



# MOSTAFA RADWAN

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## EDUCATION

JULY 2011

**B.Sc. CIVIL ENGINEERING – FAYOUM UNIVERSITY – FACULTY OF ENGINEERING, EGYPT**

Project grade: highway engineering entitled “Application Of Maintenance Management System on GARBLT Main Roads Network in Fayoum Region (PMMS)”.

APRIL 2015

**M.Sc. CIVIL ENGINEERING – FAYOUM UNIVERSITY – FACULTY OF ENGINEERING, EGYPT**

Thesis title: Improving of Pavement Management Activities Using Geographic System Techniques.

FEBRUARY 2020

**Ph.D. CIVIL ENGINEERING – MINIA UNIVERSITY – FACULTY OF ENGINEERING, EGYPT**

Thesis title: Development of Pavement Deterioration Prediction Models for some main roads in Egypt.

## EXPERIENCE

2011 – 2012

**SITE ENGINEER, KADRY CONTRACTORS, CAIRO, EGYPT**

I offer advice in the planning, co-ordination and supervision of technical aspects of construction projects (Ready mix concrete plant & Pharmacy factory) in Fifth Settlement, Cairo

2012 – 2015

**DEMONSTRATOR, NAHDA UNIVERSITY IN BENISUEF (NUB), BENISUEF, EGYPT**

### COURSE DEVELOPMENT AND ENHANCEMENT

<i>Course Name</i>	<i>Level</i>	<i>Last Year Taught</i>
Physics 1	(1)	2012
Statics 1	(1)	2012
Drawing 1	(1)	2012
Surveying 1	(2)	2014
Behavior of material	(2)	2014 ,2015
structural analysis	(2)	2014, 2015

Geology	(2)	2014, 2015
Concrete of technology	(3)	2015
Hydrology	(3)	2015
hydraulics	(3)	2015
Design of structure concrete 1	(3)	2015
Principle of mechanical Engineering	(1)	2012
Physics 2	(1)	2012
Civil drawing	(2)	2013
Building construction 1	(2)	2013

**2015 – 2020**

**TEACHING ASSISTANT**, NAHDA UNIVERSITY IN BENISUEF (NUB), BENISUEF, EGYPT

**COURSE DEVELOPMENT AND ENHANCEMENT**

<i>Course Name</i>	<i>level</i>	<i>Last Year Taught</i>
Behavior of material	(2)	2016
Concrete of technology	(3)	2016
Soil mechanics	(3)	2016, 2017, 2018, 2019
Environmental Engineering	(4)	2016, 2017, 2018, 2019
Foundation Engineering 1	(4)	2016, 2017, 2018
Sanitary Engineering	(5)	2016
Foundation Engineering 2	(5)	2016, 2017
Bachelor Project - Highway Engineering	(5)	2017, 2018, 2019

**2020 – NOW**

**LECTURER**, NAHDA UNIVERSITY IN BENISUEF (NUB), BENISUEF, EGYPT

**COURSE DEVELOPMENT AND ENHANCEMENT**

<i>Course Name</i>	<i>level</i>	<i>Last Year Taught</i>
Structural analysis (1)	(1)	2022
Irrigation and drainage engineering	(2)	2022
Properties of material	(2)	2022
Concrete of technology	(3)	2022
Soil mechanics	(3)	2020, 2021
Foundation Engineering 1	(4)	2016, 2017, 2018
hydraulics	(4)	2022
Highway Engineering	(5)	2021, 2022
Foundation Engineering 2	(5)	2016, 2017
Bachelor Project - Highway Engineering	(5)	2017, 2018, 2019, 2020, 2021, 2022

## **INDUSTRIAL EXPERIENCE**

- ❖ member of the Advisory Unit of the Faculty of Engineering, Al-Nahda University (2012-2020), and now director of the Advisory Unit of the Faculty of Engineering (2020-Now) and its work includes supervising the implementation of various projects of roads and constructions, as well as carrying out the necessary laboratory tests, such as tests for the validity of aggregate

- and compaction (sand cone & proctor) for various layers of roads, as well as tests for concrete (compressive & Tension strength) such as shemedit hammer, Ultrasonic, core test, Loading test in addition to making reports on field visits and inspections.
- ❖ Supervising training in road maintenance sites using Full Depth Reclamation method
  - ❖ Supervision of training in construction sites for a road widening from Beni Suef to Minya, affiliated to the General Authority for Roads and Bridges. 2022
  - ❖ Participate in a team to determine the efficiency of a secondary road for the traffic of high vehicle loads, including field visits and making the required report in Assiut Governorate. 2021
  - ❖ I have studied a course in (advanced design of HMA using Superpave) under the supervision of Prof. Mostafa Amin Abo Hashema (My master's and doctoral supervisors and advisor to the Omani Minister of Transport and currently working in the Saudi Ministry of Transport).
  - ❖ Working as a site engineer in the implementation of the national project to develop the road network in Egypt (the eastern road Helwan Al-Karimat), 2021.
  - ❖ Member of the consulting team for Beni-suef Government for determining the causes of accidents on the eastern Road, Sinnoor Cave area 2015.
  - ❖ Participation in the calculation of the traffic study for the teaching hospital project of Al-Nahda University in the new city of Beni Suef 2021.
  - ❖ Supervising the implementation of a group of residential and education buildings in the new city of Beni Suef 2017-2022
  - ❖ Supervising the implementation of sewage regression network, Minia 2021- Now.

## **PAVEMENT MAINTENANCE & REHABILITATION REALTED STUDIES AND ANALYSIS**

- ❖ **Modeling IRI-PCI for Urban flexible pavement 2020:**  
the objective of this project is to develop a PCI – IRI model for secondary roads located in new beni-suef region, Egypt. For this purpose, 14 Km length of selected roads were selected divided into 20 sections. Manual distress survey was conducted to measure PCI though the available distress such as rutting, potholes, alligator, and polished aggregate. A new simplified and low-cost method was conducted to measure IRI though this sections via utilizing ultrasonic distance sensor.
- ❖ **Application of pavement maintenance management system on Urban roads in new Beni-suef city 2021:**  
This Graduation Project is aimed at application of Pavement Maintenance Management System (PMMS) through evaluation of two main roads (20 Km) long located in new beni-suef region. Office data were collected, and Field data collection has been performed. Furthermore, a distress map has been created for all roads. Data entry and analysis have been conducted using Excel sheets and PAVER software, which is considered PMS software. Finally, analysis of maintenance scenarios under different budget levels has been performed to come up with the best scenario of maintenance plan for single year prioritization for a specific budget level using worst-first scheme.
- ❖ **A simplified pavement condition index regression model for pavement evaluation in Urban Roads 2021:**  
the project contains transportation modelling, design of freeway road, PMMS on existing urban roads, and PCI and IRI calculation by modified Drone, graduation project 2021.
- ❖ **Reducing Carbon Emissions by Re-planning Roads for resisting climate change 2022:**  
A novel approach for designing roads was applied in a portion of the eastern Upper Egypt road located at Helwan Gate with a length of about 12 km. A comprehensive study was conducted to come up with the most economic design which was achieved through the new road with short length. As a result, the total mass emissions (KgCO<sub>2</sub>) for the both roads

existing and proposed are calculated for the different types of vehicles according to traffic volume, graduation project 2022.

## **SUPERVISION OF SENIOR GRADUATION PROJECTS**

- ❖ Application of pavement maintenance management system on Urban roads in new Beni-suef city, Nahda university 2020.
- ❖ A low cost instrument for pavement evaluation through measuring international roughness index, Nahda University 2021.
- ❖ A simplified pavement condition index regression model for pavement evaluation in Urban Roads, Nahda University 2022.
- ❖ Reducing Carbon Emissions by Re-Planning Roads for resisting climate change, Nahda University 2022.

## **RESEARCH AREA**

- ❖ Pavement maintenance management system
- ❖ **Pavement Evaluation**
- ❖ **Pavement distress models**
- ❖ **Pavement performance models**
- ❖ **Pavement Maintenance Scenarios**
- ❖ **Pavement Maintenance & Rehabilitation Activities**

## **ACADEMIC ACTIVITIES**

- ❖ Cooperate with Dr. Mohamoud Mahjoub, Associate Professor, School of Applied Engr & Tech, New Jersey Institute of Technology, USA in teaching behavior of material course spring 2022.
- ❖ Cooperate with Dr. Hany El-Naggar, Professor & Associate Dean, Faculty of Graduate Studies, Department of Civil and Resource Engineering, Dalhousie University, Canada in teaching concrete technology course spring 2022.
- ❖ Cooperate with Dr. Hany El-Naggar, Professor & Associate Dean, Faculty of Graduate Studies, Department of Civil and Resource Engineering, Dalhousie University, Canada in teaching Foundation Engineering course fall 2021.
- ❖ Lecturer: (Part Time) New Fayoum City - Future Institute of Engineering in Fayoum- Egypt - 2022
- ❖ Co-Author of 5 Technical Investigation Reports through working in many projects.
- ❖ Working in many research/industrial projects in Egypt
- ❖ Member of research group between Fayoum university and Benisuef university working on project to enhancement the rigid pavement performance under heavy load vehicle using Carbon Nano Tube (CNT).
- ❖ Member of research group between Nahda university and Minia university working on project to enhancing the resistance of asphalt pavement to fatigue and rutting distresses appearance.
- ❖ Senior of teaching assistant at civil engineering department, NUB, Egypt from 2015 till now.

## **APPRECIATION CERTIFICATES**

- ❖ Appreciation Certificate "Best Teaching Assistant in Civil Engineering Department" 2016-2017" from Faculty of Engineering, Nahda University.
- ❖ Appreciation Certificate from NAQAA: National Authority for Quality Assurance and accreditation of Education, EGYPT.
- ❖ Appreciation Certificate from Univesiti Malaysia Perlis as a Supervisor for Student mobility program 2017, Malaysia.

## **CONFERENCES, WORKSHOPS AND SEMINARS**

- ❖ The first International Civil Engineering Conference in Fayoum University 2-5 January 2013, Fayoum, Egypt.
- ❖ Conference on The Development of University Education in The Arab and Islamic World in the era of Globalization, 23-24 February 2015, Triumph Hotel, Cairo, Egypt.
- ❖ Student Mobility Program 2017 at Universiti Malaysia Perlis, 17-30 August 2017, perlis, Malaysia.
- ❖ accepted and granted a scholarship for attending a course "Forecast Engineering" at buahaus summer school, 16-28 August 2019, Bauhaus-Universität Weimar, Germany.
- ❖ Student Mobility Program 2019 at University of liverpool, 1-15 Novembert 2019, perlis, England.

## **LIST OF PUBLICATION**

- ❖ RADWAN M , , HASHEM M . Reducing Carbon Emissions by Re-Planning Roads for resisting climate change. Journal of Advanced Engineering Trends, 2022. (under review)
- ❖ RADWAN M , ABO-HASHEMA M , FAHEEM H , HASHEM M . Modeling Pavement Performance Based on LTPP Database for Flexible Pavements. Teknik Dergi. 2020; 31(4).
- ❖ Radwan M.M., Abo-Hashema M.A., Faheem H.P., Hashem M.D. (2020) ANN-Based Fatigue and Rutting Prediction Models Versus Regression-Based Models for Flexible Pavements. In: Badawy S., Chen DH. (eds) Recent Developments in Pavement Engineering. GeoMEast 2019. Sustainable Civil Infrastructures. Springer, Cham.
- ❖ Invitation – Speaker and presenting a paper "Application of Geographic Information Systems in Pavement Maintenance Activities" - The First Annual International Conference on Science, Technology and Entrepreneurship - 19 December 2018, Benisuef, EGYPT.
- ❖ Invitation – Speaker and presenting a paper "Development of Distress Prediction Models for Flexible Pavements using LTPP for Main Roads in Egypt" - The Seventeenth Annual International Conference on Highways and Airport Pavement Engineering, Asphalt Technology, and Infrastructure - 21-22 February 2018, Liverpool, England.
- ❖ Invitation – Speaker and presenting a paper "Utilization of Geographic Information Systems in Pavement Maintenance Activities" - The Fourteenth Annual International Conference on Highways and Airport Pavement Engineering, Asphalt Technology, and Infrastructure - 11-12 February 2015, Liverpool, England.

## **VOLUNTEER WORK**

- ❖ reviewer for the Journal of Transportation Engineering, Part B: Pavements.
- ❖ Organize student training to Liverpool university, England, 2019.
- ❖ Organize a mobility program to UniMap University, Malaysia, 2017.
- ❖ Helping post graduate student to achieve their master researches.