

# Mathematics, Module I: Analysis in the Euclidean space

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## Syllabus

Topics	References
Derivatives, differentials and tangent spaces	SB: 14.1, 14.2, 14.4
Directional derivatives and gradients	SB: 14.5, 14.6
Jacobians, higher-order derivatives and Hessians	SB: 14.7, 14.8
Taylor polynomials	SB: 30.2, 30.3
Implicit Function Theorem	SB: 15.1, 15.2, 15.3
Convexity, concavity, quasiconvexity and quasiconcavity	SB: 3.2, 21.1, 21.2, 21.3; MWG: M.C

## References

- (SB) C.P. Simon and L. Blume, *Mathematics for Economists*, W.W. Norton & Company, 1994.
- (MWG) A. Mas-Colell, M.D. Whinston and J.R. Green, *Microeconomic Theory*, Oxford University Press, 1995.