



## **PATHFINDER:**

### **GEOTECHNICAL ENGINEERING**

#### **Scope Note**

Geotechnical engineering is a branch of civil engineering concerned with the behavior of earth materials and the application of soil and rock mechanics. It involves the analysis, design, and construction of foundations, slopes, retaining structures, embankments, tunnels, levees, and other systems made from or supported by soil or rock. The field plays a crucial role in assessing ground conditions and determining the suitability of sites for various engineering projects.

Key Term	:	Geotechnical Engineering
USE	:	Soil Mechanics Foundation Engineering
USE FOR	:	Geotechnics Geoengineering
Broader Term	:	Civil Engineering Environmental Engineering Construction Engineering

#### **PRINT RESOURCES (c. 2011-2023)**

#### **BOOKS**

Coduto, D. P. (2011). *Geotechnical engineering: principles and practices*. (2nd ed.).  
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Das, Braja M. (2014). *Principles of geotechnical engineering*. (8th ed.). Cengage Learning.

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Desai, C. S. (2014). *Advanced geotechnical engineering: soil-structure interaction using computer and material models*. CRC Press/Taylor & Francis.

**[624.15136 D45]**

*Geotechnics and heritage*. (2013). CRC Press/Balkema

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Kramer, S. L. (2014). *Geotechnical earthquake engineering*. Pearson Education Limited.

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Nelson, J. D. (2015). *Foundation engineering for expansive soils*. John Wiley and Sons, Inc.

**[624.151 N33]**

Nicholson, P. (2015). *Soil improvement & ground modification methods*. Butterworth  
Heinemann.

**[624.151363 N52]**

Powrie, W. (2014). *Soil mechanics : concepts and applications*. (3rd ed.). CRC Press/Taylor &  
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Francis Group.

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## **THESIS**

Bulandres, J. A. A.; Real, J. M. M.; & Romero, M. L. G. (2007). *Site Selection for a Material  
Recovery Facility and Composting Facility in University of San Carlos - Talamban  
Campus*. University of San Carlos.

## ELECTRONIC RESOURCES (c. 2011-2024)

### **EBOOKS**

Arnold, P., & IOS Press. (2013). *Modern geotechnical design codes of practice: Implementation, application and development*. IOS Press. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=529564&site=ehost-live>

Bandara, N. & Gunaratne, M. (2018). *Geotechnical aspects of pavement engineering*. Momentum Press. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1717698&site=ehost-live>

Briaud, J. L. (2013). *Geotechnical engineering: Unsaturated and saturated soils*. John Wiley & Sons, Inc. DOI:10.1002/9781118686195.

Brinkgreve, R. B., Breedevelde, J., & Barends, F. B. J. (2011). *Geotechnical engineering: Proceedings of the 21st European young geotechnical engineers' conference rotterdam 2011*. IOS Press. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=395268&site=ehost-live>

Kurian, N. (2013). *Introduction to modern techniques in geotechnical and foundation engineering, An*. Alpha Science International Limited. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1805050&site=ehost-live>

Mahdi O. Karkush. (2020). *Geotechnical engineering development*. Trans Tech Publications Ltd. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2527957&site=ehost-live>

Ming, C. Y., Wong, H., Chin, L., & Lau, C.K. (2016). *Stability of geotechnical structures*. Bentham Science Publishers Ltd. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1511880&site=ehost-live>

Schweckendiek, T., & IOS Press. (2015). *Geotechnical safety and risk V*. IOS Press. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1640416&site=ehost-live>

Verbrugge, J. C. & Schroeder, C. (2018). *Geotechnical correlations for soils and rocks*. ISTE Ltd. DOI:10.1002/9781119482819

## **JOURNALS**

- Belokas, G. (2019). Probabilistic geotechnical engineering analysis based on first order reliability method. *Fracture and Structural Integrity / Frattura Ed Integrità Strutturale*, 50, 354–369. <https://doi-org.usclibrary.idm.oclc.org/10.3221/IGF-ESIS.50.30>
- Jun Li. (2019). Scanning electron microscopy testing technology in geotechnical engineering. *Acta Microscopica*, 28(3), 577–585. <https://ezproxy.usc.edu.ph/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=138305402&site=ehost-live>
- Lai, J., Mao, S., Qiu, J., Fan, H., Zhang, Q., Hu, Z., & Chen, J. (2016). Investigation progresses and applications of fractional derivative model in geotechnical engineering. *Mathematical Problems in Engineering*, 1–15. <https://doi-org.usclibrary.idm.oclc.org/10.1155/2016/9183296>
- Moayed, H., Mosallanezhad, M., Rashid, A. S. A., Jusoh, W. A. W., & Muazu, M. A. (2020). A systematic review and meta-analysis of artificial neural network application in geotechnical engineering: theory and applications. *Neural Computing & Applications*, 32(2), 495–518. <https://doi-org.usclibrary.idm.oclc.org/10.1007/s00521-019-04109-9>
- Nazri, F., Tan, C., & Ramli, M. (2016). Investigation of site-specific shear wave velocity for geotechnical engineering applications using microtremor array measurement. *Soil Mechanics & Foundation Engineering*, 53(5), 332–335. <https://doi-org.usclibrary.idm.oclc.org/10.1007/s11204-016-9407-3>

## **DISSERTATIONS & THESES**

- Han, X. (2022). *Applications of innovative building material and computer vision methods in geotechnical engineering* (Order No. 30243034). Available from ProQuest One Academic. (2777417904). <http://ezproxy.usc.edu.ph/login?url=https://www.proquest.com/dissertations-theses/applications-innovative-building-material/docview/2777417904/se-2>
- Jarushi, F. H. M. (2013). *Evaluating geotechnical engineering properties associated with high pile rebound* (Order No. 3569396). Available from ProQuest One Academic. (1357147899). <http://ezproxy.usc.edu.ph/login?url=https://www.proquest.com/dissertations-theses/evaluating-geotechnical-engineering-properties/docview/1357147899/se-2>
- Lamprinakos, R. (2019). *Evaluation of the geotechnical engineering properties of soil-biochar mixtures* (Order No. 13863319). Available from ProQuest One Academic. (2287044620). <http://ezproxy.usc.edu.ph/login?url=https://www.proquest.com/dissertations-theses/evaluation-geotechnical-engineering-properties/docview/2287044620/se-2>

Skelton, E. H. (2022). *Improving engineering design and structural performance through the effective characterization of high-performance materials in geotechnical transportation engineering* (Order No. 29324491). Available from ProQuest One Academic. (2769650925). <http://ezproxy.usc.edu.ph/login?url=https://www.proquest.com/dissertations-theses/improving-engineering-design-structural/docview/2769650925/se-2>

Zand, A. G. (2011). *Enabling geotechnical data for broader use by the spatial data infrastructures* (Order No. 3478046). Available from ProQuest One Academic. (901919108). <http://ezproxy.usc.edu.ph/login?url=https://www.proquest.com/dissertations-theses/enabling-geotechnical-data-broader-use-spatial/docview/901919108/se-2>

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