Medical Biophysics  
MEDBIO 3330F— HUMAN BIOMECHANICS WITH BIOMEDICAL APPLICATIONS

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: Abbas Samani  
Email: asamani@uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded). Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>T</td>
<td>11:30-12:30</td>
<td>weekly</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>Th</td>
<td>11:30-1:30</td>
<td>weekly</td>
<td>N/A</td>
</tr>
<tr>
<td>Virtual synchronous</td>
<td>F</td>
<td>3:30-5:30</td>
<td>weekly</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Virtual synchronous sessions will be recorded for later viewing  
**A schedule will be posted

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Written assignments
- Oral presentations
- Other:

- Participation
- Discussion forums
- Groupwork
- Other:

- Take home tests/exams
- Timed tests/exams
- Proctored tests/exams
- Other:
Medical Biophysics
MEDBIO 3501A—Biophysics of Transport Systems

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: Dr. John McGuire Email: John.McGuire@schulich.uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (e.g. recorded; interactive; forum/group chat) modes. Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
</table>
| Virtual synchronous*  | Tues/ Wed | By section: Tuesdays
12:30 pm – 1:30 pm or
Wednesdays
11:30 am - 12:30 pm | weekly     | Yes                   |
| Virtual asynchronous  | N/A       | 2 hours                         | weekly      | N/A        |

* The instructor, and Teaching Assistants may record Virtual synchronous sessions for later viewing either in whole or in part.
** A schedule will be posted with the final version of the course syllabus.

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

<table>
<thead>
<tr>
<th>Weekly quizzes</th>
<th>Participation</th>
<th>Take home tests/exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignments</td>
<td>Discussion forums</td>
<td>Timed tests/exams</td>
</tr>
<tr>
<td>Oral presentations</td>
<td>Groupwork</td>
<td>Proctored tests/exams</td>
</tr>
</tbody>
</table>
Medical Biophysics
MEDBIO 3507G—Analysis of Oxygen Transport

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: D. Goldman
Email: dgoldma2@uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:

- Stable internet connection
- Laptop or computer
- Working microphone

Delivery mode:
This course will be delivered completely online. Virtual sessions will be synchronous (live). Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>T/Th</td>
<td>9:30-10:20</td>
<td>weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual synchronous*</td>
<td>W or Th</td>
<td>2:30-4:30</td>
<td>weekly</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Virtual synchronous sessions will be recorded for later viewing

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Written assignments
- Oral presentations
- Other:

- Participation
- Discussion forums
- Groupwork
- Other:

- Take home tests/exams
- Timed tests/exams
- Proctored tests/exams
- Other:
Medical Biophysics
MEDBIO 3518B—Introduction to Molecular Imaging

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructors:  Dr. Savita Dhanvantari  
             Dr. Donna Goldhawk  
             Dr. Mamadou Diop  
             Dr. Paula Foster  

Email:  sdhanvan@lawsonimaging.ca  
        goldhawk@uwo.ca  
        mdiop@uwo.ca  
        pfoster@robarts.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:

- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded). Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In person</td>
<td>M/W/F</td>
<td>1:30-2:20</td>
<td>weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual synchronous*</td>
<td>M/W/F</td>
<td>1:30-2:20</td>
<td>weekly</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>3 hours</td>
<td>weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

[*Virtual synchronous sessions will be recorded for later viewing]  
[**A schedule will be posted]

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Participation
- Written assignments
- Discussion forums
- Oral presentations
- Groupwork
- Take home tests/exams
- Oral presentations
- Groupwork
- Other:
- Timed tests/exams
- Proctored tests/exams
- Other:
- Other:
Medical Biophysics
MEDBIO 3970Z—General Biophysics Lab

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: John Ronald, Ph.D. Email: jronald@robarts.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode: [update content in square brackets; delete rows in the table that do not apply]
This course [will have in person components or will be delivered completely online]. Virtual sessions will be [synchronous (live), asynchronous (recorded), or a combination of synchronous (live) and asynchronous (recorded)]. Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>M</td>
<td>[10:30-1:30; 2:30-5:30]</td>
<td>[Every 2 Weeks]</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>[1-3 hours]</td>
<td>[Every 2 Weeks]</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*[Virtual synchronous sessions will be recorded for later viewing]  
[**A schedule will be posted]

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Participation
- Take home tests/exams
- Written assignments
- Discussion forums
- Timed tests/exams
- Oral presentations
- Groupwork
- Proctored tests/exams
- E-poster presentations
- Journal Club
- Other:
Medical Biophysics
MEDBIO 4445A—Digital Imaging Processing

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: Hanif M. Ladak  
Email: hladak@uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:

- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will have content that will be delivered online as well as an optional in-person component. Virtual sessions will be a combination of asynchronous (recorded) lectures and synchronous (live) office hours. Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In person</td>
<td>M</td>
<td>7:30 PM - 8:30 PM</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>In person</td>
<td>W</td>
<td>6:30 PM - 7:30 PM</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>In person</td>
<td>F</td>
<td>12:30 PM - 1:30 PM</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual synchronous*</td>
<td>T</td>
<td>1:30 PM - 3:30 PM</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>3 hours</td>
<td>Weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**A schedule will be posted

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Written assignments
- Oral presentations
- Programming assignments
- Participation
- Discussion forums
- Groupwork
- Take home tests/exams
- Timed tests/exams
- Proctored tests/exams

Other:
Medical Biophysics
MEDBIO 4455A — Biological Control Systems

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: James Lacefield
Email: jlacefie@uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will have optional in-person components. Virtual sessions will be asynchronous (recorded). Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In person</td>
<td>M</td>
<td>7:30 pm</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>W</td>
<td>6:30 pm</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>12:30 pm</td>
<td>Weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>3 hours</td>
<td>Weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Biweekly quizzes
- Written assignments
- Oral presentations
- MATLAB simulations
- Participation
- Discussion forums
- Groupwork
- Other:

- Take home tests/exams
- Timed tests/exams
- Proctored tests/exams
- Other:
Medical Biophysics
MEDBIO 4475A – Medical Imaging

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft; final details will be reflected in the syllabus closer to the course start date. Refer to prior course syllabi for learning outcomes.

Instructors: Maria Drangova (coordinator), Jim Lacefield, Ian Cunningham, Keith St. Lawrence, David Holdsworth

Email: mdrangova@robarts.ca

Course description
Through this introductory course the student will learn the physics and methods of how medical images are formed. By the end of the term the student will understand how images are formed for the following different imaging modalities: ultrasound, x-rays, computed tomography, nuclear medicine, positron-emission tomography, and magnetic resonance imaging. To understand the tomographic imaging modalities, the student will also gain knowledge of the Fourier Transform and its applications in medical imaging. A basic understanding of the sources of noise and artifacts in the different modalities will also be attained, along with an understanding of the limits to the achievable resolution. The official course description can be found in the Academic Calendar.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded). Students could be expected to complete work prior to attending synchronous sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. The details below are tentative.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>M</td>
<td>4 – 5 p.m.</td>
<td>weekly</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>2 hours</td>
<td>weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Virtual synchronous sessions will be recorded for later viewing
***The split between synchronous or asynchronous hours is yet to be determined; Synchronous hours will be selected from the following times: Monday 3:30 to 5:30 and Friday 9:30 to 10:30.

Assessments:
Possible assessment types are highlighted in yellow; these are based on previous course offerings and the set learning outcomes. Specific details will be available later.

Weekly quizzes
Written assignments
Oral presentations
Participation
Discussion forums
Groupwork
Take home tests/exams
Timed tests/exams
Proctored tests/exams
Medical Biophysics
MEDBIO 4535A—Hemodynamics

This course overview has been created to communicate expectations for 2020/2021 courses offered by the basic medical science departments to help you plan your semesters. This is a draft and final details will be reflected in the syllabus closer to the start date of the course. Refer to previous course syllabi for learning outcomes.

Instructor: D. Goldman  
Email: dgoldma2@uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone

Delivery mode:
This course will be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded). Students could be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

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</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>W</td>
<td>3:30-4:20pm</td>
<td>weekly</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>1 hour</td>
<td>weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Virtual synchronous sessions will be recorded for later viewing

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.

- Weekly quizzes
- Participation
- Take home tests/exams
- Written assignments
- Discussion forums
- Timed tests/exams
- Oral presentations
- Groupwork
- Proctored tests/exams
- Other:
- Other:
- Other:
Medical Biophysics
MEDBIO 4700B—Case Studies in Medical Biophysics

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Instructor: Dr. John McGuire
Email: John.McGuire@schulich.uwo.ca

Course description
The official course description can be found in the Academic Calendar. Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:
- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam

Delivery mode:
This course will be delivered completely online. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded; interactive; forum/group chat) modes. Students will be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency**</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous*</td>
<td>T/Th</td>
<td>Tuesdays: 9:30 am-10:30 am, Thursdays: 9:30 am – 11:30 am</td>
<td>weekly</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>1 hour</td>
<td>weekly</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Instructors, and Teaching Assistants may record Virtual synchronous sessions for later viewing either in whole or in part.
**A schedule will be posted with the final version of the course syllabus.

Assessments:
Examples of assessments that could be assigned in this course are highlighted in yellow; these examples are based on previous offerings of the course and the learning outcomes that have been set.
- Weekly quizzes
- Participation
- Take home tests/exams
- Written assignments
- Discussion forums
- Timed tests/exams
- Oral presentations
- Groupwork
- Proctored tests/exams
- Proctored tests/exams