

MAT325 ALGEBRAIC STRUCTURES

SYLLABUS SPRING 2017

Jean-Louis Loday, Bruno Vallette: Algebraic operads, Springer
GMW 346, 2012

- Chapter 1, Algebras, coalgebra, homology:
 - Section 1.1, 1.2, 1.3, 1.4.
 - Section 1.5 without Subsections 1.5.6 and 1.5.8.
- Chapter 2.1-2.3, Twisting morphisms
- Chapter 3, Koszul duality for associative algebras
 - 3.1-3.5
 - 3.6.1, 3.6.2 (without proof of Lemma 3.6.1), 3.6.3
 - Teorem 3.6.4 og Korollar 3.6.5.
 - Proposition 3.6.7.
- Chapter 5, Algebraic operad
 - 5.1 without 5.1.13, 5.1.14, and 5.1.15.
 - 5.2 without 5.2.9 and 5.2.12.
 - 5.3
 - 5.5, 5.6
 - 5.8.1-5.8.3, 5.8.6 side 170.
 - 5.9.1-5.9.5.
- Chapter 6, Operadic homological algebra
 - 6.2.1
- Chapter 7.1,7.2,7.6, Koszul duality for operads, but not 7.6.5.
- Chapter 13, Examples of algebraic operads
 - 13.1.1-13.1.5, Commutative algebras and the operad *Com*, but not proof of Prop.13.1.2.
 - 13.2.1-13.2.6, Lie algebras and the operad *Lie*
 - 13.3.1, 13.3.4-13.3.5, Poisson algebras, and their operad
 - 13.4.1-13.4.4,13.4.6, Pre-Lie algebras and Perm-algebras
 - 13.5.1-13.5.2, Leibniz algebras and Zinbiel algebras
 - 13.6.1-13.6.8,13.6.11-12 Dendriform algebras and diassociative algebras
 - 13.8.1-13.8.4, Magmatic algebras
- Appendix A, Action of groups
- Appendix B, Categories
 - B.1, B.2, B.3, B.4
- Appendix C, Trees
 - C.1

1/5-17, Gunnar Fløystad