

[6/10/2021]



## CURRICULUM VITAE

**GEORGE EFREMIDIS**  
**(Georgios Th. Efraimidis)**  
Assistant Professor

Division of Geotechnical and Geoenvironmental Engineering

<https://geo.civ.uth.gr/index.php/en/>

Department of Civil Engineering

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### 1. Research interests

1. Rock mechanics, engineering geology.
2. Mechanical behavior of intact rocks and rock masses: a) constitutive laws, b) gradient elasticity and gradient plasticity theories, c) size effects, d) effects of the microstructure.
3. Geostatic stresses.
4. Underground constructions in intact rocks and rock masses, and rock slope stability.
5. Geohazards.

### 2. Education

1. Doctor of Philosophy (PhD), (18/7/2002), Aristotle University of Thessaloniki (AUT), Faculty of Engineering, Laboratory of Mechanics and Materials. Thesis: *On the theory of gradient elasto-plasticity and scale phenomena*.

2. Master of Science (MSc), (4/2/1997), Technical University of Crete (TUC), School of Mineral Resources Engineering, Laboratory of Rock Mechanics. Thesis: *Surface instability of brittle rocks*.
3. Degree in Geology, (18/10/1990), Aristotle University of Thessaloniki (AUT), Department of Geology.

### **3. Academic / Teaching experience**

1. University of Thessaly, School of Engineering, Department of Civil Engineering, Division of Geotechnical and Geoenvironmental Engineering.  
Country: Greece.  
Date: 10/4/2020 – present.  
Position: Assistant Professor (discipline: rock mechanics).
  - Teaching - Undergraduate courses: a) Geology for engineers, b) Engineering geology and rock mechanics, c) Deep foundations and retaining diaphragms.
  - Postgraduate program: Analysis and design of energy infrastructure constructions, Co-teaching (50%) - Graduate course: a) Engineering and Marine Geology – Geotechnical Engineering.
2. University of Thessaly, School of Engineering, Department of Civil Engineering, Division of Geotechnical and Geoenvironmental Engineering.  
Country: Greece.  
Date: 25/8/2016 – 9/4/2020.  
Position: Assistant Professor (with tenure), (discipline: rock mechanics).
  - Teaching - Undergraduate courses: a) Geology for engineers, b) Engineering geology and rock mechanics, c) Deep foundations and retaining diaphragms.
  - Postgraduate program: Analysis and design of energy infrastructure constructions, Co-teaching (50%) - Graduate course: a) Engineering and Marine Geology – Geotechnical Engineering.
3. University of Thessaly, School of Engineering, Department of Civil Engineering.  
Country: Greece.  
Date: 14/2/2013 – 24/8/2016.  
Position: Lecturer (with tenure), (discipline: rock mechanics).

- Teaching - Undergraduate courses: a) Geology for engineers, b) Engineering geology and rock mechanics, c) Computational geotechnical engineering (acad. years 2014-2015, 2015-2016), d) Deep foundations and retaining diaphragms.
- Postgraduate program: Analysis and design of energy infrastructure constructions, Co-teaching (50%) - Graduate course: a) Engineering and Marine Geology – Geotechnical Engineering.

4. University of Thessaly, School of Engineering, Department of Civil Engineering.  
Country: Greece.

Date: 1/3/2003 - 31/8/2012.

Position: Lecturer (under contract).

- Teaching - Undergraduate courses: a) Engineering geology of civil engineering works (acad. years 2010-2011, 2011-2012, 2012-2013), b) Rock mechanics (acad. years from 2002-2003, to 2012-2013), c) Tunnels and underground structures (acad. year 2012-2013).

5. Aristotle University of Thessaloniki (AUT), Faculty of Engineering, Laboratory of Mechanics and Materials.

Country: Greece.

Date: 1/1/1997 – 1/10/2005.

Position: Research – Postdoc associate.

- Duties: a) participation in the research activities of the laboratory of mechanics and materials, b) courses teaching, c) organizing committees of conferences / congresses, abstracts / proceedings editing, d) technical support of the laboratory computer room.

#### **4. Academic / Administrative experience**

1. Director of Geotechnical and Geo-Environmental Engineering of the Department of Civil Engineering of the University of Thessaly (1/9 /2021 - 1/9/2022).
2. Administrator of the website of the Department of Geotechnical and Geoenvironmental Engineering of the Department of Civil Engineering [<https://geo.civ.uth.gr/index.php/en/>], (academic years: 2017-2018 until today).
3. Committee on Extroversion, Research Development and Partnerships (academic years: 2018-19 until today).
4. Academic Advisors Committee (academic years: 2018-19 until today).

5. Practical Exercise Program: Professor responsible for the project (from 15/9/2021 until today).
6. Practical Exercise Program, a) Applications committee, b) Practical student advisor in the division of geotechnical and geoenvironmental engineering (academic years: 2017-18 until today).
7. Library committee of the University of Thessaly, Civil Engineering Department Representative (full member from academic year 2013-14 until 29/2/2020).
8. Committee on Building Facilities and Monitoring of New Building Construction of Civil Engineering Department (academic years: 2018-19 until 29/2/2020).
9. Committee on Placement Exams for Graduates (academic years: 2014-15 until 29/2/2020).
10. Committee on Study Program (academic years: 2014-15 until 2017-18).
11. Committee on Internal Evaluation (OMEA), Member of the Support Team (academic year 2017-18).
12. Candidate Evaluation Committees (for teaching), (academic years: 2013-14 until today).
13. Staff Evaluation Committee for Research Programs (academic year 2014-15).

## **5. Bilateral agreements ERASMUS+**

1. Bilateral agreement ERASMUS+ between Department of Civil Engineering of the University of Thessaly and the Department of Structural, Geotechnical and Building Engineering (<http://www.diseg.polito.it/en/>) of the Politecnico di Torino. Period of agreement: 2018-2022. Academic Coordinator: George Efremidis.
2. Bilateral agreement ERASMUS+ between Department of Civil Engineering of the University of Thessaly and the Department of Environment, Land and Infrastructure Engineering (<http://www.diati.polito.it/en/>) of the Politecnico di Torino. Period of agreement: 2018-2022. Academic Coordinator: George Efremidis.

## **6. Research programs**

1. University of Thessaly, Research Committee.  
Country: Greece.  
Year: 1/1/2019 - 31/12/2019.

Position: Scientific coordinator.

Small research project: "Application of geophysical survey methods and surface geochemistry, for the exploration of hydrocarbons, in onshore areas".

2. Ionian University, Research Committee.

Country: Greece.

Date: 6/5/2015 - 31/12/2015.

Position: Researcher.

Research project: "Improving Governance, Management and Sustainability - BIG" NSRF 2007-2013, Territorial Cooperation, Greece - Italy European Territorial Cooperation Program 2007-2013.

3. Aristotle University of Thessaloniki, Research Committee.

Country: Greece.

Date: [1/10/1997 – 31/1/1998], [1/7/1998 – 31/12/1999], [1/2/2001 – 30/10/2002], [1/10/2000 – 31/12/2000].

Position: Researcher / PhD student in scientific projects of European Union.

Research projects: a) "An application of gradient theory in the study of the mechanical behavior and strength of reactors in severe accidents", under the project of European Union, "REVISA: Reactor Vessel Integrity in Severe Accidents", and b) "An application of gradient theory in elasticity and its implementation in crack propagation", under the project of European Union, "LISSAC: Limit Strains for Severe Accidents Conditions".

4. Politecnico di Torino, Department of Structural and Geotechnical Engineering.

Country: Italy.

Date: 2/4/1999 - 2/11/1999.

Position: Researcher / PhD student in a scientific project of European Union.

Research project: "An application of analytical models of gradient elasticity in the evaluation of a) tensile strength in porous materials, b) compressive strength in disordered materials.", under the project of European Union, "TMR Project: Spatio-Temporal Instabilities in Deformation and Fracture.

## **7. Professional experience**

1. Decentralized Administration of Thessalia and Sterea Ellada, Direction of Environment and Spatial Planning, Department of Urban Planning, Larisa.

Country: Greece.

Date: 1/1/2011 - 14/2/2013.

Position: Engineering Geologist.

Job description: Control and supervision of geological and geotechnical studies under: a) urban planning studies, b) settlements transport studies etc.

2. Region of Thessalia, Direction of Environment and Physical Planning, Department of Urban Planning and Applications, Larisa.

Country: Greece.

Date: 26/7/2006 - 31/12/2010.

Position: Engineering Geologist.

Job description: Control and supervision of geological and geotechnical studies under: a) urban planning studies, b) settlements transport studies etc.

3. Prefecture of Ioannina, Department of Protection and Management of Environment, Ioannina.

Country: Greece.

Date: 24/9/2005 - 25/7/2006.

Position: Engineering Geologist.

Job description: Geotechnical studies, geological studies and environmental studies.

4. Geotechnologiki S.A., Thessaloniki.

Country: Greece.

Date: 1/11/2003 - 31/1/2004.

Position: Engineering Geologist.

Job description: Geotechnical research and investigation.

## 8. Scientific papers

### 8A. Journal papers

1. Sapora A., Efremidis G., and Cornetti P., "Non-local criteria for the borehole problem: Gradient Elasticity versus Finite Fracture Mechanics", *Meccanica*, doi: 10.1007/s11012-021-01376-6, (2021).
2. Efremidis G., Tsagrakis I., and Aifantis E.C., "An elastoplastic axisymmetric borehole problem using a deformation theory of gradient plasticity", *Geomechanics and*

- Geoengineering – An International Journal, doi: 10.1080/17486025.2020.1827160, (2020).
3. Chen H., Qi Ch., Efremidis G., Dorogov M., and Aifantis E. C., “*Gradient elasticity and size effect for the borehole problem*”, Acta Mechanica 229, pp. 3305-3318, doi: 10.1007/s00707-018-2109-3, (2018).
  4. Efremidis, G., Avlonitis, M., Konstantinidis, A. and Aifantis, E.C., “*A statistical study of precursor activity in earthquake-induced landslides*”, Computers and Geotechnics 81, pp. 137-142, doi: 10.1016/j.compgeo.2016.08.010, (2017).
  5. Avlonitis, M., Efremidis, G. and Konstantinidis, A., “*A statistical study of precursor activity in rain-induced landslides*”, Journal of the Mechanical Behavior of Materials, Vol.23, No. 3-4, pp. 79-86, doi: 10.1515/jmbm-2014-0009, (2014).
  6. Efremidis G., and Aifantis E.C., “*Application of a gradient elasticity model to interpret size effects in uniaxial loading*”, Journal of the Mechanical Behavior of Materials, Vol.19, No. 1, pp. 1-14, doi: 10.1515/JMBM.2009.19.1.1, (2009).
  7. Efremidis G., Pugno N., and Aifantis E.C., “*A proposition for a “Self-Consistent” gradient elasticity*”, Journal of the Mechanical Behavior of Materials, Vol.19, No. 1, pp. 15-30, doi: <https://doi.org/10.1515/JMBM.2009.19.1.15>, (2009).
  8. Efremidis G., and Aifantis E.C., “*The coefficient of geostatic stress: Classical elasticity vs. gradient elasticity*”, Journal of the Mechanical Behavior of Materials, Vol.18, No. 1, pp. 43-54, doi: 10.1515/JMBM.2007.18.1.43, (2007).
  9. Tsagrakis I., Efremidis G., Konstantinidis A., and Aifantis E.C., “*Deformation vs. flow and wavelet-based models of gradient plasticity: Examples of axial symmetry*”, International Journal of Plasticity 22, pp. 1456 – 1485, doi: 10.1016/j.ijplas.2005.07.009, (2006).
  10. Tsagrakis I., Efremidis G., and Aifantis E.C., “*Size effects in thick-walled hollow cylinders: Deformation versus flow theory of gradient plasticity*”, Journal of the Mechanical Behavior of Materials, Vol.15, No.3, pp. 149-168, doi: 10.1515/JMBM.2004.15.3.149, (2004).
  11. Efremidis G., Rambert G., and Aifantis E.C., “*Gradient elasticity and size effect for a pressurized thick hollow cylinder*”, Journal of the Mechanical Behavior of Materials, Vol.15, No.3, pp. 169-183, doi: 10.1515/JMBM.2004.15.3.169, (2004).
  12. Anagnostopoulos C., and Efremidis G., “*Size effect in compressive strength of grouted sand – Part I: Experiments*”, Journal of the Mechanical Behavior of Materials, Vol.15, No.3, pp. 203-210, doi: 10.1515/JMBM.2004.15.3.203, (2004).

13. Efremidis G., and Anagnostopoulos C., "Size effect in compressive strength of grouted sand – Part II: Modeling of experimental data", Journal of the Mechanical Behavior of Materials, Vol.15, No.3, pp. 211-218, doi: 10.1515/JMBM.2004.15.3.211, (2004).
14. Efremidis G., and Aifantis E.C., "Gradient elasticity and size effects in borehole breakouts: An application of Ru-Aifantis theorem", Journal of the Mechanical Behavior of Materials Vol.15, Nos. 4-5, pp. 279-289, doi: 10.1515/JMBM.2004.15.4-5.279, (2004).
15. Efremidis G., Carpinteri A., and Aifantis E.C., "Griffith's Theory Versus Gradient Elasticity in the Evaluation of Porous Materials Tensile Strength", Journal of the Mechanical Behavior of Materials, Vol.12, No.2, pp. 95-105, doi: 10.1515/JMBM.2001.12.2.95, (2001).
16. Efremidis G., Carpinteri A., and Aifantis E.C., "Multifractal Scaling Law Versus Gradient Elasticity in the Evaluation of Disordered Materials Compressive Strength", Journal of the Mechanical Behavior of Materials, Vol.12, No.2, pp. 107-120, doi: 10.1515/JMBM.2001.12.2.107, (2001).

## 8B. Conference papers

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1. Efremidis G., and Tsagrakis I., "A new gradient elasticity model for the elastic boreholes", ISRM International Symposium EUROCK 2021 – Mechanics and Rock Engineering, from Theory to Practice 20-25 September 2021, Turin, Italy, IOP Conference Series: Earth and Environmental Science, Volume 833, doi: 10.1088/1755-1315/833/1/012188, (2021).
2. Efremidis G., Tsagrakis I., and Aifantis E.C., "Underground circular openings in elastoplastic rocks: Strain gradient and size effects", ISRM International Symposium - EUROCK 2020, Trondheim, Norway, June 2020, Paper Number: ISRM-EUROCK-2020-205, Onepetro.org, ISBN: 978-82-8208-072-9, (2020).
3. Papailias G., and Efremidis G., "A non-seismic data interpretation of gas seepage in the Mesohellenic Basin in Greece", Near Surface Geoscience Conference 2020, 26<sup>th</sup> European meeting of environmental and engineering geophysics, 7-8 December, doi: 10.3997/2214-4609.202020124, (2020).



4. Efremidis G., Tsagrakis I., Aifantis E.C., “*A deformation model of gradient plasticity and size effects for a thick-walled plastic spherical shell*”, 12<sup>th</sup> HSTAM International Congress on Mechanics, Thessaloniki, Greece, (2019).
5. Efremidis G., Chen H., Tsagrakis I., Aifantis E.C., Qi Ch., “*Circular tunnel in a gradient elastoplastic rock mass*”, 14<sup>th</sup> ISRM International Congress on Rock Mechanics and Rock Engineering, (ID 14362), Iguassu Falls, Brazil, ISBN: 978-036742284-4 (2019).
6. Lamprakopoulos A., and Efremidis G., “*Parametric investigation of slope stability in a construction site of a rockfill dam*”, 3rd Panhellenic Conference of Dams and Reservoirs, Athens, (2017) (in Greek).
7. Avlonitis, M., Efremidis, G., Konstantinidis, A., and Aifantis, E.C., “*The sliding surface roughness effect on landslides: A statistical study*”, ISRM International Symposium - EUROCK 2016, Ürgüp, Turkey, August 2016, Paper Number: ISRM-EUROCK-2016-098, Onepetro.org, ISBN: 978-1-138-03265-1, (2016).
8. Efremidis, G., “*Deformation version of gradient plasticity and size effects in elastoplastic axisymmetric boreholes*”, In: Kongoli F, Bordas S, Estrin Y, editors. Sustainable Industrial Processing Summit SIPS 2015 Volume 1: Aifantis Intl. Symp. / Multiscale Material Mechanics. Volume 1. Montreal (Canada): FLOGEN Star Outreach. 2015. p. 229-240 (2015).
9. Marmarokopos, K., Efremidis, G. and Avlonitis, M., “*Geophone networks and environmental studies: Application to landslides*”, IISA 2015, The 6<sup>th</sup> International Conference on Information, Intelligence, Systems and Applications, Corfu, Greece (2015), doi: 10.1109/IISA.2015.7388033, (2015).
10. Efremidis, G., Avlonitis, M., Konstantinidis, A., and Aifantis, E.C., “*Realistic spring block models for earthquake-induced landslides*”, 13th ISRM International Congress of Rock Mechanics, Montreal, Canada, May 2015, Paper Number: ISRM-13CONGRESS-2015-188, Onepetro.org, ISBN: 978-1-926872-25-4, (2015).
11. Avlonitis, M., Konstantinidis, A. and Efremidis, G., “*Modeling precursor activity in rain-induced landslides by means of spring-block models*”, in: Proc. of World Landslide Forum 3, Beijing, China, (2014).
12. Efremidis G., and Aifantis E.C., “*Convergence - confinement curves in gradient elastic–perfectly plastic rock masses*”, in: Proc. of 10th HSTAM International Congress on Mechanics, Eds. D.E. Beskos, E. Stavroulakis, Chania, Crete, Greece, (2013).

13. Avlonitis, M., and Efremidis, G., "*Modeling and Simulation of Self-Organized Criticality in Landslides*", 2nd Chaotic Modeling and Simulation International Conference (CHAOS 2009), Chania, Crete, Greece, (2009).
14. Efremidis G., and Aifantis E.C., "*Gradient elasticity models for underground circular openings*", in: Proc. of the 8<sup>th</sup> HSTAM International Congress on Mechanics, Eds. N. Bazeos, D.L. Karabalis, D. Polyzos, D.E. Beskos, J.T. Katsikadelis, Vol II, pp. 615-622, Patras, (2007).
15. Efremidis G., and Aifantis E.C., "*An application of gradient elasticity in the coefficient of geostatic stress*", in: Proc. of the 7<sup>th</sup> National Congress on Mechanics, Eds. A. Kounadis, C. Providakis, G. Exadaktylos, Vol II, pp. 252-258, Chania, Crete (2004).
16. Efremidis G., Tsagrakis I., and Aifantis E.C., "*Gradient plasticity theory and size effects in deformation and failure of thick-walled tubes*", in: Proc. of the 6<sup>th</sup> National Congress on Mechanics, Eds. E.C. Aifantis et. al., Vol III, pp. 129-135, Thessaloniki (2001).
17. Efremidis G., Akintayo F., and Ning J., "*An application of gradient elasticity theory in chemical technology problems*", in: Proc. of the 2nd National Congress of Chemical Engineering, Eds. M. Assael et. al., pp. 937-940, Tziola publications, Thessaloniki, Greece (1999) (in Greek).
18. Efremidis G., Ning J., Exadaktylos G.E., and Aifantis E.C., "*Gradient elasticity and size effects*", in: Proc. of the 5<sup>th</sup> National Congress on Mechanics, Eds. P. Theocaris et. al., Vol. 2, pp. 915-922, Ioannina (1998).

### **8C. Conference papers, (without submitting full text)**

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1. Efremidis G., Tsagrakis I., Aifantis E.C., "*An elastic-plastic axisymmetric borehole problem by using a deformation version of gradient plasticity*", Shechtman-Suresh Convocation and Honorary Symposium, Aristotle University of Thessaloniki, 30/11-3/12, Thessaloniki, (2018).
2. Efremidis G., "*A special form of gradient elasticity and Rayleigh waves*", ICNAAM 2017, 15<sup>th</sup> International conference of numerical analysis and applied mathematics, Mini-Symposium "Chemomechanics of Novel Materials & Disclinated MicroCrystals / DMCs", Thessaloniki, September 25-30, (2017).

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3. Avlonitis M., Efremidis G., Konstantinidis A., "*Precursor activity in sliding interfaces*", EUROMAT 2017, European congress and exhibition on advanced materials and processes, Thessaloniki, September 17 – 22, (2017).

#### 8D. Posters in international conferences

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1. Tsagrakis I., Efremidis G., and E.C. Aifantis., "*On the comparison of deformation and flow theories of gradient plasticity applied to radial symmetry problems*", in: Book of Abstracts of the 5<sup>th</sup> European Solid Mechanics Conference – 5<sup>th</sup> ESMC, Ed. E.C. Aifantis, p. 350, Thessaloniki (2003).
2. Anagnostopoulos C., and Efremidis G., "*Experimental investigation on size effects in compressive strength of grouted sand*", in: Book of Abstracts of the 5<sup>th</sup> European Solid Mechanics Conference – 5<sup>th</sup> ESMC, Ed. E.C. Aifantis, pp. 371-372, Thessaloniki (2003).

#### 8E. Other publications

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1. Efremidis G., "*The elastoplastic borehole problem and size effects in view of a deformation version of gradient plasticity*", Advances in Civil Engineering Research, Eds. A. Liakopoulos, E. Mystakidis, A. Giannakopoulos, pp. 343-353, Volos, Greece, (2014).

#### 8F. Papers in preparation

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1. Chen H., Qi Ch., Efremidis G., Aifantis E. C., "*Internal variable gradient model for active earth pressure of rigid retaining wall moving with translation*", (in preparation)
2. Efremidis G., Tsagrakis I., "*Gradient theory of elasto-plasticity for in situ-stresses in isotropic rocks*", (in preparation).
3. Efremidis G., "*Stress-dependent Young modulus or gradient elasticity for boreholes?*", (in preparation).
4. Lazopoulos A. K., Efremidis G., "*Gradient full term models for free transverse vibrations of a double-walled carbon nanotube*", (in preparation).

5. Efremidis G. T., Kallioglou P. A., "*Engineering and marine geology - Geotechnical engineering: An engineering education approach at postgraduate level*", (in preparation).

## 9. Reviewer / Guest Editor

1. Acta Mechanica, ISSN: 0001-5970.
2. Computers & Geosciences, ISSN: 0098-3004.
3. Journal of Environmental Management, ISSN: 0301-4797.
4. Journal of the Mechanical Behavior of Materials, ISSN: 2191-0243.  
[Geomechanics, (Extended versions of papers presented at the 5<sup>th</sup> EUROMECH Solid Mechanics Conference, August 17-22, 2003, Thessaloniki, Greece), Vol. 16, Nos. 1-2, (2005). Guest editor: G. Efremidis].
5. Mathematics (MDPI), EISSN 2227-7390.
6. Tunnelling and Underground Space Technology, ISSN: 0886-7798.

## 10. Theses – Reports

1. Efremidis G., Ph.D. Thesis, "*On the theory of gradient elasto-plasticity and scale phenomena*", Aristotle University of Thessaloniki, Faculty of Engineering, General Department of Physics and Mathematics, Thessaloniki, Greece (2002), (in Greek).
2. Efremidis G., Teneketzis Tenek L., and Aifantis E.C., "*Analytical and computational models of gradient elasticity to the evaluation of materials response and strength*", Project LISSAC: 1<sup>st</sup> Yearly Report, LISSAC Project No. FIKS-CT1999-00012, Laboratory of Mechanics and Materials, Aristotle University of Thessaloniki, Thessaloniki, Greece (2/2001).
3. Efremidis G., M.Sc. Thesis, "*Surface instability of brittle rocks*", Technical University of Crete, School of Mineral Resources Engineering, Chania, Greece (1996), (in Greek).

## 11. Class notes

1. Efremidis G., "*Rock Mechanics: Course notes*", University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2019), (in Greek).

2. Efremidis G., "*Geology for Engineers*", Course slides (eclass) ([https://eclass.uth.gr/courses/CULT\\_U\\_135/](https://eclass.uth.gr/courses/CULT_U_135/)), University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2018), (in Greek).
3. Efremidis G., "*Engineering Geology and Rock Mechanics*", Course slides (eclass), ([https://eclass.uth.gr/courses/CULT\\_U\\_212/](https://eclass.uth.gr/courses/CULT_U_212/)), University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2019), (in Greek).
4. Efremidis G., "*Deep foundations and retaining diaphragms*", Course slides (eclass), ([https://eclass.uth.gr/courses/CULT\\_U\\_128/](https://eclass.uth.gr/courses/CULT_U_128/)), University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2018), (in Greek).
5. Efremidis G., "*Engineering Geology and Subsea Geology*", Postgraduate course slides (eclass), ([https://eclass.uth.gr/courses/CIV\\_P\\_109/](https://eclass.uth.gr/courses/CIV_P_109/)), University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2018), (in Greek).
6. Efremidis G., "*Computational geotechnical engineering*", Course slides (eclass), (<http://archive.eclass.uth.gr/eclass/courses/MHXC183/>), University of Thessaly, Faculty of Engineering, Department of Civil Engineering, Volos, Greece (2015), (in Greek).

## 12. Lectures

1. Efremidis, G.T. and Aifantis, E.C.: *Rock Mechanics and Gradient Theory: An Example of Ground Response Curves in Tunnel Design*, Nanomechanics & Nanomaterials, International Workshop, Laboratory of Mechanics and Materials Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (5-8/7/2013).
2. Efremidis G.: *Size effect phenomena in axisymmetric problems by using gradient elasticity*, Laboratory of Mechanics and Materials Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (4/10/2002).

## 13. Supervising diploma theses

1. Vasileiou A.-A., "*Experimental rock mechanics. Design of specimens and types of loading conditions*", Department of Civil Engineering, University of Thessaly (February 2020).

2. Vergoulis P., "*Geohazards and environmental impacts of submarine hydrocarbon mining. The case of the southeastern Mediterranean sea*", Department of Civil Engineering, University of Thessaly (January 2020).
3. Eleftheriou D., and Kiriazopoulos Ph., "*Parametric investigation of a landslide in Pelion area by using numerical methods*", Department of Civil Engineering, University of Thessaly (June 2019).
4. Kottis A.-K., and Patrikis K., "*Parametric investigation of the slope stability in a dam's spillway by using numerical methods*", Department of Civil Engineering, University of Thessaly (March 2019).
5. Tsapaki E., "*Geothermal in tunnels*", Department of Civil Engineering, University of Thessaly (March 2019).
6. Christofi G.-T., "*Tunnels stability in multilayered rock masses. Application of a numerical method for the study of the effect of joints and earthquakes*", Department of Civil Engineering, University of Thessaly (October 2018).
7. Mpantraleksi A., "*Applications of gravitational-magnetic geophysical methods and surface geochemistry method in exploration of hydrocarbons*", Department of Civil Engineering, University of Thessaly (July 2018).
8. Geramani E., and Pitsiougka E., "*Modeling of tunneling and stability analysis under the influence of stratigraphy using numerical methods of finite elements and finite differences*", Department of Civil Engineering, University of Thessaly (July 2018).
9. Kalogirou S., "*Parametric investigation of a landslide in a region of Pelion by using numerical methods in 2D*", Department of Civil Engineering, University of Thessaly (March 2018).
10. Vitori S., "*Analytical and numerical methods to describe breakouts on deep boreholes, with variable diameter*", Department of Civil Engineering, University of Thessaly (February 2018).
11. Spilioti, D., "*Geotechnical stability conditions of energy offshore infrastructures in Greek coastal area*", Department of Civil Engineering, University of Thessaly (June 2017).
12. Papagiannis A., "*Stability analysis of vertical horizontal and deviated deep boreholes using programming in FLAC*", Department of Civil Engineering, University of Thessaly (March 2017).

13. Mpeis A., "*Numerical simulation of an underground excavation and the role of the geostatic stresses ratio to its stability conditions*", Department of Civil Engineering, University of Thessaly (March 2017).
14. Kyriopoulos K., and Tsirimokos M., "*Parametric stability study of tunnel excavation implemented by the Attiko Metro S.A. by using numerical simulation methods*", Department of Civil Engineering, University of Thessaly (March 2016).
15. Samios D., "*Study of the special geological and geotechnical conditions in the Ilarionas dam using the program FLAC*", Department of Civil Engineering, University of Thessaly (March 2016).
16. Scoumi K., and Tsaroucha Z., "*Application of seismic methods using geophones to investigate the subsoil stratification in the area of Corfu island*", Department of Civil Engineering, University of Thessaly in collaboration with the Department of Informatics, Ionian University (March 2016).
17. Galazoula M., "*Landslides in Thessaly and numerical simulation methods*", Department of Civil Engineering, University of Thessaly (October 2015).
18. Lamprakopoulos A., "*Slope stability analysis in case studies by using geotechnical software*", Department of Civil Engineering, University of Thessaly (October 2014).
19. Kanos A., "*Experimental investigation of size effects in the mechanical behavior of concrete, and modeling of the experimental data*", Department of Civil Engineering, University of Thessaly (October 2004), [co-supervisor].

#### **14. Supervising master theses**

1. Douitsi E., and Kakias P., "*Use of geothermal energy in building infrastructure of Northern Greece*", Department of Civil Engineering, University of Thessaly (in progress).
2. Oumout S.H., "*Utilization of geothermal energy in Thrace*", Department of Civil Engineering, University of Thessaly (in progress).
3. Xanthos G., "*Analysis of the mechanical behavior of submarine pipelines due to morphological anomalies of the seabed*", Department of Civil Engineering, University of Thessaly (July 2021).
4. Arvanitopoulos N., "*Geothermal energy infrastructure systems and geothermal tunnels*", Department of Civil Engineering, University of Thessaly (February 2020).

5. Papamalama E.-Ch., “*Submarine landslides and offshore constructions of energy infrastructures*”, Department of Civil Engineering, University of Thessaly (June 2019).
6. Papailias G., “*Non-seismic methods for the exploration of hydrocarbons in terrestrial areas: The case of the basin in Grevena and Trikala Prefectures - Interpretation of geological, geophysical and geochemical data and design of energy infrastructures*”, Department of Civil Engineering, University of Thessaly (June 2018).
7. Karanasios Ch. and Chatzikyriakos Ch. – El., “*Mechanical behavior of a rockfill dam and its foundation under static and dynamic loading conditions with the finite element method*”, Department of Civil Engineering, University of Thessaly (June 2018).
8. Vasileiadis Th.-E., “*Parametric investigation and evaluation on the suitability of a gravity dam and its ground foundation suitability under static and dynamic conditions, using Abaqus*”, Department of Civil Engineering, University of Thessaly (June 2017).
9. Kaltsas I., “*Simulation, static and dynamic analysis of rock fill dam and background foundation with the Abaqus finite element program*”, Department of Civil Engineering, University of Thessaly (June 2017).

<b>15. Member of doctoral and master theses committees</b>
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#### **15A. Doctoral theses committees**

1. Liaskos I., “*Development of a methodological framework for investigating the technological, environmental and morphological conditions and parameters related to the search and siting of bunkers and cabinets in the corridor (Road - Railway) projects as well as in the large scale Technical Works*”, PhD Thesis, Department of Civil Engineering, University of Thessaly (in progress), [Member of the three-member advisory committee].
2. Alamanis N., “*Effect of spatial variability of soil properties in permanent seismic displacements of road slopes*”, PhD Thesis, Department of Civil Engineering, University of Thessaly (October 2017), [Member of the three-member advisory committee].
3. Zormpa T., “*Simplified three-dimensional method of piles under combined loading*”, PhD Thesis, Department of Civil Engineering, University of Thessaly (October 2017).
4. Papadolpoulou M., “*Automated methodology for seismic hazard microzonation studies with interoperable geographic information systems – A study on a hellenic*



city", PhD Thesis, Department of Civil Engineering, University of Thessaly (March 2017).

5. Stavrotheodorou E., "*Advanced elastoplastic simulation of staged construction and impoundment of tall concrete face rockfill dams*", PhD Thesis, Department of Civil Engineering, University of Thessaly (October 2015).
6. Athanasiou V., "*Assessment of mechanical properties of pressure sensitive materials through instrumented indentation*", PhD Thesis, Department of Civil Engineering, University of Thessaly (May 2014).

## 15B. Master theses committees

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1. Karasachinidi E., "Hydrodynamic pressures on concrete dams during seismic excitation", Master Thesis, Department of Civil Engineering, University of Thessaly (October 2019).
2. Giannakopoulou M. and Koutsouradi A., "*Three dimensional numerical simulation of a monopile offshore wind turbine based on a clayey soil*", Master Thesis, Department of Civil Engineering, University of Thessaly (March 2019).
3. Tagkas E., "*Principles of geotechnical design of wind turbines*", Master Thesis, Department of Civil Engineering, University of Thessaly (March 2019).
4. Kalyvas E., "*Numerical analysis of a geothermal installation in a tunnel during installation and functionality*", Master Thesis, Department of Civil Engineering, University of Thessaly (June 2018).
5. Kollatou A.-M., "*Dynamic analysis of an RCC Arch-Gravity Dam*", Master Thesis, Department of Civil Engineering, University of Thessaly (October 2017).
6. Voudouri A., "*The behavior of a steel-fiber concrete faced rockfill dam (CFRDs)*", Master Thesis, Department of Civil Engineering, University of Thessaly (June 2013).
7. Vrontzos I., "*The behavior of a concrete faced rockfill dam passing by an active tectonic fault*", Master Thesis, Department of Civil Engineering, University of Thessaly (June 2013).

<h2>16. Participation in conferences</h2>
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1. EUROCK 2021, *ISRM International Symposium, Mechanics and Rock Engineering from theory to practice*, Torino, Italy, (2021).

2. EUROCK 2020, *ISRM International Symposium, Hard Rock Engineering*, Trondheim, Norway, (2020).
3. Near Surface Geoscience Conference 2020, 7-8 December 2020.
4. 12th HSTAM International Congress on Mechanics, Thessaloniki, Greece, 22 – 25 September 2019.
5. 14th International Congress on Rock Mechanics and Rock Engineering (ISRM), Iguassu Falls, Brazil (2019).
6. Shechtman-Suresh Convocation and Honorary Symposium, Aristotle University of Thessaloniki, 30/11-3/12, Thessaloniki, (2018).
7. 15th International conference of numerical analysis and applied mathematics, Mini-Symposium "Chemomechanics of Novel Materials & Disclinated MicroCrystals / DMCs", Thessaloniki, (2017).
8. 3rd Panhellenic Conference of Dams and Reservoirs, Athens, (2017).
9. EUROMAT 2017, European congress and exhibition on advanced materials and processes, Thessaloniki, (2017).
10. EUROCK 2016, *2016 ISRM International Symposium, Rock Mechanics and Rock Engineering: From the past to the future*, Cappadocia, Turkey (2016).
11. *SIPS 2015 - Sustainable Industrial Processing Summit, Aifantis International Symposium: Multiscale Material Mechanics and Multiphysics and Sustainable Applications*, Antalya, Turkey (2015).
12. *IISA 2015, The 6th International Conference on Information, Intelligence, Systems and Applications*, Corfu, Greece (2015).
13. *13<sup>th</sup> International ISRM Congress on Rock Mechanics*, Montreal, Canada, (2015).
14. *World Landslide Forum 3*, Beijing, China, (2014).
15. *10<sup>th</sup> HSTAM International Congress on Mechanics*, Hellenic Society for Theoretical & Applied Mechanics (HSTAM), Πολυτεχνείο Κρήτης, Χανιά (2013).
16. *2nd Chaotic Modeling and Simulation International Conference (CHAOS 2009)*, Chania, Crete, Greece, (2009).
17. *8<sup>th</sup> HSTAM International Congress on Mechanics*, Hellenic Society for Theoretical & Applied Mechanics (HSTAM), Πανεπιστήμιο Πατρών, Πάτρα (2007).
18. *7<sup>th</sup> National Congress on Mechanics*, Hellenic Society for Theoretical & Applied Mechanics (HSTAM), Πολυτεχνείο Κρήτης, Χανιά (2004).

19. *5<sup>th</sup> EUROMECH Solid Mechanics Conference*, European Mechanics Society (EUROMECH), Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (2003), [member of the local organizing committee].
20. *6<sup>th</sup> National Congress on Mechanics*, Hellenic Society for Theoretical & Applied Mechanics (HSTAM), Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (2001), [member of the local organizing committee].
21. *2nd National Congress of Chemical Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (1999)*.
22. *5<sup>th</sup> National Congress on Mechanics*, Hellenic Society for Theoretical & Applied Mechanics (HSTAM), University of Ioannina, Ioannina, Greece (1998).
23. *2<sup>nd</sup> Euroconference and International Symposium. Material Instabilities in Deformation and Fracture*, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (1997), [member of the local organizing committee].
24. *1<sup>st</sup> Euroconference and U.S Workshop. Material Instabilities in Deformation and Fracture*, Faculty of Engineering, Aristotle University of Thessaloniki, Porto Carras, Chalkidiki, Greece (1996).
25. *7th National Congress of Hellenic Geological Society, with emphasis in Geology of Macedonia and Thrace*, Aristotle University of Thessaloniki, Department of Geology, Thessaloniki, Greece (1994).
26. *2nd Symposium of Archaeometry*, Aristotle University of Thessaloniki, Department of Geology and Archaeology, Thessaloniki, Greece (1993).
27. *Daily Symposium of Thessaloniki's water supply (Association of Greek Geologists)*, Thessaloniki, Greece (1990).
28. *2nd Greek-Bulgarian Symposium for the Geological and Physico-geographical problems of Rodope*, Aristotle University of Thessaloniki, Department of Geology, Thessaloniki, Greece (1989).

## **17. Professional training**

1. Implementation of the Dam Safety Regulation, online seminar, Hellenic Committee on Large Dams (EEMF), (29/3/2021, 5/4/2021), Greece.

2. *Implementation of the General Regulation of Data Protection 679/2016*, Priority quality consultants S.A., online seminar, University of Thessaly (1/12/2020), Volos, Greece.
3. *Institutional framework, licensing and renewable energy applications*. National Center for Public Administration and Local Government (EKDDA) PINEP Central Macedonia, (17/12/2012 - 21/12/2012), Thessaloniki, Greece.
4. *Environmental management, urban and spatial data using geographic information systems (GIS)*. National Center for Public Administration and Local Government (EKDDA) PINEP Central Macedonia, (13/12/2010 - 17/12/2010), Thessaloniki, Greece.
5. *Urban Planning Provisions*. National Center for Public Administration and Local Government (EKDDA) PINEP Thessaly, (18/9/2007 - 21/9/2007), Larissa, Greece.

## **18. Computers software**

1. Applications in Geotechnical Engineering, Rock Mechanics and Engineering Geology (*Phase/RS2, FLAC, UDEC, Abaqus, MARC, Slide, Dips, Rocfall, Rocsupport, Mohrview, Swedge, Unwedge, Galena*).
2. Mathematics (*Maple, Mathcad, Mathematica, Matlab*).
3. Graphs / Drawing programs / Graphics editing (*Grapher, Surfer, Paint etc.*).

## **19. Foreign languages**

1. English (Cambridge First Certificate in English).

## **20. Member of scientific / professional organizations**

1. International Society for Rock Mechanics (ISRM).
2. Geological Society of Greece (GSG).
3. The Geotechnical Chamber of Greece (GEOTEE).
4. The Association of Greek Geologists.
5. Teachers Association, University of Thessaly.
6. Member of the Group of Dam Experts of the Greek Dam Management Authority.

7. Member of the Register of Assessors of the General Secretariat for Research and Technology (GSRT).