

**110學年度第二學期博士學位候選人資格考試  
參考書籍與考試大綱**

考試科目	參考書籍與考試大綱
有限元素法	<p><b>參考書籍：</b></p> <p>Cook, R. D., Malkus, D. S., Plesha, M. E. and Witt, R. J., Concepts and Applications of Finite Element Analysis, Fourth Edition, John Wiley &amp; Sons Inc., 2002.</p> <p>Rao, S. S., The Finite Element Method in Engineering, Fourth Edition, Elsevier, 2005.</p> <p>Reddy, J. N., An Introduction to the Finite Element Method, Third Edition, McGraw-Hill, Inc., 2005.</p> <p><b>考試大綱：</b></p> <p>Basic Elements and Computational Procedures            Variational and Rayleigh-Ritz Methods            Weighted Residual and Galerkin Methods            Isoparametric Elements and Solids of Revolution</p>
結構動力學	<p><b>Reference:</b></p> <p><i>Dynamics of Structures:            Theory and Applications to Earthquake Engineering</i>            Anil K. Chopra, Prentice-Hall, Inc.</p> <p><b>Outlines:</b></p> <ol style="list-style-type: none"> <li>1.Vibration of Single-Degree-of-Freedom Systems</li> <li>2.Numerical Methods of Dynamic Response</li> <li>3.Vibration of Multi-Degree-of-Freedom Systems</li> <li>4.Modal Analysis</li> <li>5.Design Spectra and Response Spectrum Analysis</li> <li>6.Vibration of Distributed Mass and Elasticity Systems</li> </ol>
鋪面分析	<p><b>Reference:</b></p> <p>Huang, Y. H., Pavement Analysis and Design, 2nd Edition, Prentice-Hall, Inc., 2004</p> <p><b>Outlines:</b></p> <p>CHAPTER 2 Stresses and Strains in flexible Pavements            CHAPTER 4 Stresses and Deflections in Rigid Pavements            CHAPTER 6 Traffic Loading and Volume            CHAPTER 7 Material Characterization            CHAPTER 9 Pavement Performance</p>

材料變形機制

考試範圍：

1. Steel Material
2. Elastic Responses of Materials
3. Inelastic Responses of Materials
4. Microstructure of Materials
5. Defects in Microstructure
6. Dislocation
7. Single-crystalline and Polycrystalline Materials

參考書籍：

- 1.D. Hull and D. J. Bacon. *Introduction to dislocations, 5th Edition*, Elsevier, Oxford, UK, 2011.
- 2.P.M. Anderson, J.P. Hirth, J. Lothe, *Theory of dislocations*, Cambridge University Press, New York, NY, USA, 2017.
- 3.H.K.D.H. Bhadeshia and R. Honeycombe, *Steels Microstructure and Properties*, 3rd Edition, Elsevier, Oxford, UK, 2006.
- 4.D. Francois, A. Pineau, A. Zaoui, *Mechanical Behaviour of Materials Vol. 1 & 2*, Springer, New York, NY, USA, 2012.