**Teacher:** Anna K. Swann, M.S., MLS(ASCP)CM

**Lesson Title:** Introduction to Hemostasis

* Main Topics:
  + Primary Hemostasis
  + Secondary Hemostasis
  + Fibrinolysis

**Subject Area:** Coagulation

**Grade Level:** University

**Time Needed:** Five 90 minute lectures

**Learning Objectives** (including cognitive and behavioral objectives)

1. Define hemostasis, coagulation, and thrombosis.
2. Define primary and secondary hemostasis.
3. Name the three types of blood vessels and explain the general roles of the vasculature and normal endothelial cells in aiding and preventing the activation of the hemostatic system.
4. Outline the steps platelets undergo in forming the primary hemostatic plug, including the biochemical mediators necessary for platelet adhesion, platelet aggregation, and platelet secretion.
5. Diagram the sequence of reactions in the coagulation cascade according to the concepts of intrinsic, extrinsic, and common pathways.
6. List the coagulation factors using roman numerals and classify the factors into three groups based on structural and functional properties; identify the characteristics of each group.
7. Define fibrinolysis, identify the major components of the fibrinolytic system, and explain why fibrinolysis is a necessary component of hemostasis.
8. List the fragments resulting from fibrinolytic degradation; compare and contrast fragments resulting from degradation of fibrinogen and fibrin.
9. Explain the general interaction of the four systems involved in maintaining hemostasis.
10. Distinguish the events that occur in primary hemostasis from those that occur in secondary hemostasis.
11. List the major biochemical inhibitors that regulate hemostasis and discuss how they function.

**Student Learning Resources at Home**

* Textbook: McKenzie, S.B., & Williams, J.L (2015). Clinical Laboratory Hematology, Pearson Education Inc. ISBN 978-0-13-307601-1.
* Lecture PowerPoints from Blackboard
* Google Slides presentations
* Teacher selected YouTube videos on the following page: <https://www.youtube.com/playlist?list=PL30edgscbQh2KRj1MNbf_a_uD5I8GK9YP>

**Student Learning Activities at Home**

* Read assigned textbook chapters
* Review Google Slides presentations
* Review PowerPoints
* Prepare assigned materials

**Classroom Activities**

* Lecture
* Group activities
* Review homework and quizzes
* Teacher facilitated discussion
* Supplemental Videos

**Assessment**

* Daily group quizzes
* Daily individual quizzes
* Written exam at end of lesson

**Tentative Schedule**

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| **Day** | **Topic** | **Activities** | **Readings and Assignments** |
| **Monday** | Introduction to Hemostasis and Primary hemostasis  Objectives 1-4 | Quiz #1  Group Quiz #1  Lecture, videos, and discussion | Chapter 31 in text  Ch. 31 slides  Podcast  Classnotes  PowerPoint  Assignment 1 |
| **Tuesday** | Review Primary Hemostasis  Objectives 1-4 | Quiz #2  Group Quiz #2  Group Project #1  Discussion | YouTube video  Assignment 2 |
| **Wednesday** | Secondary Hemostasis  Fibrinolysis  Objectives 5-11 | Quiz #3  Group Quiz #3  Lecture, videos, and discussion | Chapter 32 in text  Fibrinolysis thinglink  Assignment 3 |
| **Thursday** | Review  Objectives 1-11 | Quiz #4  Group Quiz #4  Group Project #2  Discussion | EDpuzzle video 1  Assignment 4 |
| **Friday** | Primary Hemostasis  Secondary Hemostasis  Fibrinolysis | Exam covering objectives 1-11 | Chapters 31 and 32 in text |