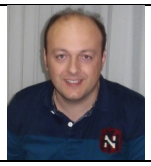
DEPARTMENT OF MECHANICAL ENGINEERING – UNIVERSITY OF WESTERN MACEDONIA

Name and Surname:	Konstantinos Balassas	
Specialization/Position:	Mathematician/Scientific cooperator (Department of Mechanical Engineering, UOWM)	
Brief CV:	After participating in the PanHellenic exams Konstantinos Balassas entered in the mathematics Department of the University of Ioannina at 1995. He studied there for four years (it's a four year degree) and his choice of specialization was Applied Mathematics and Engineering. Upon receiving his bachelor degree he enrolled in a master program entitled "Applied Mathematics and Mechanics" which he finished in 24 months (it's a two year master degree). The subject of this master is “Symmetries and Similarity Solutions of Differential Equations. An Application to a Boundary Value Problem of Fluid Mechanics”. The results of the above master were published in the International Journal of Non-Linear Mechanics in a paper entitled “Symmetry Groups and Similarity Solutions for a Free Convective Boundary-Layer Problem”. His PhD studies started at October 2001 at the Department of Mathematics at University of Ioannina. He defended his thesis successfully in November 2005 under the supervision of Vassilios Kalpakides. The subject of this thesis is “Making Productive Notions from Material Mechanics for Computations to Continuum Mechanics”. From the mathematical point of view the basic tools used were: notions from variational calculus and finite elements theory. From the mechanical point of view he introduced his self to the approach of Material or configurational mechanics and to the nonlinear continuum mechanics in general. His research interests focus on the wider area of Applied Mathematics and especially on mathematical formulation and problem solving, mainly from Continuous Mechanics (Solid Mechanics and Fluid Mechanics). The study of the above, as for example the phase transition problems, is mainly done through the prism of Engineering of Material Space. A large part of his research activity is the development of computational code using computational methods and mainly with the finite element method. Another area of his research activity is to find symmetries and similarity solutions of Differential Equations. One problem that has been dealt with is the study of the boundary layer created by moving a surface into a stationary viscous fluid under the influence of an external magnetic field. With regard to his research work so far, six scientific papers have been published in international scientific journals, one in a book and seven in conferences. There are also 33 heterogeneous references.	
Publications 2013-2018 ***(up to 5)***	1. "Simultaneous solution of momentum and canonical momentum equations", *European Journal of Mechanics A/Solids*, Vol. 26 (2007) 887-900, **K.G. Balassas**, V.K. Kalpakides and E.P. Hadjigeorgiou. 2. "The use of material forces in a 1D phase transition problem", *Computer Methods in Applied Mechanics and Engineering*, Vol. 196 (2007) 2161-2172, **K.G. Balassas**, V.K. Kalpakides. 3. "Material forces and phase transitions in elasticity", *Archive of Applied Mechanics*, Vol. 77 (2006) 135-146, V.K. Kalpakides, **K.G. Balassas** and C.V. Massalas. 4. "The inverse deformation mapping in the Finite element method", *Philosophical Magazine*, Vol. 85 (2005) 4257-4275, V.K. Kalpakides and	

	K.G. Balassas. 5. "Symmetry Groups and Similarity Solutions for a Free Convective Boundary- Layer Problem", *International Journal of Non-Linear Mechanics*, Vol. 39 (2004) 1659-1670, V. K. Kalpakides and **K. G. Balassas**.
Research Projects 2013-2018 ***(up to 5)***	1. Participation in the research program with a title: **"Symmetry Methods in Continuum Mechanics. Applications in Fluid and Material Mechanics"**. Scientific Coordinator, Vassilos Kalapakides, Assistant Professor, Department of Mathematics, University of Ioannina. Funding was provided by the Research Committee of the University of Ioannina. 2. Participation in the research program 61/1748 with a title: "ΗΡΑΚΛΕΙΤΟΣ": **"Use of Concepts from Material Mechanics for Computational in Continuum Mechanics"**. Scientific Coordinator, Vassilos Kalapakides, Assistant Professor, Department of Mathematics, University of Ioannina. Co-funding was 25% from the Hellenic Ministry of Education and 75% from the European Social Fund. 3. Participation in the research program 61/1912 with a title: **"ΠΥΘΑΓΟΡΑΣ ΙΙ: "Ideal Equations and Boundary Conditions for the Pseudomomentum Equation"**. Scientific Coordinator, Vassilos Kalapakides, Assistant Professor, Department of Mathematics, University of Ioannina. Co-funding was 25% from the Hellenic Ministry of Education and 75% from the European Social Fund. 4. Participation in the research program Greek-German cooperation **IKYDA** (2005-2007) with a title: **"Material forces in Continuum Mechanics, in Scientific computationals ans Structure Optimization"**. Cooperation with scientific work group of Professor Franz-Joseph Barthold, Department of Civil Engineering, University of Dortmund, Germany
Distinctions:	**Graduate**: **1995-1996**, **1997-1998** ▪ State Scholarships Foundation **Postgraduate**: **1999-2000, 2002-2005** ▪ State Scholarships Foundation ▪ Hellenic Ministry of Education **Postdoctoral Fellowship** ▪ State Scholarships Foundation