<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Lecturer</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>Tue Oct 6</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>L3 Filtering and pre-processing + morphology</td>
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<tr>
<td>Wed Oct 7</td>
<td>10:15-12:00</td>
<td>tba</td>
<td>L6 Feature extraction</td>
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<td>Tue Oct 13</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>L7 Classification I</td>
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<td>Wed Oct 14</td>
<td>10:15-12:00</td>
<td>tba</td>
<td>L4 Color + multispectral images</td>
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<td>Tue Oct 20</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>L8 Classification II, machine learning</td>
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<td>Wed Oct 21</td>
<td>10:15-12:00</td>
<td>tba</td>
<td>L2 Pointwise operations/Image transforms</td>
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<td>Tue Oct 27</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>L9 Deep learning and AI in image analysis</td>
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<td>Wed Nov 4</td>
<td>10:15-12:00</td>
<td>tba</td>
<td>L10 Research methodology and research ethics in image analysis</td>
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<td>Tue Nov 10</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>Exam</td>
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<td>Wed Nov 17</td>
<td>10:15-12:00</td>
<td>tba</td>
<td>P1 Deep learning in practice</td>
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<td>Wed Nov 25</td>
<td>10:15-12:00</td>
<td>DM</td>
<td>P2 Image analysis using Matlab</td>
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**Lecturer PART 1 - Lectures: Basic image analysis methods**

- DM L1 Introduction (presentation, digitization, project intro, file formats/compression)
- tba L2 Pointwise operations/Image transforms
- tba L3 Filtering and pre-processing + morphology
- tba L4 Color + multispectral images
- tba L5 Segmentation + distance transform
- DM L6 Feature extraction
- DM L7 Classification I
- tba Ex1 ImageJ
- DM L8 Classification II, machine learning
- tba Ex2 Ilastik
- DM L9 Deep learning and AI in image analysis
- tba Ex3 CellProfiler
- tba L10 Research methodology and research ethics in image analysis
- DM exam
- DM P1
- DM P2
- DM P presentations

**PART 2 - Applications and advanced topics**

- P intro is an introduction to the project work
- P1 Project specific lectures/seminars and discussion of project plans
- P2 Project specific lectures and feedback on project progression
- P report deadline
- P presentations in the form of a mini-symposium

**Examples of project specific lectures and advanced topics**

- Interactive/advanced image segmentation
- Image registration
- Hands-on exercise on 3D slicer
- Electron Microscopy image analysis
- Cell image analysis
- Image-based screening
- Hands-on advanced functions in CellProfiler and CellProfiler Analyst
- Deconvolution
- Deep learning in practice
- Image analysis using Matlab

**DM: Damian Matuszewski**