

| Order | Topic | Presenter | Additional Information |
|-------|--|-----------|--|
| 1 | Introduction | Mark | Introduce topic, team members. Review Dirichlet's and Thomae's function as motivation. What problems do these functions have with integration? |
| 2 | Sets of Measure Zero | Esra | Give definition and explain. |
| 3 | α -Continuity | Esra | Give definition and explain. |
| 4 | Lebesgue's Criterion for Riemann Integrability | Mark | State theorem, explain difference from Riemann integration. |
| 5 | Prove Lebesgue's Criterion | Mark | Very brief overview of proof that uses definition of Measure Zero and α -Continuity. |
| 6 | Nonintegrable Differentiable Function | Vishnu | Discuss example presented in book. Discuss creation of the function from the Cantor set and highlighting why the function fails to be Riemann Integrable under Lebesgue's Criterion. |
| 7 | Revisit Dirichlet's Function | Mark | Is it Riemann Integrable under the new criterion discussed? Why or why not? |
| 8 | Lebesgue's integration | Esra | Brief discussion on how Lebesgue Integrals help extend the use of integrals to more difficult functions. |
| 9 | Conclusion | All | |