

**UNIVERSITY OF PRETORIA**

**CURRICULUM VITAE – MR COR-JACQUES KAT**

(Updated 02 February 2012)

**1. BIOGRAPHICAL SKETCH**

1.1 GENERAL INFORMATION							
<b>Surname</b>	Kat						
<b>First names</b>	Cor-Jacques						
			<b>Title</b>	Mr	<b>Female</b>		<b>Male</b>
							X
<b>Department</b>	Mechanical and Aeronautical Engineering		<b>Position</b>	Lecturer			
<b>Direct Telephone</b>	012-420-2928		<b>Direct Telefax</b>	012-362-5087			
<b>E-mail</b>	cor-jacques.kat@up.ac.za						
<b>Date of appointment</b>	01/01/2012		<b>Permanent full-time</b>	X	<b>Temporary full-time</b>		

1.2 ACADEMIC QUALIFICATIONS OBTAINED				
Degree/ Diploma	Field of study	Higher education institution	Year	Distinctions
M.Eng	Mechanical Engineering	University of Pretoria	2009	Cum Laude
B.Eng (Hons)	Mechanical Engineering	University of Pretoria	2008	
B.Eng	Mechanical Engineering	University of Pretoria	2007	

1.3 WORK EXPERIENCE TO DATE		
Name of employer	Capacity and/or type of work	Period From (mm//yy to mm//yy)
University of Pretoria	Lecturer	01/12 to present
Afrit	Engineer, Research and development engineer	01/07 to 12/11

## 2. TEACHING ACTIVITIES

### 2.1 Courses presented

Course	Level (e.g. second year, Masters)	Self developed (Yes or No)
None		

### 2.2 Other education and pedagogic courses presented

Course	Year	Institution
Vehicle dynamics	2009	Ismans, Le Mans, France

## 3. TEACHING OUTPUTS

### 3.1 Educational publications and products

*None*

## 4. OTHER TEACHING CONTRIBUTIONS

### 4.1 Membership of national and international bodies

*None*

### 4.2 Visits to local and overseas universities as guest professor or lecturer in regard to teaching

*Guest lecturer teaching a vehicle dynamics course as part of a "Masters degree and race car vehicle engineering" at Ismans in Le Mans, France (2 weeks in 2009)*

### 4.3 Participation in national and international teaching associations, bodies, committees

*None*

## 5. POSTGRADUATE SUPERVISION

### 5.1 Supervision or co-supervision of students who have completed degrees

Name of student	Degree <sup>1</sup> /Title of dissertation/ thesis and date completed	Supervisor	Co-supervisor(s)	Duration of studies (years)
None				

5.2 Current post-graduate students					
Name of student	Degree <sup>2</sup> enrolled for and date of first registration	Project title	Supervisor	Co-supervisor(s)	Year of registration
None					

## 6. RESEARCH FUNDING

6.1 Obtaining research funds (Optional)			
Origin of research funds (e.g. contract research, THRIP, international funding organisations, other(s))	Title of research project or programme	Duration	Money allocated (R) (Opt.-exact amounts not required)
None			

## 7. RESEARCH OUTPUTS

7.1 Publications in peer-reviewed or refereed journals
<p><b>Publications published in peer-reviewed or refereed journals:</b></p> <ol style="list-style-type: none"> <li>Kat, C. and Els, P.S., 2011, Elasto-plastic leaf spring model, International Journal of Engineering Systems Modeling and Simulation, Vol. 3, Nos. 3/4, 2011.</li> <li>Kat, C. and Els, P.S., 2009, Interconnected air spring model, Mathematical and Computer Modelling of Dynamical Systems, Vol. 15, No. 4, August 2009, pp. 353–370.</li> </ol> <p><b>Publications accepted for publication in peer-reviewed or refereed journals:</b></p> <ol style="list-style-type: none"> <li>Kat, C. and Els, P.S. (2012), "Validation metric based on relative error", Mathematical and Computer modelling of Dynamical Systems, Accepted on 2012/01/30</li> </ol> <p><b>Publications submitted for publication in peer-reviewed or refereed journals:</b></p>

7.2 Books and/or chapters in books
None

7.3 Published full-length conference papers/keynote addresses

<sup>1</sup> Indicate whether Honours, Masters research, Masters coursework with dissertation or Doctorate

<sup>2</sup> Indicate whether Honours, Masters research, Masters coursework with dissertation or Doctorate

### **International conferences of high standing**

1. Kat, C. and Els, P.S., 2011, Importance of Correct Validation of Simulation Models, Proceedings of the ASME IDETC/CIE 2011, Washington, DC, 28 to 31 August 2011 (peer reviewed)
2. Kat, C. and Els, P.S., 2011, Leaf spring modelling, Proceedings of the 17<sup>th</sup> International Conference of the ISTVS, Blacksburg, USA, 18 to 22 September 2011 (peer reviewed)
3. Kat, C. and Els, P.S., 2010, Leaf spring model based on material behaviour, Proceedings of the Joint 9th Asia-Pacific ISTVS Conference and Annual Meeting of the Japanese Society for Terramechanics, 27 to 30 September 2010, Sapporo, Japan.
4. Kat, C. and Els, P.S., 2009, Suspension forces on a tri-axle air-suspended semi-trailer, Proceedings of the 11<sup>th</sup> European Regional Conference of the International Society for Terrain Vehicle Systems (ISTVS), 5 to 8 October 2009, Bremen, Germany.

### **Conferences of lesser standing**

*None*

### **Conference abstracts/papers accepted**

*None*

### **Conference abstracts submitted**

*None*

### **7.4 Non-refereed publications or popular articles**

*None*

### **7.5 Patents**

*None*

### **7.6 Technical reports**

1. Tests performed on an AFRIT tandem-tandem interlink combination, BE at UP Report number MA4080, December 2007.
2. Braking and Cornering Tests Performed on a Caterpillar 793D Dump Truck, April 2007.

## **8. OTHER SCHOLARLY RESEARCH-BASED CONTRIBUTIONS**

## **8.1 Participation in conferences, workshops and short courses - specify type of contribution**

*Provide full details of participation in national and international conferences etc*

### **8.1.1 National**

1. ESTEQ User's conference, CSIR International conference centre, 27 Oct, 2011. Attended
2. ADAMS mobility day, Gerotek, 17 Aug 2011. Attended
3. ESTEQ User's conference, CSIR International conference centre, 11 Nov, 2010. Attended
4. MSC.ADAMS/Car introductory course (ADM740) presented by Esteq, 2010. Attended
5. 7<sup>th</sup> South African Conference on Computational and Applied Mechanics (SACAM), 10-13 Jan 2010. Attended
6. ESTEQ User's conference, CSIR International conference centre, 4 Nov, 2009. Attended
7. Mechanics of Heavy Duty Truck Systems, Stellenbosch, 7-10 April 2008. Attended
8. Linear static, normal modes, and buckling analysis using MSC.Nastran and MSC.Patran course presented by ESTEQ, 2006. Attended

### **8.1.2 International**

1. 17th International Conference of the International Society for Terrain-Vehicle Systems (ISTVS), Blacksburg, Virginia, USA, 18-22 Sept 2011. Presented paper
2. 13th International Conference on Advanced Vehicle and Tire Technologies (AVTT), Washington, DC, USA, 28-31 Aug 2011. Presented paper
3. 9th Asia-Pacific conference of the International Society for Terrain-Vehicle Systems and annual meeting of the Japanese Society for Terramechanics, Sapporo, Japan, 27-30 Sept 2010. Presented paper
4. 12th International Conference on Advanced Vehicle and Tire Technologies (AVTT), Montreal, Quebec, Canada, 15-18 Aug 2010. Attended
5. 11th European Regional Conference of the International Society for Terrain-Vehicle Systems, Bremen, Germany, 5-8 Oct 2009. Presented paper.

## **8.2 Teamwork and collaboration with others:**

*Other researchers (national and international)*

1. Dr. Jennifer Johrendt, University of Windsor, Canada

*Other research institutions (national and international)*

*None*

*Industry*

1. AFRIT

### **8.3 Membership in national and international bodies**

1. American Society of Mechanical Engineers (ASME): Student member (2011)
2. SAE International: Student member (2008 to present)

### **8.4 Visits to local and overseas universities or research institutes as guest professor or researcher**

1. Collaborative research with Dr J.L Johrendt at the University of Windsor, 2011 (2 weeks)
2. Guest lecturer lecturing the vehicle dynamics module of the Masters degree course in Race Car Engineering, Ismans, Le Mans, France, 2009 (2 weeks)

## **9. ARTISTIC OUTPUTS (if applicable)**

*Not applicable*

## **10. MANAGEMENT AND ADMINISTRATIVE DUTIES**

*Departmental activities*

*None*

## **11. COMMUNITY SERVICE OR PROFESSIONAL SKILLS**

### **11.1 Outreach projects**

*SASOL Mini Baja competition – Involves Mechanical Engineering students from Universities and Universities of Technology in South Africa, as well as international competitors from the USA, India, Iran and Botswana, Russia, Turkey.*

**11.2 Professional service performed**

*TV appearances: e-tv Morning edition Mini Baja (2006)*

**11.3 Clinical service**

*Not applicable*

**11.4 Involvement with other universities/scientific institutions**

1. Collaborative research with the University of Windsor, 2011

**11.5 Referee duties**

*None.*

**12. AWARDS AND SCIENTIFIC/SCHOLARLY RECOGNITION****12.1 Evaluation status as scientist/scholar**

*None.*

**12.2 Research awards and prizes**

*None*

**12.3 Teaching awards and prizes**

*None*

**12.4 Artistic awards and prizes**

*Not applicable*