<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>Tuesday, January 12, 2016</td>
<td>3:00pm-4:00pm</td>
<td>Planning Meeting</td>
<td>1866 East Hall</td>
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<td>Tuesday, January 19, 2016</td>
<td>3:00pm-4:00pm</td>
<td>What is Hodge Decomposition</td>
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Student Geometry/Topology  
Tuesday, January 12, 2016, 3:00pm-4:00pm  
1866 East Hall  
()  
*Planning Meeting*

Student Geometry/Topology  
Tuesday, January 19, 2016, 3:00pm-4:00pm  
1866 East Hall  
John Kilgore (UM)  
*What is Hodge Decomposition*

Student Geometry/Topology  
Tuesday, January 26, 2016, 3:00pm-4:00pm  
1866 East Hall  
Takumi Murayama (UM)  
*The Lefschetz theorem on (1,1)-classes and the Hodge conjecture*  
Let $X$ be a complex projective manifold. By the so-called "Poincare duality" theorem, every cohomology class corresponds to a homology class of complementary dimension, and so is is natural to ask: do all cohomology classes arise as the "Poincare dual" of an analytic submanifold of $X$? The Hodge conjecture states that, properly formulated, the answer is yes.  
We will show the Lefschetz theorem on (1,1)-classes as an application of the Hodge decomposition theorem, and discuss its relationship to the Hodge conjecture. This is the second seminar talk in a series on Hodge theory in the Student Geometry/Topology seminar, but relevant material from the first talk will be restated.

Student Geometry/Topology  
Tuesday, February 09, 2016, 3:00pm-4:00pm  
1866 East Hall  
John Kilgore (UM)  
*The Hodge Decomposition and the Index Theorem*  
I will give the ideas of the proof of the Hodge decomposition and explain how it relates to the Index theorem.