Discipline **MCP5859**

*Imaging Methods in Cardiovascular Scientific Research*

**Subject Area:** 5131

**Created:** 27/05/2014

**Active since:** 27/05/2014

**Number of credits:** 2

<table>
<thead>
<tr>
<th>Theoretical (per week)</th>
<th>Practical (per week)</th>
<th>Self-study (per week)</th>
<th>Duration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
<td>12</td>
<td>1 week</td>
<td>30 hours</td>
</tr>
</tbody>
</table>

**Faculty Members Responsible:**

Roberto Kalil Filho

Carlos Eduardo Rochitte

Pedro Alves Lemos Neto

**Objectives:**

- To contribute to the training of researchers in the field of the use of imaging methods for the study of cardiovascular diseases;
- To understand the concepts and applications of the main research methods in the area: Magnetic Resonance Imaging, Spectroscopy, Coronary Computed Tomography Angiography (CCTA), cardiac PET, perfusion scintigraphy, endovascular image (OCT, ultrasonography), coronary flow;
- To understand, discuss, analyze and elaborate potential applications and investigations involving new resources and imaging methods for the study of cardiovascular diseases.

**Background:**

In the last decades, imaging methods have revolutionized diagnostic research and treatment in all areas of medicine. In the field of cardiovascular diseases, this development took place in a more remarkable way, with the participation of the imaging methodology in most of the outcomes of the main clinical studies, which has been tracing the modern guidelines for the treatment of these diseases. The rapid evolution of imaging techniques and their increasing application in scientific research has generated an important demand for researchers qualified to generate new knowledge, methods, devices (including patents) and applications, from the information obtained by the imaging methods used in the study of cardiovascular diseases. There is a lack of training courses for this type of researcher.

**Content:**

Theoretical lessons covering:

- Selection and interpretation of variables and outcomes in studies involving Nuclear Magnetic Resonance (NMR)
- Selection and interpretation of variables and outcomes in studies involving Coronary Computed Tomography Angiography (CCTA)
- Selection and interpretation of variables and outcomes in studies involving...
spectroscopy - Selection and interpretation of variables and outcomes in studies involving endovascular imaging (OCT, ultrasonography, coronary blood flow) - Selection and interpretation of variables and outcomes in studies involving cardiac PET - Selection and interpretation of variables and outcomes in studies involving perfusion scintigraphy - New technologies and new methods in the study of atherothrombogenesis.

Assessment Method

Attendance, performance and participation during lessons and discussions (faculty members responsible encourage participation and attend all classes) – Written exam

Observation:

Bibliography:


