

Program

1. Generalities about string theory (1c)
 - a. Why string theory? Problems in quantizing gravity
 - b. Basics of string theory
 - c. Worldsheet action
2. Open and Closed bosonic string (2.5c)
 - a. Quantization and spectrum (1.5c)
 - b. First look at D-branes (0.5c)
 - c. Massless spectrum and low energy physics (0.5c)
3. Superstring (3.5c)
 - a. Fermions on the world-sheet (0.5c)
 - b. Type II strings (1c)
 - c. Heterotic string (0.5c)
 - d. Massless spectrum and low energy physics (0.5c)
 - e. Second look at D-branes (0.5c)
 - f. Strings at strong coupling and dualities (0.5c)

Bibliography

- Katrin Becker, Melanie Becker and John H. Schwarz (2007) "String Theory and M-Theory: A Modern Introduction". Cambridge University Press.

Other useful references

- Luis Ibañez and Angel Uranga (2012), "String theory and particle Physics", Cambridge University Press
- David Tong, "String Theory", available at <http://www.damtp.cam.ac.uk/user/tong/string/string.pdf>
- Michael Green, John H. Schwarz and Edward Witten (1987) "Superstring theory", Cambridge University Press.
- Joseph Polchinski (1998) "String Theory". Cambridge University Press
- Clifford Johnson (2003). "D-branes". Cambridge: Cambridge University Press.
- Elias Kiritsis, (2007) "String Theory in a Nutshell". Princeton University Press.