Syllabus for Graduate seminar in Geometry and Representation theory.

Instructor’s info:
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Course info:
Academic term: Fall 2017.
Credit Hours: 4.
Course schedule: TBA.
Course location: TBA.
Course description: In this course students get introduced to topics of fundamental importance for Geometry and Representation theory by reading foundational papers in these subjects, making presentations and participating in discussions.
Course prerequisites: Permission of instructor.
Required textbooks: None.
Other required resources: None.
Recommended notes, textbooks, papers:
Course objectives: To introduce students to important topics of active current interest in Geometry and Representation theory. To develop and improve communication skills of participating students.
Learning outcomes: Students participating in the course will master fundamentally important concepts of Geometry and Representation theory and will learn how to make presentations well.
Course format: The course runs as a student seminar. Students make presentations, participate in discussions and solve exercises.
Course calendar:
1) Week of Sept 6-8: Structure of universal enveloping algebra.
2) Week of Sept 11-15: BGG category O.
10) Week of Nov 6-Nov 10: Hodge theory for Soergel bimodules, I.
11) Week of Nov 13-Nov 17: Hodge theory for Soergel bimodules, II.
12) Week of Nov 20-Nov 21: Hodge theory for Soergel bimodules, III.
14) Week of Dec 5-Dec 9: Diagrammatic Soergel bimodules.

*Final exam:* none.

*Evaluation and grading:*
Making a presentation: 80%. For students who do not make a presentation this is substituted by submitting homework.

Seminar participation: 20%.

*Grading scale:* A \(\geq 90\%\), A- \(\geq 87\%\), B+ \(\geq 85\%\), B \(\geq 75\%\), B- \(\geq 72\%\), C+ \(\geq 70\%\), C \(\geq 60\%\), C- \(\geq 55\%\), D+ \(\geq 50\%\), D \(\geq 45\%\), D- \(\geq 40\%\).