Be able to identify and name the tissues, the cells, fibers, matrix, basement membrane
Know the basic function of each cell, tissue; examples of where the tissue is found (as given in lecture)
Know all terms listed in lecture.
You will be tested on the microscope slides studied in the lab, photos in the textbook and lab manual, PAL, and my Tissues lecture and Tissues 1, 2, and 3

*** note: slides are prepared from real organs. Most organs are made of a few different tissues. The entire slide will not be the tissue you are looking for. Make sure you find the correct tissue first. Slide examples in *italics* may very depending on availability.

**EPITHELIUM**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>simple squamous epithelium</td>
<td>find single row of flat cells, contacting an opening</td>
</tr>
<tr>
<td></td>
<td><em>artery  lung  kidney</em></td>
</tr>
<tr>
<td>simple cuboidal epithelium</td>
<td>find the square cells, usually in a ring around an opening.</td>
</tr>
<tr>
<td></td>
<td>a circle of cuboidal cells around an opening  – think gland, kidney.</td>
</tr>
<tr>
<td></td>
<td>these cells secrete into the opening (duct)</td>
</tr>
<tr>
<td></td>
<td><em>simple cuboidal  kidney</em></td>
</tr>
<tr>
<td>simple columnar epithelium</td>
<td>find a single row of tall cells, contacting the opening</td>
</tr>
<tr>
<td></td>
<td>nuclei are closer to the basal surface</td>
</tr>
<tr>
<td></td>
<td><em>simple columnar  stomach  small intestine (duodenum)</em></td>
</tr>
<tr>
<td>pseudostratified columnar</td>
<td>looks like a row of columnar cells over a row of cuboidal cells.</td>
</tr>
<tr>
<td>cilia</td>
<td>hair-like projections from the apical surface</td>
</tr>
<tr>
<td></td>
<td><em>trachea  fallopian tube</em></td>
</tr>
<tr>
<td>stratified squamous epithelium</td>
<td>many layers of epithelial cells</td>
</tr>
<tr>
<td>non-keratinized</td>
<td>squamous at apical surface; cuboidal near basal surface</td>
</tr>
<tr>
<td></td>
<td><em>esophagus  stratified squamous  skin</em></td>
</tr>
<tr>
<td>transitional</td>
<td>many layers; most appear cuboidal</td>
</tr>
<tr>
<td></td>
<td><em>transitional  urinary bladder</em></td>
</tr>
<tr>
<td>goblet cells</td>
<td>look like white, empty cells within columnar epithelium</td>
</tr>
<tr>
<td></td>
<td><em>small intestine  colon</em></td>
</tr>
</tbody>
</table>

**also see** Tissues 1
**CONNECTIVE TISSUES**

*areolar ct*
- loose fibers; few cells
- small cells = fibroblasts
- larger cells = mast cell or macrophage
- also present under epithelium on any mucous membrane
  - *areolar ct*

*reticular ct*
- looks like areolar with dark fibers + more cells
  - *reticular ct*

*adipose ct*
- many large cells that appear empty; very little matrix between cells
- very thin cell membrane; nuclei at cell membrane
  - *adipose*

*dense regular ct*
- straight rows of collagen fibers; thin fibroblasts
  - *white fibrous ct*
  - *elastic ct*

*dense irregular ct*
- irregular arrangement of collagen and cells
  - *skin*

*hyaline cartilage*
- lacuna + smooth matrix
  - *hyaline cartilage*
  - *trachea*

*elastic cartilage*
- looks like hyaline with dark fibers in matrix
  - *elastic cartilage*

*fibrocartilage*
- lacuna in rows + collagen fibers in matrix
  - *fibrocartilage*

*bone*
- find osteons, lacuna (contain osteocytes), lamella, haversian canal
  - *compact bone*

*blood*
- find erythrocytes, leukocytes, thrombocytes
  - *blood smear*

**MUSCLE TISSUES**

*skeletal muscle*  (requires oil)
- straight cells, striations, many nuclei
  - *skeletal muscle*

*cardiac muscle*
- short, branched cells, striations, intercalated discs
  - *cardiac muscle*

*smooth muscle*
- short cells, no striations, one nucleus
- looks like dense regular ct, but with bigger nuclei
  - *smooth muscle*
  - *artery*
  - *uterus*

**NERVOUS SYSTEM TISSUES**

*nerve*
- find a large cell with many processes
- other small cells are neuroglia
  - *nerve*
  - *cerebrum*
  - *cerebellum*

*also see Tissues 1, 2, 3*