Instructor

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Topics

- *Calendar description:* Basic definitions and examples: subrepresentations and irreducible representations, tensor products of representations. Character theory. Representations as modules over the group ring, Artin–Wedderburn structure theorem for semisimple rings. Induced representations, Frobenius reciprocity, Mackey's irreducibility criterion.

- We will cover the above topics (not necessarily in that order) and additional ones as time permits. Applications to other areas of math, such as number theory and arithmetic geometry, will be discussed.

References

The basic course material is standard and for the most part can be found in most graduate algebra texts (e.g. Dummit and Foote, Knapp, Lang, . . .). That said, here are two highly recommend (but not required) textbooks on the representation theory of finite groups:

- James and Liebeck, *Representations and Characters of Groups*, Cambridge University Press, 2001.

- Serre, *Linear Representations of Finite Groups*, Springer, 1977. Digital copy available for free through the UW library (login required).

Assessment

- 7 Assignments (best 5 counted) - 25%

- 2 Tests (in-class) - 25%

- Final Exam - 50%

The above scheme is *tentative* and will be finalized before the first class in January.