



Colegio de San Juan de Letran
Dominican Avenue, Abucay, Bataan
Library and Media Services

RESEARCH GUIDE: ENGINEERING MECHANICS

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RESEARCH GUIDES

ENGINEERING MECHANICS

I. SCOPE NOTE

The branch of applied science which works with the laws and principle of mechanics.
mechanicalbooster.com

II. SEARCH AIDS (BT: Broader Term, RT: Related Term, NT: Narrow Term)

BT:

- Engineering Mechanics

RT:

- Statics
- Dynamics
- Deformation
- Mechanics (Physics)
- Equilibrium of force system
- Resultant of force system
- Center of gravity
- Moment of Inertia
- Work energy equation
- Impulse and momentum
- Mechanical vibrations
- Motion
- Force
- Particles and rigid bodies
- Couples
- Dynamic equilibrium
- Plane motion
- Work and energy

NT:

- Translational equilibrium
- Rotational equilibrium
- Kinematics
- Kinetics
- Equation of motion
- Dependent motion
- Rectilinear motion
- Concurrent force systems
- Cables
- Translation
- Rotation about a fixed axis

- General plane motion
- Motion about a fixed point
- General motion
- Friction
- Trusses
- Frames
- Centroid
- Rigid bodies

III. INFORMATION RESOURCES

A. LIBRARY RESOURCES

Note: For the appropriate access credentials, please contact the Letran Bataan Library

➤ E-JOURNALS

- International Journal of Mechanical Engineering Education.
https://www.proquest.com/central/publication/publications_48977
- Journal of Blacks in Higher Education (Online).
https://www.proquest.com/central/publication/publications_1056397
- Mechanics & Industry.
https://www.proquest.com/central/publication/publications_1586340
- Proceedings of the Institution of Civil Engineers: Engineering and Computational Mechanics. https://www.proquest.com/central/publication/publications_136229
- IOP Conference Series. Earth and Environmental Science.
https://www.proquest.com/central/publication/publications_4998669
- Journal of Physics: Conference Series.
https://www.proquest.com/central/publication/publications_4998668
- Mathematics in Computer Science.
https://www.proquest.com/central/publication/publications_2044127
- Applied Mechanics & Materials.
https://search.proquest.com/central/publication/publications_2029177
- Materials Science.
https://search.proquest.com/central/publication/publications_2034508
- International Journal of Mechanical Engineering.
https://search.proquest.com/central/publication/publications_48977
- Mechanical Engineering.
https://search.proquest.com/central/publication/publications_40505
- Nonlinear Dynamics.
https://search.proquest.com/central/publication/publications_2043746

➤ E-THESES

- Shryock, K. J. (2011). Alignment of faculty expectations and course preparation between first-year mathematics and physics courses and a statics and dynamics course (Order No.

- 3471371). Available from ProQuest Central. (888197924). Retrieved from <https://www.proquest.com/dissertations-theses/alignment-faculty-expectations-course-preparation/docview/888197924/se-2?accountid=190548>
- Ryneerson, A. M. (2016). From mechanic to designer: Evolving perceptions of elementary students over three years of engineering instruction (Order No. 10179099). Available from ProQuest Central. (1834494491). Retrieved from <https://www.proquest.com/dissertations-theses/mechanic-designer-evolving-perceptions-elementary/docview/1834494491/se-2?accountid=190548>
 - Qian, J. (2009). Discrete gradient method in solid mechanics (Order No. 3356269). Available from ProQuest Central. (304903758). Retrieved from <https://www.proquest.com/dissertations-theses/discrete-gradient-method-solid-mechanics/docview/304903758/se-2?accountid=190548>
 - Giffin, B. D. (2018). Partitioned polytopal finite-element methods for nonlinear solid mechanics (Order No. 10752138). Available from ProQuest Central. (2091485390). Retrieved from <https://www.proquest.com/dissertations-theses/partitioned-polytopal-finite-element-methods/docview/2091485390/se-2?accountid=190548>
 - Burgher, J. K. (2018). Development, characterization, and assessment of miniaturized chemical engineering education equipment, fluid mechanics, and thermochemical biomass conversion (Order No. 10825694). Available from ProQuest Central. (2124602145). Retrieved from <https://search.proquest.com/docview/2124602145?accountid=190548>
 - Grenn, M. W. (2013). A theory of information quality and a framework for its implementation in the requirements engineering process (Order No. 3600973). Available from ProQuest Central. (1466017027). Retrieved from <https://search.proquest.com/docview/1466017027?accountid=190548>
 - Grundman, L. A. (2017). Restructuring students' naïve theories of stress and strain using haptic feedback coupled simulations (Order No. 10270024). Available from ProQuest Central. (1933024255). Retrieved from <https://search.proquest.com/docview/1933024255?accountid=190548>
 - Motamedi, M. (2016). Numerical simulation of mechanical response of geomaterials from strain hardening to localized failure (Order No. 10295585). Available from ProQuest Central. (1845054045). Retrieved from <https://search.proquest.com/docview/1845054045?accountid=190548>
 - Korobenko, A. (2014). Advanced Fluid–Structure interaction techniques in application to horizontal and vertical axis wind turbines (Order No. 3670451). Available from ProQuest Central. (1650654964). Retrieved from <https://search.proquest.com/docview/1650654964?accountid=190548>

B. OPEN ACCESS

➤ FREE E-BOOKS

- Myer, Kutz. (2015). Mechanical engineers handbook: materials and engineering mechanics. New Jersey: John Wiley & Sons. <https://www.pdfdrive.com/mechanicalengineers-handbook-materials-and-engineering-mechanics-d43174606.html>

- Kreith, Frank and Goswami, Yogi. (2004). The CRC handbook of mechanical engineering. Boca Raton: CRC Press Taylor & Francis. <https://www.pdfdrive.com/the-crc-handbook-of-mechanical-engineering-second-edition-handbook-series-for-mechanical-engineering-d161761538.html>
- Eynard, Benoit. (2017). Advances on Mechanics, Design Engineering and Manufacturing. New York: Springer. <https://www.pdfdrive.com/advances-on-mechanics-design-engineering-and-manufacturing-proceedings-of-the-international-joint-conference-on-mechanics-design-engineering-advanced-manufacturing-jcm-2016-14-16-september-2016-catania-italy-d176018319.html>
- Pohanish, Richard P. (2016). A Reference Book for the Mechanical Engineer, Designer, Manufacturing Engineer, Draftsman, Toolmaker, And Machinist: Machinery's Handbook Pocket Companion. U.S.A: Industrial Press. <https://www.pdfdrive.com/machinery-handbook-pocket-companion-a-reference-book-for-the-mechanical-engineer-designer-manufacturing-engineer-draftsman-toolmaker-and-machinist-d158169915.html>
- Khurmi, R.S. (2012). A Textbook of Engineering Mechanics. New Delhi: S.Chand & Company Ltd. <https://www.pdfdrive.com/engineering-mechanics-d33673544.html>

➤ FREE E-JOURNALS

- Mechanical Engineering & Mechanics Open Access Journals. <https://www.springeropen.com/p/engineering/mechanical-engineering-journals>
- Advances in Mechanical Engineering (AIME). <https://journals.sagepub.com/home/ade>
- Mechanical Engineering-open-access-journals. <https://www.omicsonline.org/mechanical/mechanical-engineering-open-access-journals.php>
- The Open Mechanical Engineering Journal. <https://openmechanicalengineeringjournal.com/>
- Archives of Civil and Mechanical Engineering. <https://www.springer.com/journal/43452/open-access-publishing>
- Journal of Mechanical Engineering Research. <https://academicjournals.org/journal/JMER>
- International Journal of Mechanical Sciences. <https://www.journals.elsevier.com/international-journal-of-mechanical-sciences>
- Journals in Mechanical Engineering & Mechanics <https://www.springeropen.com/p/engineering/mechanical-engineering-journals>
- Journal of Engineering Mechanics. <https://ascelibrary.org/journal/jenmdt>
- Journal of Engineering Mechanics. <https://www.letpub.com/index.php?journalid=9514&page=journalapp&view=detail>

➤ FREE E-THESES

- Chase, J. G. (2015). Respiratory mechanics variation during partially supported ventilation. (Thesis). University of Canterbury. Retrieved from <http://hdl.handle.net/10092/13259>
- Jain, S. (. (2015). Model Order Reduction for Non-Linear Structural Dynamics. (Masters Thesis). Delft University of Technology. Retrieved from <http://resolver.tudelft.nl/uuid:cb1d7058-2cfa-439a-bb2f-22a6b0e5bb2a>

- Moyle, N. M. (2020). Contact Mechanics of Structured Elastomers Under Dry and Lubricated Conditions. (Doctoral Dissertation). Lehigh University. Retrieved from <https://preserve.lehigh.edu/etd/5780>
- Venkadachalam, A. (2014). Experimental & numerical study of dynamically loaded bolted & hybrid (bolted/bonded) joints. (Thesis). Michigan State University. Retrieved from <http://etd.lib.msu.edu/islandora/object/etd:2935>
- Bedi, A. (2014). A proposed framework for characterizing uncertainty and variability in rock mechanics and rock engineering. (Doctoral Dissertation). Imperial College London. Retrieved from <http://hdl.handle.net/10044/1/18998>
- Aresh, B. (2012). Fundamental Study into the Mechanics of Material Removal in Rock Cutting. (Doctoral Dissertation). Northumbria University. Retrieved from <http://nrl.northumbria.ac.uk/22076/>
- Jin, M. (2017). Determination of fracture mechanics behavior of polyethylene sheets. (Thesis). Linnaeus University. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-65706>
- Ip, N. (2017). Experimental Investigation of Polymer Adhesion Mechanics Using A Blister Contact Test. (Thesis). University of Pennsylvania. Retrieved from <https://repository.upenn.edu/edissertations/2351>
- Mokhtarzadeh, H. (2010). Supercavitating vehicle modeling and dynamics for control. (Master's Thesis). University of Minnesota. Retrieved from <http://purl.umn.edu/93263>

C. PROFESSIONAL ORGANIZATIONS

- American Society of Mechanical Engineers. <https://www.asme.org/>
- Institution of Mechanical Engineers. <http://www.imeche.org/>
- International Academic for Production Engineering. <http://www.cirp.net/>
- Society of Manufacturing Engineers. <https://www.sme.org/>

D. OTHER RELATED WEB PORTALS

- Trace Parts. <https://www.traceparts.com/en>
- Engineering Toolbox. <https://www.engineeringtoolbox.com/>
- Engineers Edge. <https://www.engineersedge.com/video/>
- Learn Mech. <https://learnmech.com/mechanical-engineering-projects/>
- How Stuff Works. <https://www.howstuffworks.com/>
- Engineering Links. <https://englinks.ca/>
- iMechanica. <https://imechanica.org/>
- Learn Mech. <https://learnmech.com/>
- Coursera. <https://www.coursera.org/learn/engineering-mechanics-statics>
- EDX. <https://www.edx.org/search?q=engineering+mechanics>
- Engineering Clicks. <https://www.engineeringclicks.com/>

E. RELATED RESEARCH GUIDES

- Penn State University Libraries. <https://guides.libraries.psu.edu/escmech>
- Lehigh University. https://libraryguides.lehigh.edu/mechanical_engineering/primary
- Clemson. <https://clemson.libguides.com/ME>

- Morgan Library Research Guide. <https://libguides.grace.edu/MechEng>
- Ryerson University. <https://learn.library.ryerson.ca/mechind>

IV. TUTORIALS

- Basics of engineering mechanics. <https://www.youtube.com/watch?v=ADR04oYgpAM>
- Introduction to Engineering Mechanics. <https://www.youtube.com/watch?v=-hMfpDY6WFk>
- 1. Engineering Mechanics | Force and Moment | Complete Concept. <https://www.youtube.com/watch?v=PYkqSROMxVs>
- Engineering Mechanics 1 – Introduction. <https://www.youtube.com/watch?v=6d1VrW5hd-E>
- Module-1 Lecture-1 Engineering Mechanics. <https://www.youtube.com/watch?v=LG0YzGeAFxk>
- Lesson 2 - Units In Mechanics (Engineering Mechanics Statics). <https://www.youtube.com/watch?v=vyUjInLpyu8>
- Refresher Set 16 Engineering Mechanics Part 1 (Tagalog). <https://www.youtube.com/watch?v=Z4n4VvjVx8E>
- Engineering Mechanics - Statics - Vol. 1 6 Hour Course. <https://www.mathtutordvd.com/public/Engineering-Mechanics-Statics-Volume-1.cfm>
- Engineering Mechanics Basics || Example Solved. <https://www.youtube.com/watch?v=rfgpFHFTvxg>
- Mechanics Introduction. <https://www.youtube.com/watch?v=SDJ9mZRueKE>
- WIS IQ. <https://www.wiziq.com/tutorials/engineering-mechanics>
- Engineers 4 Free. <https://www.engineer4free.com/>
- Tutorials Point. https://www.tutorialspoint.com/gate_syllabus/gate_mechanical_engineering_syllabus.htm

Prepared by:

Mr. Marvin A. Milla

Layout

mamilla@letranbataan.edu.ph

Ms. Maria Rosiel C. Ordenes

Subject Librarian

mrcordenes@letranbataan.edu.ph

Asst. Prof. Norady Mercado Pere

Chief Librarian

ndmercado@letranbataan.edu.ph

For more inquiries, kindly e-mail us at library@letranbataan.edu.ph