

Contents

Preface and Acknowledgments	viii
Introduction	xi
Part I	1
1. Elliptic genera and elliptic cohomology CORBETT REDDEN	3
2. Elliptic curves and modular forms CARL MAUTNER	17
3. The moduli stack of elliptic curves ANDRÉ G. HENRIQUES	25
4. The Landweber exact functor theorem HENNING HOHNHOLD	35
5. Sheaves in homotopy theory CHRISTOPHER L. DOUGLAS	47
6. Bousfield localization and the Hasse square TILMAN BAUER	79
7. The local structure of the moduli stack of formal groups JACOB LURIE	89
8. Goerss–Hopkins obstruction theory VIGLEIK ANGELTVEIT	93
9. From spectra to stacks AFTER MICHAEL J. HOPKINS	99
10. The string orientation AFTER MICHAEL J. HOPKINS	109
11. The sheaf of E_∞ -ring spectra AFTER MICHAEL J. HOPKINS	125
12. The construction of tmf MARK BEHRENS	131
13. The homotopy groups of tmf and of its localizations ANDRÉ G. HENRIQUES	189

Part II	207
Elliptic curves and stable homotopy I MICHAEL J. HOPKINS and HAYNES R. MILLER	209
From elliptic curves to homotopy theory MICHAEL J. HOPKINS and MARK MAHOWALD	261
$K(1)$ -local E_∞ -ring spectra MICHAEL J. HOPKINS	287
Glossary	303