readings: <a href="#">Counterreg hormones</a> <a href="#">Insulin signaling</a>
TF2	9/17 (F)	Section	<a href="#">TF Section 2 (sep 17).pptx</a>

5	9/20 (M)	Diabetes overview. Type I Diabetes. Pathophysiology and Immunology. <b>Team project contract due at beginning of class.</b>	<a href="#">5 type 1 D-2021.pptx</a> Readings: <a href="#">Genetics of Type I</a> <a href="#">Elizabeth Hughes</a> <a href="#">Type 1 Diabetes 2017.pdf</a>
6	9/22 (W)	Obesity 1. The global problem and health consequences of obesity. Physiology, role of the adipocyte.	<a href="#">Lecture 6 175 Obesity 1-biology-2021.ppt</a> Readings: <a href="#">Adipocytes</a> <a href="#">Genetics of obesity</a> <a href="#">Gut Hormones</a> <a href="#">Obesity Review</a>
TF3	9/24 (F)	Section	<a href="#">TF Section 3 (sep24).pptx</a>
7	9/27 (M)	Obesity 2. Appetite control and attempts to combat obesity.	<a href="#">Lecture 7: Obesity control and policy-final 2021.ppt</a> Readings: <a href="#">Exporting Obesity</a> <a href="#">Obesity Myths</a> <a href="#">Obesity Review</a>
8	9/29 (W)	Type II Diabetes. Insulin resistance. Beta cells in type II diabetes.	<a href="#">Lecture 8 Type II diabetes-2021.pptx</a> Readings: <a href="#">Type 2</a>
<b>L1</b>	<b>10/1 (F)</b>	<b>LAB 1 (3 hours). Prelab due at beginning of lab</b>	
9	10/4 (M)	End-organ damage of Diabetes. Retinopathy, Kidney, Cardiovascular disease. Theories of end-organ injury.	<a href="#">Lecture 9 Diabetic Complications-2021.pptx</a> Readings: <a href="#">Diabetes complications in the US</a> <a href="#">Obesity 2</a>
10	10/6 (W)	Case presentation with a patient with type 1 diabetes (Lee)	<a href="#">TF Section 4 (oct8).pptx</a>
TF4	10/8 (F)	TA readings section and Practice Quiz	
	10/11 (M)	Holiday, Indigenous People's Day	
<b>Q1</b>	<b>10/13 (W)</b>	<b>In Class Quiz 1</b>	

	10/15 (F)	No Section.	
11	10/18 (M)	Fructose metabolism; the controversy over added sugars. <b>Post Lab Report #1 Due.</b>	<a href="#">11 Fructose for SCRB 175 2021-1.pptx</a> Readings: <a href="#">Fructose</a>
12	10/20 (W)	Hemoglobin A1c as a focus for epidemiology and clinical trials, using recent clinical trial data as examples.	<a href="#">12 175 Epidemiology - 2021-1.ppt</a> Readings: <a href="#">Randomized Trials</a>
TF5	10/22 (F)	TA readings section	<a href="#">TF Section 5 (oct 22).pptx</a>
13	10/25 (M)		<a href="#">13 Human Ethical Research 175 2021-v4.ppt</a>
14	10/27 (W)	Different types of insulin, introduction to pharmacokinetics. Insulin pumps. The artificial pancreas and other major challenges in diabetes. Glucose monitoring. Technology and challenges.	<a href="#">14 PK-SCRB 175-final-5.pptx</a> Readings: <a href="#">Afrezza</a>
TF6	10/29 (F)	TA readings section	
15	11/1 (M)	Surprising Human Studies <b>Team project written proposal due at beginning of class.</b>	<a href="#">16 Glucose surprises-fin-6.pptx</a> Readings: <a href="#">Blood sugar aggression</a> <a href="#">Fidgeting</a> <a href="#">Sitting</a> <a href="#">Vitamin D</a>
16	11/3 (W)	Innovation and intellectual property (law). Why an idea can't benefit society without IP protection. (William Lee, WilmerHale and Harvard)	<a href="#">Intellectual Property -- Richard Lee Class (2021) (190438104.1).ppt</a> Readings: <a href="#">Patent Law Overview</a> <a href="#">Optional: Harvard Admissions Order</a>
<b>L2</b>	<b>11/5 (F)</b>	<b>Lab 2 (3 hours). Pre lab due at beginning of class</b>	
17	11/8 (M)	Stem Cell biology of diabetes. Possible treatment options for diabetes from stem cell biology. (Melton)	<a href="#">15 Melton SCRB 175 Lecture 2021.pptx</a> Readings:

		<b>Proposal feedback returned.</b>	<a href="#">Melton Cell</a> <a href="#">Pagliuca</a>
18	11/10 (W)	Case presentation and discussion: Bariatric surgery and curing Type II diabetes (Lee)	<a href="#">Lecture 18</a>
TF7	11/12 (F)	TA Readings session	<a href="#">TF Section 7 (nov 12).pptx</a>
19	11/15 (M)	Translating an idea. Start-ups, venture capital, angel investors, biotech, Pharma. (Roger Kitterman, Managing Partner, Partners Innovation Fund)	<a href="#">Lecture 19 Kitterman slides 2021.pptx</a> Readings: <a href="#">Optional: Biotech Startup</a>
20	11/17 (W)	Pharmaceuticals and drug development. History of the pharmaceutical industry and why we aren't getting novel therapies out faster (Burt Adelman)	<a href="#">Lecture 20</a> Readings: <a href="#">Drug development</a>
TF8	11/19 (F)	TA review section with practice quiz. <b>Post Lab Report #2 due.</b>	<a href="#">TF Section 8 (nov 19).pptx</a>
<b>CP1</b>	<b>11/22 (M)</b>	<b>Class Presentations Part 1. Team project final document and presentation slides due at 10AM.</b>	
	11/24 (W) 11/26 (F)	Thanksgiving break ðŸŒŸ	
<b>CP2</b>	<b>11/29 (M)</b>	<b>Class Presentations Part 2</b>	
<b>Q2</b>	<b>12/1 (W)</b>	<b>In Class Quiz 2, which covers the entire course</b>	