Fish Anatomy

Objectives: become acquainted with the general external and internal structures of fishes, and how they vary functionally and taxonomically

Head
  mouth
    mouth position – superior, terminal, sub-terminal, inferior
    teeth types and locations
  barbels, tubercules – what are their positions and uses?
  sensory pores
  nares

Body shapes – which taxa have each, what are the advantages of each type?
  fusiform
  sagittaform
  aguilliform
  compressiform
  depressiform
  filiform

Fins – what are each used for? how does their presence or location vary among taxa?
  paired fins: pelvic
    pectoral
    anal
  single fins: dorsal - one or two; rarely three, as in cod family
  (median) caudal -
    adipose
    spines vs. rays

Internal organs
  GI tract, reproductive organs, excretory system including kidneys, liver
  gas bladder (present or absent, sealed or unsealed, connected or not to other organs)

Body musculature (more on these later when we talk about swimming)
  hypaxial muscles
  epaxial muscles
  myomeres

Skin and scales
  presence, absence, or partial covering of scales
  functions of scales
  types of scales: placoid, ganoid, cycloid, ctenoid, scutes
  skin pigmentation: melanophores
Anatomy, cont.

Terms/structures you should know:

Osteology

Skull
- branchial arches; gill rakers
- premaxilla, maxilla, dentary
- operculum: opercle, subopercle, preopercle, interopercle
- bones which have teeth attached, including pharyngeal teeth
- otoliths

Vetebral column
- neural spine, neural arch, neural canal
- centrum
- zygopophysis, basapophysis
- hemal spine, hemal arch (not always present?), hemal canal
- ribs (dorsal - epipleurals, and ventral - pleurals)

Caudal skeleton
- urostyle
- hypurals
- epurals

Appendicular skeleton
- pterygiophores
- lepidotrichia
- ceratotrichia
- pectoral girdle - cleithrum
- pelvic girdle