<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>(8.15-9.00)</td>
<td>Fibrinolysis and fibrin structure</td>
<td>Venous thrombosis</td>
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<td>Written exam (all)</td>
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<tr>
<td>9.00-9.45</td>
<td>The role of the vessel wall</td>
<td>Anticoagulation treatment</td>
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<tr>
<td>9.45-10.15</td>
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<tr>
<td>10.15-11.00</td>
<td>Introduction of course/exam?</td>
<td>Study visit in lab?</td>
<td>Arterial thrombosis</td>
<td>Inherited bleeding problems</td>
<td>Demo (flow cytometry, ACL TOP) group I/work with exam group II</td>
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<tr>
<td>11.15-12.00</td>
<td>Primary hemostasis – introduction</td>
<td>Anticoagulation systems</td>
<td>Anti-platelet agents</td>
<td>Management of inherited bleeding</td>
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<tr>
<td>13.00-13.45</td>
<td>Secondary hemostasis – cell-based model</td>
<td>Platelet signaling</td>
<td>Lab: Platelet function testing group</td>
<td>Acute bleeding</td>
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<td>I/PK+APTT group II</td>
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<tr>
<td>13.45-14.45</td>
<td>Contact activation – biomaterials etc</td>
<td>Platelet signaling II</td>
<td>Management of acute bleeding</td>
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<tr>
<td>14.45-15.15</td>
<td>Coagulation and inflammation/complement</td>
<td>Platelet function testing, flow cells</td>
<td>Lab: Platelet function testing group</td>
<td>Hemostasis tests in the lab</td>
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<td>system</td>
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<td>II/PK+APTT group I</td>
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<td>Feedback on examination/course evaluation</td>
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<tr>
<td>15.15-16.00</td>
<td>Platelet-coagulation interactions</td>
<td>Global coagulation tests</td>
<td>Hemostasis tests in the lab II</td>
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<td>16.15-17.00</td>
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<td>evening</td>
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Specific topics:

Primary hemostasis – introduction:
- Platelet structure etc.
- Platelet adhesion
- Platelet activation – agonists
- Degranulation
- Surface changes (brief)

Secondary hemostasis – cell-based model
- Intrinsic pathway
- Extrinsic pathway
- Tissue factor
- Role of cell surfaces for efficient coagulation

Contact activation – biomaterials etc
- Factor XII and feedback loops
- Role in biomaterial research
- Biocompatibility testing

Coagulation and inflammation/complement system
- Connections between coagulation system and inflammation - consequences
- Connections between coagulation system and complement system - consequences

Platelet-coagulation interactions

Platelet formation (?)
- Subpopulations
- Differences between agonists
- Clot retraction?

Fibrinolysis and fibrin structure
- Factor XIII
- Fibrinogen structure
- Fibrin network - consequences of differences in structure
- Fibrinolysis - activating and inhibiting systems (TAFI etc)

The role of the vessel wall
- Role of shear/different geometries
- Vasoconstriction etc
- Release of anti-platelet substances
- Endothelium
- Subendothelium
- Vessel wall problems contributing to thrombosis/bleeding
- Von Willebrand factor

Anticoagulation systems
- Protein C/S system
- Antithrombin system
- Protein Z system

Platelet signaling

GPCRs – thrombin, TXA2, ADP, adrenaline etc
- Other signaling pathways – collagen etc (ITAM)
- Integrin signaling (outside in-inside out)
- Calcium changes
- Feed-back pathways
- Desensitization

Platelet function testing
- Aggregometry (LT and WB)
- Adhesion methods
- Flow cells
- Flow cytometry

Global coagulation tests
- TEG/ROTEM/FOR
- Thrombin generation
- Other tests (OHP etc)

Venous thrombosis
- When?
- Where?
- How?
- Why?

Anticoagulation treatment
- Heparins
- Warfarin
- NOAC
**Arterial thrombosis**

When?  
Where?  
How?  
Why?

**Anti-platelet agents**

ADP-rec antagonists  
ASA  
GPIIb-receptor antagonists  
New approaches

**Lab: Platelet function testing**

LT aggregometry  
Multiplate?  
Flow cell (or as demo?)

**Lab: PK+APTT**

Manual clotting in water bath (will also give repetition of coagulation system, cell-based model etc)

**Transfusion**

Blood products  
When to use each type  
Risks and challenges

**Future development**

**Inherited bleeding problems**

vWD  
Platelet function defects  
Haemophilia  
Other factor deficiencies  
Also include acquired bleeding problems?

**Management of inherited bleeding**

Factor concentrates  
Other drugs used  
New developments

**Acute bleeding**

When?  
Where?  
Why? (trauma/surgery/drug-induced etc)

**Management of acute bleeding**

Blood products  
Factor concentrates  
Other drugs used  
New developments?

**Hemostasis tests in the lab**

(PK/APTT brief, already covered by lab)  
D-dimer  
specific factor analyses  
lupus  
gene tests  
cell counts

**Written examination**

Individual written exam (approx. 1 h?)

**Demo (flow cytometry, ACL TOP)**

Flow cytometry  
ACL TOP (or similar): one or a few of D-dimer, specific factor analysis, PK/APTT, lupus?

**Work with examination**

Time to read more and find more complete answers on the questions in the exam (individual work)

**Feedback on examination**

Group discussion of questions from the exam (with focus on the ones that was causing most problems in the written exam)