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# **LIBRARY PATHFINDER**

## **Soil Mechanics**

### **DEFINITIONS**

#### ***Soil Mechanics***

- The application of the laws of solid and fluid mechanics to soil and similar granular materials as a basis for design construction, and maintenance of stable foundations and earth structures. (***Mc Graw-Hill Dictionary of Engineering, Sybil P. Parker, ed. New York : Mc Graw-Hill, 1986, Eng'g/Ref 621.003 M35, Reference-Information Section, University Library***)
- The investigation of the composition of soils, their classification and strength, the flow of water through them and the active and passive earth pressures in them. (***Scott, John S. The VNR Dictionary of Civil Engineering, 4<sup>th</sup> ed. New York : VNR, 1993, Eng'g/Ref624.03 Sc425 1993, Reference-Information Section, University Library***)
- It is a discipline that applies principles of engineering mechanics, e.g. kinematics, dynamics, fluid mechanics, and mechanics of material, to predict the mechanical behavior of soils. Together with Rock mechanics, it is the basis for solving many engineering problems in civil engineering (geotechnical engineering), geophysical engineering and engineering geology. Some of the basic theories of soil mechanics are the basic description and classification soil, effective stress, shear strength, consolidation, lateral earth pressure, bearing capacity, slope stability, and permeability. Foundations, embankments, retaining walls, earthworks and underground openings are all designed in part with theories from soil mechanics. (***[http://en.wikipedia.org/wiki/Soil\\_mechanics](http://en.wikipedia.org/wiki/Soil_mechanics)***)

### **RELATED TERM**

- Geotechnical Engineering
- Soil stabilization

### **BOOKS**

Reference Section  
2nd Floor

Gregorich, E. G (2001) **Soil and environmental science dictionary.** 631.403 So683

Smolczyk, Ulrich (2003) **Geotechnical engineering handbook** 624.1513 G352

Circulation Section  
3rd Floor

Almeida, Marcio, ed. (2010) **New techniques on soft soils.** Eng'g/Cir 624.15136 N532

Bakker, Klaas Jan (2000) **Soil retaining structures : development of models for structural analysis** 624.171 B168

- Barnes, Graham (2000) **Soil mechanics : principles and practices** 624.15136 B261
- Bo, Myint Win (2003) **Soil improvement : prefabricated vertical drain techniques.** 624.151363 So683
- Budhu, Muni (2007) **Soil mechanics and foundations.** 2<sup>nd</sup> ed. 624.15136221 B683 2007
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- Das, Braja M. (2011) **Principles of soil dynamics.** 2<sup>nd</sup> ed. 624.15136 D229 2011
- Das, Braja M. (2008) **Advanced soil mechanics.** 624.15136 D229 2008
- Das, Braja M. (2004) **Civil engineering : geotechnical engineering review** 624.151076 D229
- Das, Braja M. (2000) **Fundamentals of geotechnical engineering** 624.15 D229F
- Day, Robert W. (2001) **Soil testing manual : procedures, classification data and sampling practices** 624.1514 D274
- Fredlund, D G (2012) **Unsaturated soil mechanics in engineering practice.** Eng'g/Cir 624.15136 F852
- Handy, R. L. (2007) **Geotechnical engineering : soil and foundation principles and practice.** 5<sup>th</sup> ed. 624.151 H236 2007
- Kastner, Richard, editor (2003) **Avoiding damage caused by soil-structure interaction : lessons learnt from case histories** 624.15136 Av961
- Knappett, J. A. (2012) **Craig's soil mechanics.** 8<sup>th</sup> ed. Eng'g/Cir 624.15136 K67 2012
- Liu, Cheng (2000) **Soil properties : testing measurement and evaluation** 4<sup>th</sup> ed. 624.151360287 L783 2000
- McCarthy, David F. (2002) **Essentials of soil mechanics and foundations : basic geotechnics** 6<sup>th</sup> ed. 624.15136 M116 2002
- Nagaraj, T. S. (2001) **Soft clay behaviour : analysis and assessment** 624.15136 N147
- Orense, Rolando P., ed. (2010) **Soil-foundation-structure interaction : selected papers from the International Workshop on Soil-Foundation-Structure Interaction (SFSI 09), Auckland, New Zealand, 26-27 November 2009.** Eng'g/Cir 624.1513 So683
- Orense, Rolando P. (2003) **Geotechnical hazards, nature, assessment and mitigation** 624.15136 Or66
- Sogge, Robert (2012) **Solutions for soil and structural systems using excel and VBA programs.** Eng'g/Cir 624.15136085554 So682
- Wesley, Laurence D. (2010) **Fundamentals of soil mechanics for sedimentary and residual soils.** 624.15136 W513
- Whitlow, Roy (2001) **Basic soil mechanics** 4<sup>th</sup> ed. 624.15136 W613 2001
- Wood, David Muir (2009) **Soil mechanics : a one-dimensional introduction.** 624.15136 M953

## THESIS

Graduate School Corner  
2nd Floor

David, Renato Salunga (2004) **Investigation of powdered eggshells as stabilizer for expansive soils rejected as subgrade material** by 624.151363 D249 Thesis 2004

## JOURNAL

Periodicals Section  
2nd Floor

**The next best thing** by C. Ray Civil Engineering p. 58-63 75(7) JI '05

**Coping with chemical processes in the soil with MOET** by S.Ma. Pablico Agriculture p. 56-59  
Ja '09

## E-JOURNALS

Accessible Thru HAU Library Webpage  
Proquest 5000

- Eurasian Soil Science
- International Journal of Soil Science
- Journal of Soil and Water Conservation
- Journal of Soil Science
- Moscow University Soil Science Bulletin
- Soil Science Society of America Journal
- Soil & Sediment Contamination
- Water, Air and Soil Pollution

## INTERNET RESOURCES

Internet and Multimedia Stations  
2<sup>nd</sup> and 3<sup>rd</sup> Floor

**Soil Compaction** by Bright Hub [Retrieved February 18, 2014 from <http://www.brighthub.com/engineering/civil/articles/119769.aspx>]

Bright Hub is an online community of experts and life-long enthusiasts who help brighthub.com visitors make better decisions, easily solve problems, and learn more about their interests with wide-ranging and highly informative articles, blogs and forums. It provides wide range of technical topics in engineering and IT.

**Soil Mechanics in Engineering Practice Lectures** by GSM Grand Solution Manual  
Retrieved February 18, 2014 from <http://www.aboutcivil.com/soil-mechanics.html>

This site provides civil engineering topics, including books, lecture notes and other links pertaining to soil mechanics.

**Soil Mechanics and Foundation Engineering Journal.** Retrieved February 18, 2014 from <http://www.springer.com/earth+sciences+and+geography/journal/11204>

It is one of the few international journals all over the world that provides engineers, scientific researchers, construction and design specialists with the latest achievements in soil and rock mechanics theory, experimental investigations, geotechnical and foundation engineering problems and innovative solutions, design and construction practice in regions with regular and extreme soil conditions.

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*Compiled by:*

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