

# *CURRICULUM VITAE*

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**NAME:** CILLA PEMBERTON

**DATE OF BIRTH:** 24 SEPTEMBER 1971

**FACULTY:** FACULTY OF ENGINEERING

**DEPARTMENT:** DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

**POSITION:** LECTURER IN INDUSTRIAL ENGINEERING

**GENERAL AREA OF ACADEMIC SPECIALISATION:** INDUSTRIAL ENGINEERING

## **QUALIFICATIONS & GRANTING INSTITUTION**

<b><u>Degree</u></b>	<b><u>University</u></b>	<b><u>Date</u></b>
Certificate in University Teaching and Learning	UWI	2019
Doctorate in Business Administration (ALJGSB)	UWI	2015
MSc Innovation, Entrepreneurship and Mgmt	UTT	2007
MSc Production Engineering and Management	UWI	2001
BSc Industrial Engineering	UWI	1993

## **TRAINING**

- i)** Institute of Industrial and Systems Engineers (IISE) - Lean Enterprise Master Practitioner
- ii)** Productivity Europe - Lean Manufacturing Tools and Techniques European Commission, Port-of Spain.
- iii)** Project Cycle Management - International Institute for Learning (IIL). Managing Multiple Projects
- iv)** International best practice in the facilitation of Business Development - Springfield Institute UK held at Strathclyde University, Glasgow, Scotland
- v)** Centre for Development of Enterprise Brussels, Belgium – Onsite Engagement in managing Technical Assistance projects.

**LIST OF PUBLICATIONS****REFEREED PUBLICATIONS****REFEREED PUBLICATIONS: JOURNAL ARTICLES**

**Benjamin, Cilla T.** 2017. "The Entrepreneurial Motivations of Engineering Students: Case of a Small Island Developing State from the Caribbean." *The West Indian Journal of Engineering* 40 (1): 31-40.  
*Journal Impact Factor: N/A Citations: 0*

**Benjamin, Cilla T.** 2016. "Defining a Fashion Industry Value Stream in a Small Island Developing State", *International Journal of Supply Chain Management*, Vol 5, No. 1, pp 68-74  
*Journal Impact Factor: N/A Citations: 0*

**Benjamin, Cilla T.**, and Kit Fai Pun 2015. "Evaluation of a Development Plan for the Trinidad and Tobago Fashion Industry." *The Journal of the Association of Professional Engineers of Trinidad and Tobago* Vol.43 No.1: pp 16-21.  
*Journal Impact Factor: N/A Citations: 0*

**Benjamin, C.T.** and Pun, K.F. 2014. "An Exploratory Study to determine Archetypes in the Trinidad and Tobago Fashion Industry Environment", *West Indian Journal of Engineering*, Vol.37, No.1, pp.70-76.  
*Journal Impact Factor: N/A Citations: 0*

**Benjamin, C.T.** 2013. "A Study of Behaviours that Retard the Implementation of Lean Operations" *The Journal of the Association of Professional Engineers of T&T*, . Vol 41 No. 1 pp 43-48.  
*Journal Impact Factor: N/A Citations: 6*

Persad, P., Ameerali, A.O. and **Cilla T. Benjamin** 2012. "The Development of a Sustainable Caribbean Invention and Innovation Centre at the University of Trinidad and Tobago" *The International Journal of Technology and Inclusive Education. Infonomics Society*, Vol 1 No. 1 pp24 – 28.  
*Journal Impact Factor: N/A Citations: 0*

**REFEREED PUBLICATIONS: CONFERENCE PROCEEDINGS**

Dana Basdeo, Jeremiah Oji, **Cilla Pemberton**, Renique Murray, and Robert Birch. 2018. "Salience Model Analysis of the Trinidad and Tobago Cocoa Industry." IEM4-2018 Striving for Performance Excellence with Quality Management and IE Practices Conference Proceedings. St. Augustine: Dept. of Mech and Mfg Eng. pp148-156

Daniel Hosein, Robert A. Birch, Renique Murray, and **Cilla Pemberton**. 2018. "A Portable Modular Mechanised System for In-field Transporting of Harvested Cocoa." Science, Technology and Innovation - Vehicles for a Knowledge Based Economy Conference Proceedings. Kingston: Caribbean Academy for Sciences, pp 270 - 277

**Benjamin, Cilla**. "Can Lean Production Create Competitive Advantage in Local SMEs? A Framework for a Local Case Study." Science and Technology: Vehicles for Sustainable Development in the Caribbean. St. Georges: The Caribbean Academy of Sciences, 2008. pp317-322.

**Benjamin, Cilla**, and Denise-Margaret Thompson. "The Impact of Science, Technology and Innovation on the Global Competitiveness of Trinidad and Tobago Food Processors." Science and Technology: Vehicles for Sustainable Economic Development in the Caribbean. St. Georges: The Caribbean Academy for Sciences, 2008. pp 323-328.

### **NON-REFEREED PUBLICATIONS AND RELATED WORKS**

#### **NON-REFEREED PUBLICATIONS AND RELATED WORKS: CONFERENCE PROCEEDINGS**

**Benjamin, Cilla T.** 2015. "Healthcare Facilities - Inefficient by Design?" Ministry of Design - From Cottage Industry to State Enterprise Colloquium Proceedings. St. Augustine: Department of Creative and Festival Arts. 45-61.

Young, Robert, and **Cilla T. Benjamin** 2015. "The Cooperative as a Solution to Manufacturing, Production and Isolation for Fashion Designers in Trinidad and Tobago and the Caribbean." Ministry of Design - From Cottage Industry to State Enterprise Colloquium Proceedings. St. Augustine: Department of Creative and Festival Arts. UWI. 111-125.

#### **NON-REFEREED PUBLICATIONS AND RELATED WORKS: TECHNICAL REPORTS**

**Manufacturing Profiles** commissioned by INVESTT – T&T's Investment Promotion Agency  
I was one of three (3) main members of a team in the Department that worked on and submitted, in 2016, a series of reports to INVESTT. On the team, I trained team members in my areas of expertise, wrote some reports, some report sections and reviewed everything.

- i)** The Development of Project Profiles for the Manufacturing Sector of Trinidad and Tobago: Volume 1: Final Report 362 Pages
- ii)** The Development of Project Profiles for the Manufacturing Sector of Trinidad and Tobago Volume 2: Exploration of Manufacturing Trends 73 Pages
- iii)** The Development of Project Profiles for the Manufacturing Sector of Trinidad and Tobago Volume 3: Manufacturing Profiles (14 reports) 350 Pages (Est)

NON-REFEREED PUBLICATIONS AND RELATED WORKS: ABSTRACTS AND POSTERS

- i) **Pemberton Cilla** 2019. "Paper #584587 Industrial Upgrading in the Caribbean Fashion Industry." Orlando: Institute of Industrial and Systems Engineers.
- ii) **Pemberton Cilla**, John Pumwa, Rajeshkannan Ananthanarayanan, and Oneil Josephs. 2018. "Engineering Programmes and Economic Development in the SIDS of the Caribbean and South Pacific." Science, Technology and Innovation - Vehicles for a Knowledge Based Economy Conference Proceedings. Kingston: Caribbean Academy for Sciences, p 288.
- iii) **Pemberton Cilla**, and Oneil Josephs. 2018. IEM-014 "Engineering Entrepreneurship in the Caribbean." IEM4-2018. Striving for Performance Excellence with Quality Management and IE Practices Conference Proceedings. St. Augustine: Dept. of Mech and Mfg Eng, UWI, p 29.
- iv) **Pemberton Cilla**, Renique Murray, Robert Birch, and Jeremiah Oji. 2018. IEM-017 "The Case for a University-Based OEDM in the Regional Cocoa Industry." IEM4-2018 Striving for Performance Excellence with Quality Management and IE Practices Conference Proceedings. St. Augustine: Dept. of Mech and Mfg Eng, p40.
- v) Birch Robert, Rodney Seepersad, Renique Murray, **Cilla Pemberton**, and Edwin I. Ekwue. "A Mechanised Cocoa Dryer Chamber" Science, Technology and Innovation - Vehicles for a Knowledge Based Economy Conference Proceedings. Kingston: Caribbean Academy for Sciences, p 286.

WORK NOT YET PUBLISHEDWORK NOT YET PUBLISHED: CURRENTLY UNDER REVIEW FOR PUBLICATION

Renique Murray, Sanjay Bachu, **Cilla Pemberton**, and Robert Birch 2019 "Investigation of Cocoa Pod Husk Mechanical Behaviour and the Impact upon Specific Cutting Energy." Submitted to APETT Journal.

WORK NOT YET PUBLISHED: IN PREPARATION

**Authors:** **Cilla Pemberton**, John Pumwa, Rajeshkannan Ananthanarayanan, and Oneil Josephs.

**Title:** "A Conceptual Model for Integrating Entrepreneurship in Engineering Programmes in the Small Island Developing States (SIDS) of the Caribbean and South Pacific"

**Authors:** **Cilla Pemberton** and Oneil Josephs

**Title:** "Engineering Entrepreneurship as a Vehicle for Caribbean Development: Case of Jamaica and Trinidad and Tobago"

**Authors:** **Cilla Pemberton**, Robert Birch, Renique Murray, and Dana Basdeo.

**Title:** Can Lean Six Sigma transform Community Based Agro-Industry?

**Authors:** Cilla Pemberton, Renique Murray, Robert Birch and Dana Basdeo.

Title: Application of Industrial Engineering tools to improve Sustainability in the Cocoa Industry

### **DISTINCTIONS, HONOURS, SCOLARSHIPS AND AWARDS**

Distinction and 1<sup>st</sup> Place: MSc Innovation, Entrepreneurship and Mgmt (UTT 2007)

### **SPECIAL PRESENTATION AND INVITED LECTURES**

Open lectures conducted in the general area of Engineering Entrepreneurship/Caribbean Entrepreneurship

- i) University of Technology, Kingston Jamaica (November 2018)*
- ii) University of the South Pacific, Suva, Fiji (July 2018)*
- iii) UWI Open Campus, Basseterre (July 2017)*
- iv) UWI Open Campus, Charlestown (July 2017)*

### **PUBLIC SERVICE**

- i) Visiting Lecturer** American University of the Caribbean, Les Cayes Haiti 2015- 2019
  - *Workshops in Entrepreneurship (2015-2016)*
  - *Established a virtual Business Incubator on the AUC Charpentier Campus*
  - *Connected students with investors from the business community in Les Cayes*
  - *Workshop in Product Development and Innovation (planned for 07/2019)*
- ii) Community service.** Developed and implemented an entrepreneurship programme at Golden Grove Women's Prison, aimed at equipping convicted, remand and juvenile inmates with tools to generate a sustainable legal source of income on their release from the institution. It would be very difficult for them to secure traditional employment otherwise, because of their active criminal records. Expansion to the other prisons are imminent, with this initiative being used as the model.

### **OTHER PROFESSIONAL ACTIVITY AND EXPERIENCE**

**President** Society of Caribbean Industrial Engineers (2017 – 2019)

**Professional Member** Institute of Industrial and Systems Engineers (IISE) (2011-2019) with divisional membership in *Data Analytics and Information Systems, Energy Systems, Engineering Economy, Logistics & Supply Chain, Manufacturing and Design, Operational Excellence, Operations Research, Quality Control & Reliability Engineering, Sustainable Development, Work Systems.*

**Member** IEEE Education Society and Technology and Engineering Management Society

**RESEARCH**

**GRANT:** European Development Fund via the Ministry of Education GORTT

**VALUE:** \$1M TT

**PROJECT TITLE:** Enhancing The Feasibility of The Local/Regional Chocolate Industry Via The Development Of Low-Cost Processing Equipment

**Details:** Based on a proposal submitted by the MMERC through the University to the Ministry of Education, the team, led by Dr. Murray, Dr. Birch and I, received a grant of \$1m to conduct research aimed at capitalising the fine flavored cocoa available in the region. The proposal was prepared with 4 modules. Modules 1 and 2 involve the design and modeling of field and factory equipment, inclusive of student projects while modules 3 and 4 involves research on the industry, in general, with commercialisation, economic feasibility, sustainability and operational focus. I have participated in Module 2 regarding the supervision of design and build student projects and I am overall responsible for Modules 3 and 4. We have done a significant number of presentations and conference papers and are currently completing journal papers for submission this year. We also plan to develop two (2) books from this project. The project should end in August 2019 and I am currently preparing a proposal for a stakeholder funded 2<sup>nd</sup> phase.

**GRANT:** Campus Research and Publication Fund CRP.3.NOV17.15

**VALUE:** \$30,000TT

**PROJECT TITLE:** Creating a typology for Caribbean Engineering Entrepreneurship

**Details:** Received a CARPIMS Grant in 2018 (exact value not known), supplemented by my Study and Travel Grant to conduct research on Engineering Entrepreneurship in the Engineering Faculties of the SIDS. Visited University of the South Pacific in Fiji and Papua New Guinea University of Technology in Lae, Papua New Guinea. Presented at two (2) conferences and collected data for two (2) journal papers in conjunction with co-authors at the institutions visited plus University of Technology in Kingston Jamaica. Work continues with the Research Assistant hired through the CRP Fund grant.

*Fibre-to-Fabric*

I prepared a proposal which was forwarded by the MMERC to the ORDKT with the aim of getting a grant to develop the fibre-to-fabric project which looks at engineering solutions for creating fabric and other products from natural material available within the region such as West Indian Sea Island Cotton and banana pseudo-stems. Meanwhile, work has started with this, based on student projects in the department.

*Industrial Engineering and Sustainability*

This research considers all areas of Industrial Engineering, including Lean and Six Sigma, and its application to improving sustainability in diverse industries. I am an active member of the Sustainability Division of the Institute of Industrial and Systems Engineers (Norcross, Georgia) and I am also a Certified Lean Enterprise Master Practitioner. This research is being progressed through student projects and in collaboration with other research activities listed above.

**POSTGRADUATE RESEARCH AND SUPERVISION****MPhil Thesis Supervision**

- i)** Kelly Martinez Optimisation at a Multifunction Port: Case of Point Lisas Industrial Port Development Corporation Limited (PLIPDECO), Trinidad & Tobago (In-progress)

**MSc Project Supervision**

- i)** Sarah Seerattan (2019) *“Assessing the Current Status of Occupational Health and Safety Management Systems (OHSMS) in the Ministry of National Security, in Trinidad and Tobago.”* (Project Submitted)
- ii)** Jeremiah Oji (2018) *“The Feasibility of the Development of New Equipment for the Local Cocoa Industry.”* (Awarded MSc Project Management)
- iii)** Praveen Ramdial (2018) *“The Prevalence of Work Related Stress Among Municipal Workers in Arima, Trinidad.”* (Awarded MSc OESH)
- iv)** Morelien Danger (2017) *“Improving Supply Chain Management through Lean, Agile and Green Manufacturing. Case of Brana: A Brewery Company in Haiti.”* (Awarded MSc Production Management)
- v)** Crystal Baptiste (2017) *“Application of Lean Techniques at a Tissue Paper Mill.”* (awarded MSc Production Management)
- vi)** Andrew Ramoutar (2015) *“Study of Safety Training and Practice in the T&T Police Service – Case of the Western Division”* (Awarded MSc OESH)
- vii)** Adrian Cruickshank (2015) *“An Investigation of Occupational Stress among Public Secondary School Teachers in East Trinidad”* (Awarded MSc OESH)
- viii)** Saneeta Siew (2015) *“The Prevalence of Job Stress among Workers directly involved in Financial Activities in Credit Union X”* (Awarded MSc OESH)
- ix)** Farah Mohammed (2015) *“OESH in the Eastern Division of the T&T Police Service”* (Awarded MSc OESH)
- x)** Hannah Mathura (2010). *“Is there Opportunity for Improvement of Patient Care Delivery at the Computer Tomography Clinic of the Eric Williams Medical Sciences Complex?”* (Awarded Masters in Health Administration, UTT)
- xi)** Michelle St. John (2010). *“Process Improvement in the San Fernando General Hospital’s Linen Cycle using Lean Management.”* (Awarded Masters in Health Administration, UTT)

**TEACHING AND RELATED EXPERIENCE**

<b><u>Post</u></b>	<b><u>Where Held</u></b>	<b><u>Dates</u></b>
Lecturer in Industrial Engineering	UWI	2017-
Instructor	UWI	2012-2016
Part-Time/Casual Lecturer	UTT	2006-2016

**Current Teaching - Primary Lecturer:**

- MENG6402 Human Resource Management I (MSc) (*Student Evaluation 4.8/5*)
- MENG6403 Human Resource Management II (MSc) (*Student Evaluation 4.3/5*)
- IENG2006 Engineering Econ, Acc'g and Financial Mgmt (BSc) (*Student Evaluation 4.6/5*)
- ENGR 1000/MENG1006 Introduction to Engineering (BSc) (*Student Evaluation 3.7/5*)

**Project Supervision:**

- MSc Project Supervision and 2<sup>nd</sup> Examiner
- Final Year Project Supervisor: MENG3019 Mechanical Engineering Project & IENG3012 Industrial Engineering Project - Supervised 11 final year projects in 2018/2019 academic year and 30+ projects overall.

**PREVIOUS TEACHING EXPERIENCE****UWI (2012-2016):**

MENG6401 Advanced Production Management  
 MENG3000 Engineering Management I  
 IENG3001 Production Planning and Control  
 IENG3000 Industrial Management  
 MENG1013 Communication Skills  
 MENG2014 Communication Skills  
 IE22A Industrial Instrumentation (1999)

**UTT (2006-2016) MSc, BAsC & BTech/BEng:**

**MSc Level, Agora Campus:** Business Strategy and Marketing

**BAsC, O'Meara Campus:** Financial Management; Engineering Sustainability; Operations Management I and II; Quality Management

**BTech/BEng, Pt. Lisas Campus:** Contract Management; Human Resource Management; Maintenance Management; Manufacturing Systems Management; Product Design and Innovation; Quality Control; Quality Management; Work/Methods Study and Production Planning

**Valsayn Campus:** Project Management



**CONTRIBUTIONS TO THE DEPARTMENT**

- i)** Level 3 Student Coordinator and Academic Advisor (2018- )
- ii)** Level 2 Student Coordinator/ Assistant Coordinator and Academic Advisor (2015- )
- iii)** Preparation of the Departmental Strategic Plan / Strategic Planning Team (Ongoing)
- iv)** **Organiser/co-organiser** of educational events hosted by the department
  - *Introduction to Lean Management Industrial Eng Student Workshop May 2019*
  - *Creating a Circular Economy in TT April 2019*
  - *Globalisation and the Sustainable Supply Chain for TT Manufacturers April 2019*
  - *Lean Six Sigma and Lean and Green Post Conference Workshops December 2018*
  - *IEM4-2018 Industrial Engineering and Management Conference December 2018*
  - *Cocoa Equipment Symposium (St. Augustine) November 2018*
  - *Cocoa Equipment Symposium (Kingston Jamaica) November 2018*

**EXTRA-DEPARTMENTAL UWI SERVICE**

- i)** Programme Coordinator MA Creative Design Entrepreneurship (2016-2019)
- ii)** Lecturer for ECNG3021 Intro to Eng Mgmt and Acc'g (2015- ) (*Student Evaluation 4.6/5*)
- iii)** Faculty Entrepreneurial Committee Member
- iv)** Examiner UWI Open Campus
- v)** Faculty Representative on the Board of Studies, IGDS (2019/2020)

**OTHER WORK EXPERIENCE**

Business Consultant	Independent	2007-2012
Senior Analyst	CBSL	2003-2006
Engineer/Scheduler	Carib Glassworks Ltd	1996-2002
Production Acct	Patrick Young Sing	1995-1996
Trainee Engineer	ABEL	1993-1995