

Course objective	Geisel competency	Course Objective
1	1a	Explain the roles of the kidney in maintaining water and electrolyte homeostasis, and the regulation of blood pressure.
2	1a	Discuss the typical composition of plasma and urine.
3	1a	Describe the components of the nephron.
4	1a	Describe the components of the renal circulation.
5	1a	Explain the rate and distribution of renal blood flow
6	1a	Discuss the role of the CNS and autoregulation in the control of renal blood flow.
7	1a	Describe and discuss the mechanism of glomerular filtration and the regulation of its rate.
8	1a	Describe the transport mechanism that mediate tubular reabsorption and secretion in the different nephron segments.
9	1a	Define renal clearance, explain the interpretation and significance of creatinine/inulin and PAH clearance.
10	1a	Describe the functional anatomy of the cortical and juxtamedullary nephrons related to renal water transport.
11	1a	Describe renal concentrating and diluting mechanisms, the countercurrent multiplication and countercurrent exchange and the role of urea.
12	1a	Describe the water permeability of the different nephron segments, and explain the mechanisms of water transport and its hormonal regulation.
13	1a	Discuss the main mechanism of renal Na and K transport, and their hormonal regulation.
14	1a	Discuss the integration of Na and extracellular volume.
15	1a	Explain the regulation of acid-base balance and the main transport mechanisms in different nephron segments.
16	1a	Discuss disturbances of acid-base balance and their compensation.
17	1a	Describe the mechanisms of renal Ca, P and Mg transport and their hormonal regulation.
18	3f, 3h	Communicate and interact effectively and collegially with colleagues.
19	4a	Behave respectfully and responsibly towards colleagues and faculty at all times.
20	4b	Meet professional responsibilities fully, including being punctual, present, and engaged educational activities, and being reliable in commitments to tasks.
21	4f	Accept responsibility for his/her own actions. Receive constructive criticism and feedback well. Demonstrate the desire to learn and improve.
22	4h	Take responsibility for his or her own medical education, and take the initiative in optimizing his/her personal education plan.
23	5e	Develop the habit of, and strong commitment to, continuous inquiry and lifelong learning.