Lab CEU Subscription

Lab CEU Subscriptions allow you to pick the titles and categories that you’re interested in.

**Individual Users:** 12 months of access

**Group Users:** 24 months of access

**PRICING:**

- **Individual Purchasers** = 12 months of access for $85.
- **Group Purchasers** = 24 months of access. Pricing depends on the number of users and how payment is made (IE: 1 payment from the facility OR each group user pays individually).  We can price match.

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**Formats Available:**

- Select the titles and categories that you’re interested in.
- Contains all individual course titles.
- Packages, Combos, and Textbooks are not included.*
- Courses must be completed within your subscription period.

* Group purchasers get 24 months of access in their Subscription.

Our Course categories are listed in alphabetical order. This list shows titles actively available, as well as, courses that are in the final stages of Review, and those Pending will be available within 6 months.

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**Subscription Course List:** Detailed List of Titles Included in the Subscription.

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**BLOOD BANKING**

- The Blood Banking category contains courses that focus on blood donors, blood donation, and donor processing. Also see the Immunohematology category for general Immunohem. topics.

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**Blood Component Processing, Storage, Special Prep, and Labelling**

**BASIC INFO:**

- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: BB002
- CONTENT PAGES: 17
- QUIZ QUESTIONS: 17

**SUMMARY:**

- Benefits of component therapy vs administration of whole blood
- List the various anticoagulant / preservatives in use today
- Describe the features of the standard collection bag configuration
- Describe component characteristics: shelf life, chemical changes, etc
- Describe AABB requirements: QC regs, temperature, equipment, etc
- And more…Labelling, irradiation, special proc., plasma derivatives, etc.
Calcium, Phosphorus, and Magnesium Disorders

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Advanced
- COURSE CODE: C030
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 20

**SUMMARY:**
- List disorders that can cause hyperkalemia
- List various agents that can cause hyperkalemia
- How to make the diagnosis of hyperkalemia
- Medications used to treat hyperkalemia

---

Classification and Diagnosis of Diabetes

![Blood Test Levels for Diagnosis of Diabetes and Prediabetes](image)

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: C024
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 16

**SUMMARY:**
- Explain what diabetes is.
- List the different classifications of diabetes.
- Discuss the genetics involved in diabetes.
- Identify who should be tested for diabetes.
- List the tests used to diagnose diabetes.
- Recall the expected results for testing.

---

Hyperkalemia

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: C027
- CONTENT PAGES: 15
- QUIZ QUESTIONS: 10

**SUMMARY:**
- List disorders that can cause hyperkalemia
- List various agents that can cause hyperkalemia
- How to make the diagnosis of hyperkalemia
- Medications used to treat hyperkalemia

---

Hyponatremia

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: C026
- CONTENT PAGES: 15
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Recall the pathophysiology of hyponatremia.
- List the main hyponatremic disorders.
- Treatment options for hyponatremia and their outcomes.
## Mass Spectrometry and its Role in Clinical Diagnostics

### BASIC INFO:
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: C023
- CONTENT PAGES: 13 (many pics)
- QUIZ QUESTIONS: 6

### SUMMARY:
- Explain the principle of Mass Spectrometry
- Identify common ionization methods & Mass analyzers
- Explain how Quadrupole works
- Identify common analytes that use Mass Spectrometry

## Metabolic Alkalosis

### BASIC INFO:
- CONTACT HOURS: TBD
- COURSE LEVEL: TBD
- COURSE CODE: C029
- CONTENT PAGES: 13
- QUIZ QUESTIONS: TBD

### SUMMARY:
- Details To Follow……

## The Steroid Hormone Cascade

### BASIC INFO:
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: C018
- CONTENT PAGES: 21
- QUIZ QUESTIONS: 12

### SUMMARY:
- Summarize how hormones work: synthesis, effects, etc.
- Describe the role Cholesterol plays in the Hormone Pathway
- List the 5 major steroid hormone groups & ID the associated hormones.
- Explain the role each hormone plays in the body.
- Identify the enzymes that act on each hormone to convert it.
- Correlate a patient’s lab results to hormonal disease states

## Thyroid Hormone Excess

### BASIC INFO:
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: C021
- CONTENT PAGES: 25
- QUIZ QUESTIONS: 15

### SUMMARY:
- Recall clinical features of Graves’ disease.
- Discuss pathogenesis of Graves’ disease.
- List the clinical features of Graves’ disease.
- Identify tests available to diagnose Graves’ disease.
- List the treatment options available for Graves’ disease.
Urine Collection Methods: A Basic Review

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: C028
- CONTENT PAGES: 14
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Review the urinary tract and its major components.
- Review what can be determined by testing urine.
- List the different types of urine collection methods.
- Briefly review specimen labelling and specimen rejection.

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**CYTOGENETICS CATEGORY**

**Cytogenetics Package-19**

**NEW**

* PACKAGE *

PACKAGES ARE **NOT** AVAILABLE IN THE LAB SUBSCRIPTION

* Courses that make up a Package are available in Subscriptions as individual titles *

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**CASE STUDY: A New AML with Complex Karyotype**

**NEW**

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Advanced
- COURSE CODE: CYG006
- CONTENT PAGES: 10
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls observable chromosome abnormalities in AML.
- Analyze the Case Study’s laboratory results.
- Evaluates the entire course of the patient’s treatment.
- Examine the conclusions made regarding this case report and associated findings.

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**BRCA Mutations**

**BASIC INFO:**
- CONTACT HOURS: 4
- COURSE LEVEL: Intermediate
- COURSE CODE: CYG003
- CONTENT PAGES: 35
- QUIZ QUESTIONS: 25

**SUMMARY:**
- Describe the function of the BRCA gene.
- Recall who’s at risk for carrying BRCA.
- Discuss details of BRCA1.
- Discuss details of BRCA2.
- Review & interpret possible patient results.
- Outline cancer risk prevention strategies.
# Double Aneuploidy in Down Syndrome

**BASIC INFO:**
- CONTACT HOURS: **3**
- COURSE LEVEL: Intermediate
- COURSE CODE: CYG00
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 20

**SUMMARY:**
- Recalls the discovery of chromosomes & some of their major syndromes and clinical features.
- Reviews common double aneuploidies involving Chromosome 21 and autosomal chromosomes.
- Discusses double aneuploidies involving Chromosome 21 and sex chromosomes.
- Discusses specific chromosome abnormalities and conditions.

# FISH: An Increasingly Demanded Tool

**BASIC INFO:**
- CONTACT HOURS: **2**
- COURSE LEVEL: Intermediate
- COURSE CODE: CYG
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Recalls a brief background of FISH.
- Discusses FISH's role in diagnosing hematological malignancies.
- Discusses FISH's role in diagnosing non-hematological malignancies in solid tumors.
- Briefly discusses the progress in FISH methodology.

# Morphological Markers of Chromosome Instability

**BASIC INFO:**
- CONTACT HOURS: **1**
- COURSE LEVEL: Intermediate
- COURSE CODE: CYG008
- CONTENT PAGES: 5
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Defines chromosomal stability.
- Discusses mitotic figures & how they correlate with malignancy.
- Defines atypical mitosis.
- Discusses telomere dysfunction & its relation to carcinogenesis.
- Recalls the use of morphological markers in chromosome instability.

# X and Y Chromosome

**BASIC INFO:**
- CONTACT HOURS: **1**
- COURSE LEVEL: Basic
- COURSE CODE: CYG005
- CONTENT PAGES: 10
- QUIZ QUESTIONS: 7

**SUMMARY:**
- Learn the background of the X Chromosome.
- Learn the health conditions related to X Chromosome changes.
- Learn the background of the Y Chromosome.
- Learn the health conditions related to Y Chromosome changes.
### Basics of Breast Cytology

**BASIC INFO:**
- **CONTACT HOURS:** 2.5
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** CY015
- **CONTENT PAGES:** 19
- **QUIZ QUESTIONS:** 14

**SUMMARY:**
- Recalls the statistics of breast cancer.
- Describes Fine Needle Aspiration Cytology.
- Discusses core biopsy, its limitations, advantages, & techniques.
- Discusses the Prognostic Panel for Breast Tissue and how cytology can identify various disease states.

### Body Fluid Effusions: Identifying Benign vs. Malignant Cells

**BASIC INFO:**
- **CONTACT HOURS:** 3
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** CY014
- **CONTENT PAGES:** 90 slides
- **QUIZ QUESTIONS:** 17

**SUMMARY:**
- Describes 3 types of effusions.
- Identifies the significance of WBCs in effusions.
- Discusses the gross appearance of serous fluids.
- Lists the differences of benign vs. malignant cellular features.
- Learn to identify benign vs. malignant cells in effusions.

### Case Studies in Cytology-19

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** CY016
- **CONTENT PAGES:** 6
- **QUIZ QUESTIONS:** 9

**SUMMARY:**
- This Package is made up of three short Case Studies:
  - Disseminated Histoplasmosis & the Utility of Skin Scrapings
  - Scar Site Metastasis of Renal Cell Carcinoma
  - Neuroendocrine CA of the Colon Presenting as Acute Meningitis

*Course articles are not available individually.*

### Review of Normal WBCs

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** CY013
- **CONTENT PAGES:** 14
- **QUIZ QUESTIONS:** 11

**SUMMARY:**
- Lists the 5 types of WBCs.
- Reviews a brief background on each WBC type.
- Discusses the causes of increased & decreased WBC values.
- Identifies what cell line each of the 5 WBCs come from.
### Nasal Cytology in Children

<table>
<thead>
<tr>
<th>BASIC INFO:</th>
<th>SUMMARY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTACT HOURS: 1</td>
<td>- Recalls the background of nasal cytology &amp; what it can diagnose.</td>
</tr>
<tr>
<td>COURSE LEVEL: Intermediate</td>
<td>- Lists the steps for collection, staining, &amp; review.</td>
</tr>
<tr>
<td>COURSE CODE: CY012</td>
<td>- Describes cytology seen in allergic &amp; non-allergic rhinitis.</td>
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<tr>
<td>CONTENT PAGES: 6</td>
<td>- Discusses the term “overlapped” rhinitis &amp; possible treatments.</td>
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<tr>
<td>QUIZ QUESTIONS: 9</td>
<td>- Discusses why it’s desirable to perform nasal cytology in children</td>
</tr>
</tbody>
</table>

### Use of Nasal Cytology in Diagnosing Sinonasal Disorders

<table>
<thead>
<tr>
<th>BASIC INFO:</th>
<th>SUMMARY:</th>
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</thead>
<tbody>
<tr>
<td>CONTACT HOURS: TBD</td>
<td>- Discusses the structures and epithelia of the nasal and sinus cavities.</td>
</tr>
<tr>
<td>COURSE LEVEL: Intermediate</td>
<td>- Recalls the cytological examination methods used for the case studies reviewed in this course.</td>
</tr>
<tr>
<td>COURSE CODE: CYG017</td>
<td>- Briefly analyzes the patient results from this review.</td>
</tr>
<tr>
<td>CONTENT PAGES: TBD</td>
<td>- Recalls the most common inflammatory cytotypes observed in sinonasal disorders.</td>
</tr>
<tr>
<td>QUIZ QUESTIONS: TBD</td>
<td>- Recalls the details of each type of inflammatory disorder, including Neutrophilic, Eosinophilic, Mast Cell, and Mixed Cell rhinosinusitis.</td>
</tr>
</tbody>
</table>

### Florida – First Renewal Package

PACKAGES ARE NOT AVAILABLE IN THE LAB SUBSCRIPTION

* Courses that make up a Package are available in Subscriptions as individual titles *

### Florida – Initial Licensure Package

PACKAGES ARE NOT AVAILABLE IN THE LAB SUBSCRIPTION

* Courses that make up a Package are available in Subscriptions as individual titles *

* Initial Licensure *
### Florida – Mandatory Renewal Package

**PACKAGES ARE NOT AVAILABLE IN THE LAB SUBSCRIPTION**

* Courses that make up a Package are available in Subscriptions as individual titles *

**1 Hour HIV-AIDS Review**

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: FM-1HIV019
- CONTENT PAGES: 38
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls a brief background on HIV-AIDS, explains what they are, and how HIV causes AIDS.
- Describes the Biology, structure, & replication cycle of HIV.
- Lists the HIV risk factors & symptoms of HIV-AIDS.
- Briefly discusses test methodologies.
- Lists the classes of drugs available for treatment.
- The requirement is a minimum of 1 hour HIV-AIDS Review.

**3 Hour HIV-AIDS Review**

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Basic
- COURSE CODE: FM-3HIV019
- CONTENT PAGES: 3
- QUIZ QUESTIONS: 24

**SUMMARY:**
- Recalls a brief background on HIV-AIDS, explains what they are, and how HIV causes AIDS.
- Describes the Biology, structure, & replication cycle of HIV.
- Lists the HIV risk factors & symptoms of HIV-AIDS.
- Briefly discusses test methodologies.
- Lists the classes of drugs available for treatment.

**Florida Laws & Rules of the Board**

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: LR019
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 6

**SUMMARY:**
- Briefly discusses Florida Law.
- Lists the general makeup of the Board of Clinical Lab Personnel (BCLP).
- Recalls the Laws that govern FL Clinical Lab.
- Recalls the Rules that govern FL Clinical Lab.
### Medical Errors and the Laboratory

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: ME019
- COURSE SECTIONS: 23
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls the role of different government agencies to reduce errors.
- Explains the different types of laboratory errors.
- Recalls The Joint Commission’s (TJC) Sentinel Event policies.
- Recalls the process associated with Root Cause Analysis.
- Lists the National Patient Safety Goals.

### A REVIEW OF BENZENE AND THE HEMATOLOGICAL SYSTEM

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: H029
- CONTENT PAGES: 4
- QUIZ QUESTIONS: 6

**SUMMARY:**
- Briefly discusses Benzene, including the common routes of exposure.
- Discusses different hematological disease states and how they're affected by Benzene.
- Discusses safety policies, levels of exposure, and risk assessment associated with Benzene exposure.
- Discusses low level exposures to Benzene, recalling genetic and chromosomal change that may occur.

### Case Studies in Hematology

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H021
- COURSE ARTICLES: 4
- QUIZ QUESTIONS: 14

**SUMMARY:**
Includes the following titles:
- Leukemoid Reaction in Patient with Lung Adenocarcinoma.
- Anemia Secondary to Valproic Acid Therapy.
- Pancytopenia Associated with Clonazepam.
- Human Parvovirus B19 Infection in Transplant Patient.

### Contact Pathway of Coagulation and Inflammation

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Advanced
- COURSE CODE: H027
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Describes what the Contact System is.
- Discusses the Assembly-based activation of the Contact System.
- Discusses how the Contact System is involved in activation of the Intrinsic Pathway.
- Discusses how the Contact System is involved in inflammation and autoimmune disease.
Factor XIII Review

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H023
- CONTENT PAGES: 17
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Describes primary & secondary hemostasis.
- Recalls details of the coagulation cascade.
- Lists the coag. factors in the intrinsic, extrinsic & common pathways.
- Recalls the history, structure, epidemiology, etc. of Factor XIII.
- Lists the laboratory tests available for Factor XIII.
- Discusses the Factor XIII case study & associated discussion points.

Heparin Induced Thrombocytopenia

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H028
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 14

**SUMMARY:**
- Names the 2 types of heparin, recalling properties of each.
- Describes the mechanism of action for heparin.
- Discusses clinical assessment of HIT & how/when it occurs.
- Lists the tests used for diagnosis of HIT.
- Lists the alternative treatments for HIT.

Myelodysplastic Syndrome Review

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: H022
- CONTENT SLIDES: 10
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Explain the Epidemiology of Myelodysplastic Syndrome (MDS).
- Recall the signs and symptoms & pathological findings of MDS.
- Discusses the peripheral blood in MDS patients.
- Discusses the bone marrow in MDS patients.
- Lists the treatment options available for MDS patients.
- Recalls the prognosis for patients with MDS.

Overview of Pediatric Hematology

**BASIC INFO:**
- CONTACT HOURS: 1.5
- COURSE LEVEL: Intermediate
- COURSE CODE: H028
- CONTENT SLIDES: 35
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls the changing sites of hematopoiesis in developing humans and the relevant progenitor cells.
- Recognizes the clinical presentations of select and clinical presentations of select pediatric anemias.
### Platelets: A Basic Review

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Basic
- **COURSE CODE:** H029
- **CONTENT PAGES:** 7
- **QUIZ QUESTIONS:** 8

**SUMMARY:**
- Briefly discusses how platelets are formed from Megakaryocytes.
- Recalls the functional properties of platelets and the Zones that make up their structure.
- Describes the Alpha Granules, recalling their function.
- Describes the Dense Granules, recalling their function.
- Describes the Lysosomes, recalling their function.
- Briefly discusses Autologous Platelet Rich Plasma.

### Stem Cell Basics

**STEM CELL POSSIBILITIES**
A stem cell can become any one of the 200 different cells in the body

**BASIC INFO:**
- **CONTACT HOURS:** 2
- **COURSE LEVEL:** Basic
- **COURSE CODE:** H019
- **CONTENT PAGES:** 17 + glossary
- **QUIZ QUESTIONS:** 12

**SUMMARY:**
- Defines a stem cell.
- Recalls the properties unique to all stem cells.
- Discusses what an Embryonic Stem Cell is and what an Adult Stem Cell, defining features and tests of each.
- Lists similarities between Embryonic and Adult Stem Cells.
- Defines what a Pluripotent Stem Cell is.
- Defines glossary terms associated with stem cells.

### Understanding Components of the CBC

**BASIC INFO:**
- **CONTACT HOURS:** 4
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** H020
- **CONTENT PAGES:** 57
- **QUIZ QUESTIONS:** 22

**SUMMARY:**
- Recalls the composition of blood
- Lists the normal values for RBC & RBC indices and lists reasons for abnormal values.
- Lists normal values for WBC counts and lists reasons for abnormal values.
- Lists normal values for Platelets and causes for abnormal values.

### Understanding Hemostasis and Basic Coagulation Testing

**BASIC INFO:**
- **CONTACT HOURS:** 1.5
- **COURSE LEVEL:** Basic
- **COURSE CODE:** H025
- **CONTENT SLIDES:** 34
- **QUIZ QUESTIONS:** 10

**SUMMARY:**
- Summarizes the process of coagulation.
- Reviews hemostasis physiology to understand the coagulation assays.
- Distinguishes between lab coagulation assays.
- Discusses the major natural inhibitor pathways of coagulation initiation.
- Diagnoses basic disorders of hemostasis given commonly used laboratory assay values.
Artifacts in Histopathology: A Potential Cause of Misinterpretation

**BASIC INFO:**
- **CONTACT HOURS:** 2
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** H035
- **CONTENT PAGES:** 14
- **QUIZ QUESTIONS:** 15

**SUMMARY:**
- Identify the different types of artifacts encountered in Histology specimens.
- Discusses pre-fixation artifacts, from tattoo pigment, surgery, and contamination.
- Discusses artifacts encountered in specimen processing, fixation, cutting, staining, mounting, and microscopy.

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Estrogen and Cancer: Understanding Estrogen Receptors

**BASIC INFO:**
- **CONTACT HOURS:** 1.5
- **COURSE LEVEL:** Basic
- **COURSE CODE:** H033
- **CONTENT PAGES:** 25
- **QUIZ QUESTIONS:** 10

**SUMMARY:**
- Defines what estrogens are and what tissues they target.
- Explains estrogen receptors & how they trigger gene activation.
- Recalls estrogen’s effects on cell changes & cell proliferation.
- Discusses how estrogen can trigger cancer.
- Explains how anti-estrogen and SERMS work.

---

Histological Changes of the Placenta in Diabetes

**BASIC INFO:**
- **CONTACT HOURS:** 1.5
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** H030
- **CONTENT PAGES:** 6
- **QUIZ QUESTIONS:** 10

**SUMMARY:**
- Describes the placenta recalling its normal pathology.
- Describes the method of placental tissue prep & staining.
- Discusses the differences seen between the diabetic & normal placental tissue.
- Recalls the different staining patterns for each type of stain.
- Recalls the histopathological differences: normal / diabetic.

---

Histological Stains: A Literature Review and Case Study

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** H042
- **CONTENT PAGES:** 7
- **QUIZ QUESTIONS:** 7

**SUMMARY:**
- Recalls specific aspects of Histopathology, including staining, fixation, gross & micro exams, advanced Histo. techniques, etc.
- Discusses literature review of historical staining techniques and important histological stains – both past & present.
- Reviews two case studies discussing staining methods.
Histology Microtechniques

BASIC INFO:
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H044
- CONTENT PAGES: 11
- QUIZ QUESTIONS: 15

SUMMARY:
- Discusses techniques associated with histology, including: tissue preparation, fixation & their types and classification, microwave irradiation, decalcifying agents, dehydration, clearing and embedding.
- Discusses microtomy, including: the cryostat, microtome knives, section thickness, etc.

Histology of Normal Tissues

BASIC INFO:
- CONTACT HOURS: 3.5
- COURSE LEVEL: Basic
- COURSE CODE: H041
- CONTENT PAGES: 14
- QUIZ QUESTIONS: 19

SUMMARY:
- Recalls the background of histology.
- Describes and discusses epithelial tissue.
- Describes and discusses connective tissue.
- Describes and discusses muscle tissue.
- Describes and discusses nervous tissue & the nervous system.

Histology Stains: A Historical Review

BASIC INFO:
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: H036
- CONTENT PAGES: 14
- QUIZ QUESTIONS: 9

SUMMARY:
- Discusses specific aspects of Histopathology: staining fixation, and gross & micro review.
- Lists some advanced histological stains.
- Lists the international regulating bodies for the control & standardization of biological staining methods.
- Recalls the history of staining techniques.
- Lists some of the stains that have been used in both past & present.
- Lists staining procedures developed more recently.

Microwave Assisted Tissue Preparation

BASIC INFO:
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: H038
- CONTENT PAGES: 7
- QUIZ QUESTIONS: 7

SUMMARY:
- Recalls the background of microwave application in histology.
- Discusses the various applications of microwave use for: tissue fixation, fixation of cultured cells, decalcification, immunohistochemistry, immunofluorescence, antigen retrieval, fatty tissues, cryosectioning, and special staining.
Pathology of Breast Diseases

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: H037
- CONTENT PAGES: 28
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Discusses the impact that histopathology plays in treatment.
- Compares the different types of tissue collection methods.
- Explains the different chemical testing that can be done on breast biopsies, such as, estrogen, progesterone, and HER2 status.
- Compares 9 benign breast lesions listed in the article.
- Discusses breast neoplasms.
- Recalls the basics of breast cancer & compares 20 types in article.

Principles of the Liver Biopsy Procedure

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: H027
- CONTENT PAGES: 7
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Compares the different types of liver biopsy.
- Lists the testing & other factors considered before biopsy.
- Describes and discusses connective tissue. Lists disease states where biopsy may be performed.
- Recalls blood testing that’s performed within 24 hrs. of biopsy.
- Explains how the patient is prepped for biopsy.

The Autopsy: Pathology of a Sepsis Related Death

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: H026
- CONTENT PAGES: 25
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Defines clinical case definitions for various septic diagnoses & recalls the prevalence of each type of infection.
- Lists various microbiological sampling methods for autopsy tissue.
- Lists various disease states that can stimulate septic shock.
- Compares the gross lesions in various organs during sepsis.
- Discusses the hematological & thrombotic syndromes in sepsis.
- Discusses treatment in sepsis & their effects on various tissues.

The Role of Technical QC in Histology Laboratories

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: H043
- CONTENT PAGES: 4
- QUIZ QUESTIONS: 8

**SUMMARY:**
- Defines Quality Management.
- Discusses Risk Analysis and Evaluation.
- Discusses the role of Technical Quality Control and its role in Histology Laboratories.
- Discusses Quality Assurance and the three phases.
### Understanding Angiogenesis

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: H032
- CONTENT "SLIDES": 28
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Defines metastasis, angiogenesis, and tumor angiogenesis, describing how they occur in relation to cancer.
- Recalls where angiogenesis occurs normally in the body.
- Describes how angiogenesis is regulated and how it affects tumor growth.
- Lists the molecules and proteins that can activate angiogenesis.
- Lists the proteins that inhibit angiogenesis.
- Discusses drugs that block angiogenesis.

### Understanding Cancers of Childhood – PART I

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: H022
- CONTENT PAGES: 14
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Analyzes basic statistics associated with childhood cancers.
- Lists various types of childhood head and neck cancers.
- Recalls risk factors, histology, etc. for nasopharyngeal cancers.
- Discusses childhood Esthesioneuroblastmas.
- Recalls histology, presentation, evaluation, & treatment for thyroid tumors.
- Discusses salivary gland tumors, laryngeal cancers & more.

### Understanding Cancers of Childhood – PART II

**BASIC INFO:**
- CONTACT HOURS: 4
- COURSE LEVEL: Basic
- COURSE CODE: H024
- CONTENT PAGES: 33
- QUIZ QUESTIONS: 24

**SUMMARY:**
- Lists various types of thoracic cancers.
- Discusses details, statistics of breast, lung, bronchial, mesothelioma, etc.
- Lists various types of abdominal tumors.
- Incidence, risk factors, etc. of adrenal cortex, colorectal & GIST tumors.
- Lists various genital & urinary tumors and their statistical incidence.
- Lists the various other types of rare cancers seen in childhood, including MEN, pheochromocytoma, and melanoma.

### IMMUNOHEMATOLOGY CATEGORY

**- - Also see the Blood Banking category for additional topics.**

### Blood Safety

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: IH015
- CONTENT PAGES: 19
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Identifies the role each public agency plays in blood safety.
- Lists documents used to screen blood donors.
- Lists adverse reactions that can happen from transfusion.
- Lists infectious organisms that can affect the blood supply.
- Lists tests that the FDA states are mandatory for screening.
- This course overlaps with Transfusion Transmitted Infections.
Case Study: Alloantibody Causing Blood Type Conflict in Pregnant Female

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: IH018
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 5

**SUMMARY:**
- Discusses the process of determining ABO/Rh of the patient in this case study.
- Recalls the process of performing antibody detection on the patient in this case study.
- Interprets the results for the patient in this case study.

Mini Reviews in Immunohematology - 19

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: IH020
- CONTENT PAGES: 5
- QUIZ QUESTIONS: 10

**SUMMARY:**
- This Package is made up of three short articles:
  - Implications of HLA in TRALI and Platelet Refractoriness
  - Early vs. Delayed Transfusion in Cirrhotic Patients
  - Zoonotic Babesiosis – A Growing Concern in Transfusion
* Course articles are not available individually.

Risks, Complications, and Reactions Associated with Transfusions

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H016
- CONTENT PAGES: 24
- QUIZ QUESTIONS: 13

**SUMMARY:**
- Discusses the current trends in blood safety.
- Describes causes & presentation of allergic reactions.
- Identifies cause of hypotensive transfusion reaction.
- Lists various complications from massive transfusion.
- Describes causes & presentation of post transfusion purpura.
- Describes the causes of TACO, TAD, TAGvHD, TRALI, and TRIM.
- Identifies causes of transfusion transmitted infections (TTI)
- Provides 1 hour in Immunohematology & 1 hour in Blood Banking

Transfusion Transmitted Infections

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: H019
- CONTENT PAGES: 15
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Lists the bacterial organisms associated with TTIs.
- Lists the parasitic diseases associated with TTIs and testing methods.
- Lists the spirochetes associated with TTIs and testing methods.
- Lists the viral diseases associated with TTIs and testing methods.
- Provides 1 hour in Immunohematology & 1 hour in Blood Banking
Ancillary Techniques in Histopathologic Diagnosis of Cervical SIL & GIL

BASIC INFO:
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: HI034
- CONTENT PAGES: 21
- QUIZ QUESTIONS: 20

SUMMARY:
- Discusses HPV induced cervical cancer.
- Discusses precursor lesions of cervical carcinoma.
- Discusses role HPV plays in carcinogenesis and the actions between oncoproteins and their cellular target proteins.
- Lists IHC stains used in the diagnosis of cervical lesions.
- Discusses detection of HPV through in Situ Hybridization.

Antigen Retrieval for Light & Electron Microscopy

BASIC INFO:
- CONTACT HOURS: 3
- COURSE LEVEL: Advanced
- COURSE CODE: IHC006
- CONTENT PAGES: 19
- QUIZ QUESTIONS: 12

SUMMARY:
- Briefly discusses antigen-antibody reactions.
- Discusses the different mechanisms of chemical fixation.
- Recalls the mechanisms of Heat Induced Antigen Retrieval.
- Discusses HIAR as it applies to immunoelectron microscopy.
- Describes the effects of diluents on antibodies in IHC.

Detection Systems in Immunohistochemistry

BASIC INFO:
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: IHC007
- CONTENT PAGES: 15
- QUIZ QUESTIONS: 15

SUMMARY:
- Describes Direct Detection Methods, recalling when they’re used.
- Describes Indirect Methods, recalling when they’re typically used.
- Discusses the Bridge Methods in IHC.
- Discusses the Biotin-Avidin/Streptavidin-Based Methods, listing the types.
- Discusses Polymer-Based Methods in IHC.
- Discusses Tyramide-Based Signal Amplification Methods in IHC.
- Discusses Rolling Circle Amplification Methods in IHC.

Electron Microscopy of Liver Biopsies

BASIC INFO:
- CONTACT HOURS: 4
- COURSE LEVEL: Intermediate
- COURSE CODE: HI029
- CONTENT PAGES: 24
- QUIZ QUESTIONS: 20

SUMMARY:
- Discusses general features of the liver biopsy.
- Discusses organelle pathology.
- Lists inborn lysosomal and metabolic diseases.
- Discusses infections and infestations.
- Lists different drugs and their hepatotoxicity.
Immunohistochemistry for Chronic Hepatitis Diagnosis

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: HI031
- CONTENT PAGES: 13
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Discusses Hepatitis B virus (HBV) and Hepatitis C virus (HCV).
- Discusses HBV, HCV, Hepatitis Delta antigens.
- Discusses viral hepatitis antigen detection with visual examples.

Immunohistochemistry in Breast Pathology

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Advanced
- COURSE CODE: HI040
- CONTENT PAGES: 16
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Recalls the background of IHC in breast pathology.
- Recalls the steps involved in IHC of the breast.
- Discusses quality control in IHC.
- Discusses prognostic & predictive roles of ER, PR, & Her-2 neu.
- Recalls the technical aspects in preanalytic, analytic, & postanalytic testing.

Immunohistochemistry in Cervical Cancer

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: HI039
- CONTENT PAGES: 6
- QUIZ QUESTIONS: 7

**SUMMARY:**
- Recalls the background of cervical cancer.
- Identifies the precursor lesions of squamous cell carcinoma.
- Discusses how IHC can identify cervical squamous cell carcinoma.
- Identifies the markers linked to tumor metastasis.
- Discusses markers that may predict response to chemotherapy.

Management / Supervision Category

**Assay Validations: Make Sure You Do It Right the First Time**

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: SU023
- CONTENT SLIDES: 29
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Lists the necessary steps to validate a new assay.
- Lists considerations when choosing a new clinical assay.
- Defines accuracy vs. precision.
- Reviews correlation.
- Reviews reference range determination.
- Discusses interference studies.
- Discusses special validation considerations.
### Basic Quality Control Review

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Basic
- **COURSE CODE:** SU019
- **CONTENT PAGES:** 11.5
- **QUIZ QUESTIONS:** 10

**SUMMARY:**
- Lists the purpose of QA, listing factors that QA monitors.
- Defines Quality Control (QC) and discusses quality control material.
- Lists the CLIA policy requirements for a good QC program.
- Compares and contrasts Random and Systematic errors.
- Defines how mean and standard deviation are used in QC.
- Guides interpretation of QC results using the Westgard Rules.

### CLIA: A Brief Overview

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Basic
- **COURSE CODE:** SU025
- **CONTENT PAGES:** 8
- **QUIZ QUESTIONS:** 6

**SUMMARY:**
- Recalls who CLIA is.
- Discusses the steps for enrolling in a CLIA program.
- Lists the types of CLIA Certificates, explaining each type.
- Briefly discusses when Proficiency Testing must be performed.
- Recalls Test Method Categorization, listing the levels of complexity.

### Employee Files: Don't Get Lost in the Paperwork

**BASIC INFO:**
- **CONTACT HOURS:** 1
- **COURSE LEVEL:** Basic
- **COURSE CODE:** SU022
- **CONTENT SLIDES:** 25
- **QUIZ QUESTIONS:** 5

**SUMMARY:**
- Identifies the pre- and post-hire education that must be documented on each laboratory employee.
- Describes annual education requirements for laboratory staff.
- Describes competency assessment requirements and their frequency.
- Specifies items that need to be documented for employee disciplinary action.

### How to Perform a Root Cause Analysis

**BASIC INFO:**
- **CONTACT HOURS:** TBD
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** SU026
- **COURSE SECTIONS:** 4 + Appendix
- **QUIZ QUESTIONS:** 12

**SUMMARY:**
- Defines Root Cause Analysis.
- Recalls the steps in a Root Cause Analysis.
- Recalls how to create diagrams for Root Cause Analysis.
Medical Errors and the Laboratory

BASIC INFO:
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SU027
- CONTENT PAGES: 23
- QUIZ QUESTIONS: 10

SUMMARY:
- FLORIDA LICENSEES – See the FL Mandatory Category
- Recalls the role of different government agencies to reduce errors.
- Explains the different types of laboratory errors.
- Recalls The Joint Commission’s (TJC) Sentinel Event policies.
- Recalls the process associated with Root Cause Analysis.
- Lists the National Patient Safety Goals.

Proficiency Testing: FAQ Basics

BASIC INFO:
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SU024
- CONTENT SLIDES: 47
- QUIZ QUESTIONS: 16

SUMMARY:
- Lists the agencies involved in CLIA and Proficiency Testing (PT).
- Defines what Proficiency Testing is and when it should be performed.
- Lists what you need to know about Proficiency Testing enrollment.
- Discusses the importance of Proficiency Testing & need for result privacy.
- Discusses what happens when your lab receives unsuccessful or failing PT.
- Recalls the list of Non-Waived analytes that require Proficiency Testing.

MICROBIOLOGY CATEGORY

1 Hour HIV-AIDS Review

BASIC INFO:
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: 1HIV019
- CONTENT PAGES: 38
- QUIZ QUESTIONS: 10

SUMMARY:
- FLORIDA LICENSEES – See the FL Mandatory Category
- Recalls a brief background on HIV-AIDS, explains what they are, and how HIV causes AIDS.
- Describes the Biology, structure, & replication cycle of HIV.
- Lists the HIV risk factors & symptoms of HIV-AIDS.
- Briefly discusses test methodologies.
- Lists the classes of drugs available for treatment.

3 Hour HIV-AIDS Review

BASIC INFO:
- CONTACT HOURS: 3
- COURSE LEVEL: Basic
- COURSE CODE: 3HIV019
- CONTENT PAGES: 3
- QUIZ QUESTIONS: 24

SUMMARY:
- FLORIDA LICENSEES – See the FL Mandatory Category
- Recalls a brief background on HIV-AIDS, explains what they are, and how HIV causes AIDS.
- Describes the Biology, structure, & replication cycle of HIV.
- Lists the HIV risk factors & symptoms of HIV-AIDS.
- Briefly discusses test methodologies.
- Lists the classes of drugs available for treatment.
### Antibiotic Resistance: A Review of the Current Threats

**BASIC INFO:**
- **CONTACT HOURS:** 2.5
- **COURSE LEVEL:** Basic
- **COURSE CODE:** M023
- **CONTENT PAGES:** 42 (many pics)
- **QUIZ QUESTIONS:** 12

**SUMMARY:**
- Recalls the average number of annual antibiotic resistant infections.
- Describes how antibiotic resistance happens & how it’s spread.
- Lists the three antibiotic resistance threat levels & what they mean.
- Identifies the bacteria listed in the Urgent, Serious, and Concerning threat categories, listing what each is resistant to.

### Bioterrorism: A Worldwide Threat

**BASIC INFO:**
- **CONTACT HOURS:** 2
- **COURSE LEVEL:** Basic
- **COURSE CODE:** M025
- **CONTENT PAGES:** 13
- **QUIZ QUESTIONS:** 12

**SUMMARY:**
- Lists all the biological agents of terrorism.
- Discusses the background of each agent and recalls whether it’s been used in a terror attack.
- Lists the chemical agents of terrorism.
- Discusses the chemical agents of terrorism, how they work, and whether they’ve been used in a terror attack.

### Ebola Review for the Laboratory

**BASIC INFO:**
- **CONTACT HOURS:** 4
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** SU022
- **CONTENT SLIDES:** 25
- **QUIZ QUESTIONS:** 25

**SUMMARY:**
- Recalls the background and history of Filoviruses, including Ebola.
- Describes how Ebola causes disease and how it is transmitted.
- Lists the signs and symptoms of Ebola virus.
- Recalls the PPE guidelines for Ebola care.
- Discusses lab testing expectations, recalling safety considerations.
- Lists the types of Ebola testing available.
- Describes appropriate procedures for shipping Ebola specimens.
- Recalls the guidelines for Ebola waste management & disinfection.

### Microbiology of Ventilator Associated Pneumonia

**BASIC INFO:**
- **CONTACT HOURS:** 2
- **COURSE LEVEL:** Intermediate
- **COURSE CODE:** M029
- **COURSE PAGES:** 14
- **QUIZ QUESTIONS:** 18

**SUMMARY:**
- Discusses the background for Ventilator Associated Pneumonia (VAP).
- Lists the risk factors associated with VAP.
- Discusses the most common organisms in VAP.
- Recalls the virulence of the major organisms involved in VAP.
- Recalls the antimicrobial susceptibility of the common organisms.
- Discusses the methods for laboratory diagnosis of VAP.
Nocardiosis: Clinical and Pathological Aspects

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: M026
- CONTENT PAGES: 13
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Recalls the Taxonomy and Epidemiology of Nocardia.
- Describes the microbiological profile of Nocardia.
- Discusses the clinical features of Nocardia.
- Briefly recalls the clinical features of Nocardia in immunocompromised patients.
- Lists the treatment options available for treating Nocardia.

People, Pets, and Zoonoses

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: M018
- CONTENT PAGES: 25
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Identifies the term Zoonose, recalling who’s at risk & prevention strategies.
- Lists the zoonotic diseases each type of animal can carry.
- Recalls general information about the most common bacterial, fungal, viral, and parasitic zoonoses, including transmission, symptoms, diagnosis, and treatment strategies.

Sexually Transmitted Diseases

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: M019
- CONTENT PAGES: 24
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Identifies the infectious agents that cause STDs.
- Lists the organisms capable of causing genital ulcers & warts, urethritis, cervicitis, trichomonas, and vulvovaginal candida, describing the signs & symptoms, diagnosis, and treatment.
- Briefly discusses the causative agents for PID, epididymitis, and proctitis.
- Lists several ways to prevent STDs from occurring.

Tickborne Illness Package

**PACKAGES ARE NOT AVAILABLE IN THE LAB SUBSCRIPTION**
* Courses that make up a Package are available in Subscriptions as individual titles *
Tickborne Illness: Vector Review

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: M030
- CONTENT PAGES: TBD
- QUIZ QUESTIONS: TBD

**SUMMARY:**
- Reviews the vectors associated with tickborne illness.
- Discusses their stages and lifecycle.
- Lists the diseases associated with each type of tick.

Tickborne Illness: Review of Diseases

**BASIC INFO:**
- CONTACT HOURS: TBD
- COURSE LEVEL: Basic
- COURSE CODE: M031
- CONTENT PAGES: TBD
- QUIZ QUESTIONS: TBD

**SUMMARY:**
- Reviews Anaplasmosis, Babesiosis, Ehrlichichiosis, Lyme Disease, Rocky Mountain Spotted Fever, Tuleremia, and other lesser known tickborne diseases.
- Lists the locations found, incubation period, signs & symptoms, general laboratory findings, and treatment for the main tickborne diseases.

Understanding Sepsis

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: M028
- CONTENT SLIDES: 58
- QUIZ QUESTIONS: 14

**SUMMARY:**
- Generally, defines what sepsis is, how it starts, and risk factors.
- Lists the differences between Sepsis-2 and Sepsis-3.
- Recalls common signs and symptoms a patient may experience.
- Lists the lab tests commonly ordered to diagnose sepsis & significance of their values.
- Recalls treatments commonly used for sepsis patients.
- Lists some of the conditions a patient may experience with post sepsis syndrome (PSS).

Zika Virus: Update and Overview

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: M024
- CONTENT PAGES: 9
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Describes where Zika virus was first discovered.
- Recognizes species of mosquito that carry Zika in the U.S.
- Elaborates how Zika virus can and cannot be spread.
- Describes the Pathologies cause by Zika in the fetus and newborns.
- Discusses testing for the Zika virus.
## Genetic Testing: A Basic Review

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: MP010
- CONTENT PAGES: 13
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Lists the different types of genetic testing.
- Defines informed consent.
- Describes what “Direct to Consumer” testing is.
- Discusses what various genetic test results may mean & the benefits.
- Defines genetic discrimination.
- Recalls whether genes can be patented.
- Explains genetic ancestry testing.

## PCR and Infectious Diseases

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: MP011
- CONTENT PAGES: TBD
- QUIZ QUESTIONS: 5

**SUMMARY:**
- Discusses infectious diseases and the benefits of polymerase chain reaction (PCR).
- Lists the different PCR techniques, including Multiplex PCR, LAMP-PCR, Real-Time PCR, and Digital PCR, and each of their clinical applications in the diagnosis of infectious disease.

## Regulatory Concern of PCR Carryover Concern

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: MP013
- CONTENT PAGES: 9
- QUIZ QUESTIONS: 7

**SUMMARY:**
- Discusses Polymerase Chain Reaction (PCR), PCR-based technologies, and PCR contamination.
- Lists potential sources of contamination in PCR.
- Lists the different methods to control contamination in PCR.
- Discuss the methods to detect contamination in PCR.

## RNA & DNA: A Basic Review

**BASIC INFO:**
- CONTACT HOURS: 2.5
- COURSE LEVEL: Basic
- COURSE CODE: MP009
- CONTENT PAGES: 36 (many pics)
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Describes the structure of DNA and recalls how it replicates itself.
- Describes the processes of meiosis, transcription, and translation.
- Describes the structure of ribosomes and recall what they do.
- Describes what a DNA microarray is and what it can do.
- Lists the differences between RNA and DNA.
- Defines the terms microRNA, RNA interference, gene expression, etc.
- Defines what a telomere is and what its function is.
- Describes what mitochondrial DNA is and where it comes from.
## Use of Nucleic Acid Testing in Molecular Diagnostics

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: MP012
- CONTENT PAGES: 12
- QUIZ QUESTIONS: 11

**SUMMARY:**
- Recalls the process of PCR.
- Describes the importance of Nucleic Acid measurement in HIV-1.
- Describes how Nucleic Acid Testing is used in other therapeutic areas including, infectious disease, blood screening, genetics, prenatal testing, inherited diseases, and cancer markers.

## What is a Genome

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: MP008
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 11

**SUMMARY:**
- Recalls the physical sub-structure of the Human Genome.
- Describes the step by step process that takes genes and turns them into proteins.
- Discusses human genes and their process of switching, transcription, and transmission.
- Recalls the various mechanisms of genetic variation & heredity.

## PHLEBOTOMY CATEGORY

### Human Blood Composition: Review of Cellular Components

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: PH007
- CONTENT PAGES: 14
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Describes a red blood cell (RBC), listing causes of abnormal values.
- Describes where White Blood Cells (WBCs) can be found.
- Lists the five different types of EBCs and discusses the reasons for increased or decreased values of each.
- Describes the purpose of Platelets, listing the causes for abnormal values.

### Infectious Complications Caused by Phlebotomy

**BASIC INFO:**
- CONTACT HOURS: 2.5
- COURSE LEVEL: Basic
- COURSE CODE: PH006
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 10

**SUMMARY:**
- List the types of infectious complications that can occur from phlebotomy.
- List the signs & symptoms, laboratory evaluation, and treatment options for cellulitis.
- List the signs & symptoms, laboratory evaluation, and treatment options for abscesses.
- List the signs & symptoms, laboratory evaluation, and treatment options for sepsis and septicemia.
- Recalls the patient risk factors that may contribute to complications.
- Recalls some important infection control measures for safety.
Patient Injuries Caused by Phlebotomy

**BASIC INFO:**
- CONTACT HOURS: 2.5
- COURSE LEVEL: Basic
- COURSE CODE: PH005
- CONTENT PAGES: 19
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Discusses why phlebotomy injuries occur.
- Describes the injuries that can be caused by tourniquet application.
- Explains what a hematoma is and how it is caused.
- Describes what compartment syndrome is and the complications it causes.
- Explains phlebitis & thrombophlebitis, describing the symptoms.
- Recalls the signs & symptoms of nerve injury and its prevention.
- Lists the sites that should be avoided during venipuncture.

Preanalytical Errors in Specimen Collection

**BASIC INFO:**
- CONTACT HOURS: 3.5
- COURSE LEVEL: Basic
- COURSE CODE: PH004
- CONTENT PAGES: 26
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Highlights the three different types of laboratory errors.
- Discusses the laboratory’s role in quality specimen collection.
- Lists the different types of preanalytical errors that can occur in specimen collection.

Specimen Collection: A Basic Review

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: PH003
- CONTENT SLIDES: 40
- QUIZ QUESTIONS: 13

**SUMMARY:**
- Lists patient identification procedures.
- Discusses the order of draw and its significance.
- Describes proper labelling techniques.
- Describes the proper technique for blood culture collection.
- Discusses collection, equipment, selecting draw sites, etc.
- Discusses capillary collection, including steps, sites, & tips.

SAFETY CATEGORY

12 Hours Bloodborne Pathogens Review

**SUMMARY:**
- Packages are NOT available in the lab subscription.

* Courses that make up a Package are available in Subscriptions as individual titles *
| Subscription Course Titles |

### BBP SERIES: Basic Review of the Pathogens

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SAF003
- CONTENT PAGES: 15
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Lists potential BBPs, recalling the most common ones.
- Lists the transmission routes for BBP.
- Recalls the background, symptoms, incubation period, risk of occupational injury & post-exposure prophylaxis, for HIV, HBV, and HCV.
- Discusses what to do after a BBP exposure.
- Recalls how to minimize having an occupational exposure.

### BBP SERIES: Communication Hazards & Recordkeeping

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SAF008
- CONTENT PAGES: 12
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls the importance of Labels & Signs in relation to BBP.
- Discusses training as it relates to BBP and the content that must be provided in the training courses.
- Recalls when and how appropriate training is conducted.
- Discusses the standard requirements for training and medical records.

### BBP SERIES: Exposure Control Plan

**BASIC INFO:**
- CONTACT HOURS: 4
- COURSE LEVEL: Basic
- COURSE CODE: SAF004
- CONTENT PAGES: 18
- QUIZ QUESTIONS: 23

**SUMMARY:**
- Recalls the purpose of the Exposure Control Plan (ECP).
- Recalls how often the ECP must be updated & who should have access.
- Lists the main sections of the ECP.
- Discusses the main areas of the ECP & possible citations when the plan is not followed.

### BBP SERIES: HBV Vaccination and Exposure Control Procedures

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SAF007
- CONTENT PAGES: 10
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls the basics of the BBPO Standard that focuses on HBV vaccination.
- Discusses the HBV vaccination policies.
- Lists the steps to take during a post-exposure evaluation.
### BBP SERIES: HIV and HBV Research Production Facilities

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: SAF006
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 8

**SUMMARY:**
- Defines Research Laboratory.
- Recalls the criteria that must be met at research laboratories.
- Recalls the containment equipment used at research laboratories.

### BBP SERIES: Personal Protective Equipment

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: SAF008
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls the appropriate use of PPE, including donning & doffing.
- Lists the different types of gloves and describing limitations of each.
- Lists the different types of outerwear, describing their limitations.
- Lists the different types of eye protection, describing their limitations.
- Lists the different types of respiratory protection & their limitations.

### Biological Safety Cabinets

**BASIC INFO:**
- CONTACT HOURS: 4
- COURSE LEVEL: Basic
- COURSE CODE: SU020
- CONTENT PAGES: 35
- QUIZ QUESTIONS: 30

**SUMMARY:**
- Discusses the purpose of Biological Safety Cabinets (BSC).
- Discusses the functionality of HEPA filters.
- Identifies the mechanical & biological differences of Class I, Class II, and Class III BSCs.
- Lists some general rules to ensure safety when working in a BSC.
- Discusses the maintenance & engineering requirements for BSCs.
- Identifies the steps necessary to certify the biosafety cabinets.

### Latex Allergy in Healthcare

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Basic
- COURSE CODE: SAF011
- CONTENT PAGES: TBD
- QUIZ QUESTIONS: TBD

**SUMMARY:**
- Information To Follow……….
### Hand Hygiene

**BASIC INFO:**
- CONTACT HOURS: 2.5
- COURSE LEVEL: Basic
- COURSE CODE: SAF009
- CONTENT SLIDES: 59
- QUIZ QUESTIONS: 15

**SUMMARY:**
- Recalls the birth of hand hygiene.
- Discusses the importance of hand hygiene in relation to healthcare acquired infections (HAIs).
- Recalls when to perform hand hygiene.
- Lists the steps for correctly performing hand hygiene.
- Lists concerns related to hand hygiene.
- Lists hand hygiene facts and “truths worth knowing”.

### Hepatitis B: Immunity & Prevention Strategies Through Vaccination

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: S020
- CONTENT PAGES: 31
- QUIZ QUESTIONS: 31

**SUMMARY:**
- Discusses the clinical features & complications of HBV.
- Identifies appropriate lab tests for pre and post vaccine testing.
- Discusses the epidemiology of HBV.
- Lists general characteristics of HBV vaccines.
- Discusses the immunogenicity & vaccine effectiveness among age groups.
- Recalls vaccine schedules & effectiveness among age groups.
- Discusses post-vaccination testing, treatment options for post-exposure.
- Lists contraindications and adverse reactions.

### Immune Principles of Vaccination

**BASIC INFO:**
- CONTACT HOURS: 1.5
- COURSE LEVEL: Basic
- COURSE CODE: S022
- CONTENT PAGES: 10
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Recalls what Passive Immunity is and gives examples.
- Recalls what Active Immunity is and gives examples.
- Recalls what Live Attenuated vaccine, Inactivated Vaccine, and Polysaccharide Vaccines are, describing the immune response.
- Describes how a Recombinant Vaccine is made, listing the types of vaccines available.

### Immunoglobulin Review – PART I: Immunoglobulin Structure

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: SAF011
- CONTENT PAGES: 7
- QUIZ QUESTIONS: 6

**SUMMARY:**
- Recalls a brief overview of immunoglobulins.
- Describes the immunoglobulin structure.
- Lists the major components of an immunoglobulin and their function, including heavy and light chains, disulfide bonds, hinge region, and immunoglobulin fragments.
- Describes the antigen-antibody complex and its functions.
Immunoglobulin Review – PART II: Immunoglobulin Types & Uses

**BASIC INFO:**
- CONTACT HOURS: 1
- COURSE LEVEL: Intermediate
- COURSE CODE: S028
- CONTENT PAGES: 19
- QUIZ QUESTIONS: 20

**SUMMARY:**
- Recalls a brief overview of immunoglobulins (Ig).
- Describes the immunoglobulin structure.
- Lists the 5 types of immunoglobulins, describing each type.
- Lists disease states that causes elevated and decreased Ig levels.
- Lists the medical applications for antibodies.

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Introduction to Basic Immunology

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: S021
- CONTENT PAGES: 16
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Identifies the organs that are part of the lymphoid system, recalling their function.
- Recalls the details of Innate Immunity, discussing the cells involved.
- Recalls the details of Adaptive immunity and how T and B cells function.
- Discusses the differences between antibody- vs cell-mediated immunity.
- Describes Passive and Active Immunization.
- Recalls the disorders of a malfunctioning immune system.

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Introduction to Immunology and Immunopathology

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Basic
- COURSE CODE: S029
- CONTENT PAGES: 11
- QUIZ QUESTIONS: 9

**SUMMARY:**
- Defines Innate and Adaptive Immunity, listing components of each.
- Compares and contrasts antibody- & cell- mediated immunity.
- Compares and contrasts Passive vs. Active immunization.
- Discusses immunopathology, including: hypersensitivity reactions, autoimmunity, and immunodeficiency.

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Toxic Epidermal Necrolysis and Stevens-Johnson Syndrome

**BASIC INFO:**
- CONTACT HOURS: 2
- COURSE LEVEL: Intermediate
- COURSE CODE: S018
- CONTENT PAGES: 8
- QUIZ QUESTIONS: 12

**SUMMARY:**
- Recalls the background on TENS & Stevens-Johnson Syndrome (SJS).
- Recalls the epidemiology of TENS and SJS.
- Lists the clinical features, recalling the acute & late phase sequelae.
- Describes the etiology & pathogenesis of TENS and SJS, including genetic susceptibility, drugs, and diagnosis.
- Lists the management and therapy options for treating TENS & SJS.
- Recalls the prognosis for TENS and SJS.
Understanding the ABCs of the Immune System

**BASIC INFO:**
- CONTACT HOURS: 2.5
- COURSE LEVEL: Intermediate
- COURSE CODE: S024
- CONTENT PAGES: 20
- QUIZ QUESTIONS: 10

**SUMMARY:**
- Lists areas of the body where immune cells are located.
- Describe the three different types (features) of an immune response.
- Lists the different cells of the immune system, recalling their function.
- Recalls what immune tolerance is.
- Lists the major disorders of the immune system, giving examples of each.

Western Blot: A Valuable Immunoassay

**BASIC INFO:**
- CONTACT HOURS: 3
- COURSE LEVEL: Intermediate
- COURSE CODE: S030
- CONTENT PAGES: 16
- QUIZ QUESTIONS: 20

**SUMMARY:**
- Recalls a history of the Western Blot (WB) technique.
- Discusses the evolution of the Western Blot technique over time.
- Lists other test methods based on Western Blotting.
- Discusses Western Blot applications.
- Lists other immunoassay methods and the connection with WB.

- - - END OF THE INDIVIDUAL COURSE LIST - - -

**Understanding this Course Format:**

With the Online Complete format, the purchaser receives the reading material in an online document – typically a PDF file – and an online quiz. One copy of the document can be printed out or can be saved to a flash drive to be shared with coworkers or saved for future reference. Remember to save a copy of the document before completing the quiz.

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**QUESTION:** How can we set up a new Group for our Lab?
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