

# CURRICULUM VITAE

**Dr. Ira Raveh**

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ORT Braude College, Department of Teaching and General Studies,  
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## **1. Academic Education**

Ph.D. 2012, Mathematics Education, Technion – Israel Institute of Technology, Haifa, Israel.

M.Sc. 2005, Mathematics Education, Technion – Israel Institute of Technology, Haifa, Israel.

B.Sc. 2002, Mathematics Education, Technion – Israel Institute of Technology, Haifa, Israel.

## **2. Academic Employment**

2012 – present      Lecturer, ORT Braude College, Teaching and General Studies Department

2010 – present      Lecturer, Oranim - Academic College of Education, Faculty of Education, Track of Mathematic Education

2011 – 2013        Lecturer, Gordon College of Education, Track of Mathematic Education

## **3. Academic Activities**

### **3.1 Research Interests**

- Learning and teaching mathematics
- Mathematical knowledge for teaching
- Transforming engineers into math teachers
- Mathematical understanding and thinking

### **3.2 Research Collaboration**

- Knowledge for mathematics teaching, with Prof. Boris Koichu, Dr. Irit Peled and Prof. Orit Zaslavsky, Technion and Haifa University.
- Transforming Engineers into Math Teachers: The development of a math teacher professional identity, with Dr. Orna Muller, Teaching dept., OBC
- Mathematical and Engineering Understanding: the Perspective of Engineering students, with Dr. Elena Trotskovsky and Dr. Nissim Sabag, Teaching dept., OBC

- From Engineering to Mathematics teaching: Initial Views of Mathematical Understanding, with Dr. Yael Furman Shaharabani, Teaching dept., OBC

### **3.3 Teaching Experience**

#### **ORT Braude College of Engineering:**

##### **Teaching and General Studies Department:**

###### **Undergraduate Courses:**

Technique, Mathematical understanding and what's between them

Methodic of teaching Algebra

Methodic of teaching Geometry

Topology for mathematic teachers

Selected topics in mathematics

Teaching of mathematically gifted students

Micro Teaching

Assisting students in their practical experience in teaching mathematics.

#### **Gordon College of Education – Track of Mathematic Education:**

###### **Undergraduate Courses:**

Probability

Analytic Geometry

Mathematics in every-day life

#### **Oranim, Academic College of Education, Faculty of Education, Track of Mathematic Education:**

###### **Undergraduate Courses:**

Integration of Computer in Teaching Mathematics

Word Problems – Methods of Solution

Seminarion in Math Education

Geometry and Arithmetic

Basics of Algebra

Statistics and Data Analysis

Probability

Groups and Numbers

Basics of Plane and Space Geometry

#### **Technion, the Pre-Academic Education Center:**

Mathematics teacher grades 7-12, in the framework of the TELEM Project, preparation for matriculation grades 10-12 (3, 4, 5 study units).

**Technion, Faculty of Mathematics:**

Assistant in the course of "Differential Equations"

**Technion, Faculty of Industrial Engineering and Management:**

Assistant in the course: "Statistic Methods in Engineering"

**Technion, The Department of Education in Technology and Science:**

Assistant in the courses: "Proofs and Reasoning in Learning Mathematics", "Teaching Geometry in Middle School"

**Technion – Faculty of Mathematics**

Assistant in the courses: "Differential Equations", "Ordinary Differential Equations H".

**Ministry of Education, Irony Hey High School, Haifa:**

Mathematics teacher grades 9-12, preparation for matriculation grades 10-12 (3, 4, 5 study units).

**4. Academic and Professional Awards**

2002 Dean's list upon graduating B.Sc.

2003 Gutwirth Prize for excellence in Graduate Research, Technion–Israel Institute of Technology, Haifa, Israel

**5. Academic and Administrative Activities**

2012 – present: coordinator of the "Qualification of Engineers as Math Teachers" track

2013 - present: Member of Teaching and General Studies dept. Teaching Committee

2013 - present: M.Teach. (Master degree in Engineering Education) program Steering Committee member

2012 - Curriculum development of Mathematics Teaching Preparation Program for Engineers (with Dr. Orna Muller. Ministry of Education approval)

2013-2014: Member of Committee for Promoting Learning and Student's Advancement

2014 - present: Member of Committee for Promoting Instruction and Lecturer's Advancement

**6. Professional Activities**

2013– present Developing and lecturing in national advanced studies for teachers of mathematics: "Teaching of Geometry" – PISGA (Center for the development of teaching staff) Netanya, "Teaching of Mathematics for students with mathematics difficulties" - PISGA Haifa.

2012 Technion – The Department of Education in Technology and Science.

	Developing and lecturing in national advanced studies for teachers of mathematics "Planning teaching units with integration of IT" – PISGA Haifa, and PISGA Motzkin.
2008-2012	Lambda Company – Educational initiatives.  Company's training coordinator, responsible for the advanced studies of instructors and teachers of Elementary and Middle schools, developing instruction and learning material for a new program in Middle Schools.
2008-2012	Ministry of Education and the Technion – "a program for promoting excellence in mathematics".  Regional project advisor in Qrayot and the central area of the country.
2007-2008	Ministry of Education - Irony Hey High School, Mathematics teacher grades 9-12.
2007-2008	Lambda Company – Educational initiatives.  Professional assistant and instructor of Mathematics teachers in the elementary schools in Haifa and the North.

## **7. List of Publications**

### **7.1 Ph.D. Thesis:**

Thesis advisors: Prof. B. Koichu, Prof. O. Zaslavsky, Dr. Irit Peled.

Ph.D. thesis: Teachers' Knowledge of the Interconnections between the Elementary Algorithms of the Four Basic Arithmetic Operations and their Underlying Mathematical Principles.

Technion, Israel

### **7.2 Refereed Papers**

Raveh, I., Koichu, B., Peled, I. & Zaslavsky, O. (accepted for publishing). Four (algorithms) in one (bag): An integrative framework of knowledge for teaching the standard algorithms of the basic arithmetic operations. *Research in Mathematics Education*.

Raveh, I. & Koichu, B. (2014). Mathematical knowledge for teaching of the elementary algorithms of the four basic arithmetic operations. Mispar Hazak 2000 (in Hebrew).

### **7.3 Conference Proceedings and Abstracts**

1. Raveh, I., Trotskovsky, E. & Sabag, N. (2015). Mathematical vs. Engineering Understanding: Engineering Students' Perceptions. International Conference on Engineering Education ICEE – 2015. Zagreb, Croatia, July, 2015.
2. Raveh, I., Trotskovsky, E. & Sabag, N. (2015). Mathematical vs. Engineering Understanding: Engineering Students' Perceptions (work in progress). The 11th ORT Braude College Interdisciplinary Research Conference, Hagoshrim.
3. Raveh, I. & Muller, O. (2014). Transforming engineers into math teachers: Students' and graduates' perceptions of the program. The 10th ORT Braude College Interdisciplinary Research Conference, Nahariya.

4. Raveh, I. & Koichu, B. (2013). A reference framework for teaching the standard algorithms of the four basic arithmetic operations: From theoretical analysis to task design. CERME8, Turkey.
5. Raveh, I. (2013). Mathematical knowledge for effective teaching and learning: The case of four algorithms. The 9th ORT Braude College Interdisciplinary Research Conference, Hagoshrim.
6. Raveh, I. (2011). Mathematics knowledge for teaching the Standard Algorithms. The National conference of Mathematics Education. Levinsky College of Education, Tel Aviv.
7. Raveh, I. (2009). Didactic variables as a tool for adapting word problems to various levels and populations. The national conference of Mathematics Education. Kibbutzim College of Education, Tel Aviv.
8. Raveh, I. (2006). Teachers' knowledge on the topic of the Standard Algorithms. The 7th Seminar for Ph.D. Students of Mathematics Education, Science and Technology, Nir Etzion.

#### **7.4 Submitted for publication**

#### **7.5 In preparation**

Raveh, I. (in preparation). The Story of One Task – Translating the Algorithms into Horizontal Representation.

#### **7.6 Text Books and Learning & Teaching Resource Material**

1. Development of a unique study unit, in the framework of conducting a research at the Department of Education in Technology and Science, Technion.
2. Development and writing chapters in Mathematics study books "Ten Square" for Middle School according to the new curriculum of the Ministry of Education, in the framework of my work at Lambda Company.
3. Development and writing study material in Mathematics for excelling students, in the framework of my work at Lambda Company.