

## **CURRICULUM VITAE**

### **Dr. Emil D. Schwab**

Professor of Mathematics / Department of Mathematical Sciences

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#### **EDUCATION**

**Ph D**, University "Babes-Bolyai" of Cluj-Napoca", Romania, (1995), Major: Mathematics  
Thesis Title: "Contribution to the Study of Multiplicativity and Additivity in Incidence Algebras"

**Licentiate** in Mathematics, West University of Timisoara, Romania, (1987), Major: Mathematics  
Thesis Title: "Inverses in Special Categories".

#### **POSITIONS**

- **Academic:**

*Professor*, UTEP, Dept. of Mathematical Sciences (09/2013 – present)

*Associate Professor*, UTEP, Dept. of Mathematical Sciences (09/2007 – 08/2013)

*Assistant Professor*, UTEP, Dept. of Mathematical Sciences (09/2001 – 08/2007)

*Associate Professor*, Univ. of Oradea, Romania, Dept. of Math.( 09/1996 – 08/2001)

*Assistant Professor*, Univ. of Oradea, Romania, Dept. of Math. (09/1990 – 08/1996)

- **Administrative:**

*Associate Dean for Research* , College of Sciences, UTEP (10/2014 – 08/2015)

*Assistant Dean - Scientific Coordinator*, College of Sciences, Univ. of Oradea, Romania (09/1996 – 08/1998)

*Vice-Chairman*, Dept. of Mathematics, Univ. of Oradea, Romania (09/1996 – 08/1998)

*Vice-Chairman of the Board of the Mathematics Association Olympus SNC*", Romania (09/1991 – 08/1992)

#### **STRATEGIC INITIATIVE as Associate Dean for Research, College of Science, UTEP**

Objective: Support existing and develop new mechanisms for increased faculty and student capacity in research and scholarship

**#1:** Increase research funding and productivity by supporting multidisciplinary projects, new cross-department collaborations and junior faculty research

### Activities/Projects:

1. Renew RFP for Multidisciplinary Pilot Projects and Collaborations following successful first launch in 2013 for encouraging and enhancing cooperative research efforts among faculty members and fostering collaborative research within the college and university (15 multidisciplinary research projects submitted involving more than 40 faculty as PIs and CoPIs and five projects involving 17 faculty from all CoS Departments, supporting new multidisciplinary collaborations were awarded).
2. Encourage funded pilot project teams to apply for external funding
3. Assist junior faculty with proposal development and submission ( the Multidisciplinary Pilot Projects Program included “Junior Faculty Applicant” as a competitive preference priority and three of the five awarded projects were led by junior faculty).
4. Work with ORSP and Institutional Advancement to facilitate and assist faculty with funding opportunities, grant proposal writing, access to resources and capabilities as well as proposal submission (CFR workshop/presentations for CoS on private grants / April 7).

### Outcomes:

1. Increased collaborative partnerships
2. Increased competitive grant applications involving multi-investigator teams
3. Increase in scholarly works (e.g., publications, presentations)
4. Alignment of ORSP and researcher activities

### **#2: Enhancing research participation of graduate student**

### Activities/Projects:

1. Support and stimulate effective research collaboration between graduate students and faculty by implementing the “Graduate Student-Faculty Research Fellowship” internal funding program
2. Encourage and assist faculty/student teams with project development and submission of fellowship applications. Actively search for graduate student funding opportunities.

### Outcomes:

1. Improved mentoring and financial support for graduate students. Increased student participation in research.
2. Increased internal and external applications for graduate student funding. Information on recent RFAs provided to students

### **#3: Foster development of cross-department, cross-college and inter-institutional collaboration**

### Activities/Projects:

1. Gather faculty research interest data, research profiles of CoS faculty published on Expertize Connector.
2. Identify large funding opportunities such as the NIH T32 mechanism. Monthly communication with ORSP through Research Council to receive information on RFAs .
3. Identify departments, colleges, and teams for funding opportunities
4. Promote multidisciplinary projects and partnerships involving College of Science faculty and non-university faculty members. The Multidisciplinary Pilot Projects and Collaborations Program included new research collaborations and extramural partnership as a competitive preference priority.

### Outcomes:

1. Research faculty database in conjunction with Expertise Connector
2. Information on relevant RFAs provided to faculty
3. Increased communication and strategic planning for large applications

4. Active team-building and identification of external partners (e.g., NIH, national labs, RTRN)

**#4: Improve communication about research opportunities**

**Activities/Projects:**

1. Promote college wide seminars and colloquia in order to foster new interdepartmental collaborations.  
Coordinated, posted and distributed a weekly seminar/colloquium announcement with the talks in all CoS departments.
2. Utilize UTEP and other media sources (internal and external) to disseminate research activities, achievements and opportunities, including a CoS e-newsletter and BBRC e-newsletter.

**Outcomes:**

1. CoS website as central location for seminars and colloquia developed to maximize communication.
2. Increased community engagement, improved alumni relationships, and recruitment of future scientific and business partners

**PROFESSIONAL MEMBERSHIPS**

(2011 – present) National Alliance for Doctoral Studies in the Math. Sci. / Alliance Mentor

(2002-2006) American Mathematical Society / member

(1996 – 2001) PAMM- Pannonian Applied Mathematics Meeting-Interuniversity Network, Hungary / member

(1996 – 2001) ROMAI - Romanian Society of Applied and Industrial Mathematics / Member

**EDITORIAL ACTIVITY, REVIEWER, REFEREE**

Member of Editorial Board - Romanian Journal of Math. and Comp. Science

Member of Editorial Board - Annals of "Tibiscus" University, Computer Science Series

Reviewer - Mathematical Reviews

Referee - Hiroshima Mathematical Journal, Journal of Number Theory, Discrete Mathematics, SpringerPlus

Managing Editor (1996 – 1998) - Annals of University of Oradea - Math.

**CONFERENCE/WORKSHOP ORGANIZER/CHAIR**

(2010) Mathematical Association of America, MathFest 2010, Pittsburg / Conference Section Organizer

(2010) XA2010 "European Conference on Computer Sciences & Applications", Romania / Program Organizer

(2007-10) PLTL-SI Leader Program, UTEP / Workshop Organizer

(2008) CombinaTexas 2008: Combinatorics in the South-Central U.S., UTEP, / Conference Chair

(2004) International Conference on Computers and Communications – Computational Math. Section, ICCC 2004 – Romania / Member of the Program Committee

(1997) CAIM'97, International Conf. of Appl. Math CAIM'97, Romania / Member of the Conference Committee

(1996) CAIM'96, The 4-th Conference on Applied and Industrial Math., Moldova-Romania / Member of the Conference Committee

(1993) The 104-th PAMM-Conference, Hungary / Member of the Conference Committee

## TEACHING

Program Director for the UTEP-EPCC MSEIP Cooperative Project (2008-2011)

Program Director for the Calculus Supplemental Instruction Program (2005 -2008)

Program Director for the PLTL program for Precalculus (2007-2008)

Coordinator of Peer-Leaders and SI leaders (graduate and undergraduate students)(2005-2011)

Undergraduate Advisor (2002 – 2009)

Graduate Advisor (2009 – 2012)

Undergraduate courses taught: Abstract Algebra, Linear Algebra, Elementary Number Theory, Geometry, Discrete Mathematics, Applied Math., Principles of Mathematics, Calculus, Mathematics Education.

Graduate courses taught: Abstract Algebra, Special Topics in Algebra, Number Theory, Combinatorics.

## DIRECTED STUDENT LEARNING

Graduate Theses Directed: 10 Theses for MS and/or MAT in Math at University of Oradea  
6 Theses for MS and/or MAT in Math at UTEP

### MASTER THESES DIRECTED (UTEP)

Faculty Role	Student Name	Thesis Title	Student Dept.	Degree	Stage of Completion
Master's Thesis Committee Chair	Villarreal, Juan	Generalizations of Dirichlet Convolution	Mathematical Sciences	MS	Completed May 2013
Master's Thesis Committee Chair	Macedo, Alexandra	Inverse Semigroups and Inverse Categories	Mathematical Sciences	MS	Completed July 2012
Master's Thesis Committee	Liao, Yi-Yu	Incidence Functions	Mathematical Sciences	MS	Completed May 2010

Chair					
Master's Thesis Committee Chair	Agut, Ioana Ecaterina	Generalization and Analogy in Geometry	Mathematical Sciences	MAT	Completed May 2007
Master's Thesis Committee Chair	Romero, Efren	Division Categories and Inverse Semigroups	Mathematical Sciences	MS	Completed January, 2006
Master's Thesis Committee Chair	Cossio, David	Dirichlet Product of Arithmetical Functions	Mathematical Sciences	MS	Completed July, 2002

MASTER'S THESES COMMITTEE MEMBER (UTEP)

Faculty Role	Student Name	Thesis Title.	Student Dept.	Degree	Stage of Completion
Master's Thesis Committee Member	Bosse, Courtney	Size-Dependent Transitions in Grafted Polymer Brushes	Physics	MS	Completed July 2013
Master's Thesis Committee Member	Tabib, Khadiga	The Topology of Statistical Convergence	Mathematical Sciences	MS	Completed July 2012
Master's Thesis Committee Member	Delgado, Adrian	Lifting and Wavelets	Mathematical Sciences	MS	Completed May 2012
Master's Thesis Committee Member	Fawaz, Zahi	The Isomorphisms Between the Upper and Lower Triangular Matrix Algebras	Mathematical Sciences	MS	Completed May 2011
Master's Thesis Committee Member	Persis, Beaven	Metaphors, Metonymies Modes and Linear Algebra	Mathematical Sciences	MAT	Completed May 2011
Master's Thesis Committee Member	Zamora, Azucena	Use of Cognitive Constructs in Linear Algebra	Mathematical Sciences	MAT	Completed May 2010
Master's Thesis Committee Member	Aguirre Holguin, Valeria	Signature Matrices: The Eigenvalue Problem	Mathematical Sciences	MS	Completed on May 2010
Master's Thesis Committee Member	Vargas, Ivan	A Characterization of Pseudo-Order in $Z_n$	Mathematical Sciences	MS	Completed December 2009
Master's Thesis Committee Member	Oscar Calvo	Polarization Model for the Hydration Forces	Physics	MS	Completed May 2007

Master's Thesis Committee Member	Magoc, Tanja	Lattice orders on 3x3 matrix algebras	Mathematical Sciences	MS	Completed May 2002
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## RESEARCH TOPICS

- Quantum Logic and Categorical Logic
- Algebraic Combinatorics – Theory of Möbius Function – Combinatorics on Words
- Number Theory – Arithmetic Functions
- Algebraic Structures – Inverse Semigroups – Special Categories
- Other: Fuzzy Sets  
Topology  
Problem Solving/Heuristic Strategies

## GRANTS

### AWARDED GRANTS

Schwab, Emil D (Principal), Knaust, Helmut (Co-Principal), *Cross Institutional Implementation of Supplemental Instruction - MSEIP Cooperative Project (EPCC-UTEP)*, "US Dept. of Education, (October 1, 2008 - September 30, 2011), \$479,202.00.

Schwab, Emil D (Principal), Knaust, Helmut (Co-Principal), Nancy Marcus (Co-Principal), *Modular Development and Supplemental Instruction (SI) for the Calculus Course taken by all STEM Majors*, U.S. Dept. of Education, P120A050046, ( October 1, 2005 – September 30, 2009), \$ 299,783

### PARTICIPATION IN OTHER GRANTS

Program Coordinator ( October 1, 2007 – September 1, 2008), *An Integrative Science Success, Teaching and Retention Program for STEM Education*, NSF – STEP program, DUE0653270, PI: Benjamin Flores

## PUBLICATIONS

### JOURNAL ARTICLES PUBLISHED:

- [1] Schwab, E. D., (2015). A Half-Factorial Locally Right Garside Monoid and the Inverse Monoid of Cofinite Monotone Partial Bijections on  $N^*$ . *Semigroup Forum, Springer, online first (May 2015)*(DOI 10.1007/s00233-015-9727-z).
- [2] Schwab, E. D., Schwab, G., (2015). A Mobius Arithmetic Incidence Function. *Notes on Number Theory and Discrete Mathematics*, 21(3), 27-34.

- [3] Schwab, E. D., (2015). Mobius monoids and their connection to inverse monoids. *Semigroup Forum*, Springer, 90(3), 694-720.
- [4] Schwab, E. D., Schwab, E., (2015). On Inverse Categories with Splitting Idempotents. *Archivum Mathematicum*, 51(1), 13-25.
- [5] Schwab, E. D., Bede, B. (2014). A Note on a Broken Dirichlet Convolution. *Notes on Number Theory and Discrete Mathematics*, 20(2), 65-73.
- [6] Schwab, E. D., (2013). Dirichlet Convolution, Bicyclic Semigroup and the Breaking Process. *Int. Journal of Number Theory*, 9 (8), 1961-1972
- [7] Schwab, E. D., (2013). Inverse Semigroups Generated by Group Congruences. The Möbius Function. *Algebra and Discrete Mathematics*, 16 (1), 116-126.
- [8] Schwab, E. D., (2013). The Reduced Clifford Category of the Kachel Semigroup on n Letters. *Journal of Algebra and its Applications*, 12 (1), 1250134 1-9.
- [9] Schwab, E. D., (2012). Lawvere intervals and the Möbius function of a Möbius category. *Discrete Mathematics and Applications*, 22 (5-6), 545-554.
- [10] Schwab, E. D., (2012). The Free Monogenic Inverse Semigroup and the Bicyclic Multiplication. *Annales des Sciences Mathématique du Québec*, 36 (1), 235 - 243.
- [11] Schwab, E. D., Schwab, E., (2012). Quantum Logic, Dagger Kernel Categories and Inverse Baer\*-Categories. *Order / Springer*, 29 (3), 405-417.
- [12] Schwab, E. D., (2011). Binary Matrices as Morphisms of a Triangular Category. *Journal of Combinatorics and Number Theory.*, vol 3 ( no.2), 113–122.
- [13] Schwab, E. D., Stoianov, G.\*, (2011). A Dirichlet Analogue of the Free Monogenic Inverse Semigroup via Mobius Inversion. *Rocky Mountain Journal of Mathematics*, vol 41 ( no.5), 1701 - 1710.
- [14] Schwab, E. D., Macedo, A.\*, (2011). Maximal Elements and their Group-Like Set. *Annals. Computer Science Series, Tibiscus University*, vol 9 (no.1), 107-114.
- [15] Schwab, E. D., (2010). On Fibonacci and Thue-Morse Words. *Journal of Automata, Languages and Combinatorics*, vol 15 (no.3/4), 285-295.
- [16] Schwab, E. D., (2010). Generalized Arithmetical Functions of Three Variables. *Int. Journal of Number Theory*, vol.6 (no.7), 1689-1699.
- [17] Schwab, E. D., (2010). On Incidence Algebras of Combinatorial Inverse Monoids. *Communications in Algebra*, vol.38 (no.5), 1779-1789.
- [18] Schwab, E. D., (2009). The Möbius Category of a Combinatorial Inverse Monoid with Zero. *Annales des Sciences Mathématiques du Québec*, vol.33 (no.1), 93-113.
- [19] Schwab, E. D., (2009). A Partial Order on Bipartite Graphs with n Vertices. *Annals. Computer Science Series, Tibiscus*, vol 7 (no.1), 315-324.
- [20] Schwab, E. D., Bede, B., Nobuhara, H., Rudas, I.J., (2009). Approximation by Shepard Type Pseudo-Linear Operators and Applications to Image Processing. *Int. Journal of Approx. Reasoning, Elsevier*, 50, 21-36.

- [21] Schwab, E. D., Haukkanen P., **(2008)**. A Unique Factorization in Commutative Möbius Monoids. *Int. Journal of Number Theory, World Scientific, vol.14* (no.4), 549-561.
- [22] Schwab, E. D., Mendez, O., Popescu, L., **(2008)**. Inner Separation Structures for Topological Spaces. *Balkan Journal of Geometry and its Appl, vol 13* (no.2), 59-65.
- [23] Schwab, E. D., **(2008)**. Strictly Increasing Sequences of Integers and the Möbius Inversion Formula. *JP J. of Algebra, Number Th.& Appl., vol 11* (no.1), 1-14.
- [24] Schwab, E. D., **(2008)**. The Möbius Category of a Semilattice of Groups. *Italian Journal of Pure and Appl. Math, 24*, 121-134.
- [25] Schwab, E. D., Romero E.\*, **(2006)**. On the Combinatorial Inverse Monoid  $IO_3$ . *Anale Univ. Tibiscus, vol.4* (no 1), 213-227.
- [26] Schwab, E. D., Romero E.\*, **(2005)**. Abstract Möbius-Division Categories are Reduced Standard Division Categories of Combinatorial Inverse Monoids. *Anale Univ. Tibiscus, vol.3* (no.1), 21-29.
- [27] Schwab, E. D., **(2004)**. Characterizations of Lambek-Carlitz Type. *Archivum Mathematicum, vol.40* (no.3), 295-300.
- [28] Schwab, E. D., **(2004)**. Möbius Categories as Reduced Standard Division Categories of Combinatorial Inverse Monoids. *Semigroup Forum, Springer-Verlag, 69*, 30-40.
- [29] Schwab, E. D., **(2004)**. The Möbius Category of Some Combinatorial Inverse Semigroups. *Semigroup Forum, Springer-Verlag, 69*, 41-50.
- [30] Schwab, E. D., **(2003)**. On Triangular Categories. *Houston Journal of Mathematics, 29* (no.1), 25-40.
- [31] Schwab, E. D., Schwab, E., **(2002)**. The Inverse Baer-Category of a Chain, *Radovi Matematicki, 11*, 7-11.
- [32] Schwab, E. D., Silberberg, G., **(2001)**. The Valuated Ring of the Arithmetical Functions as a Power Series Ring. *Archivum Matematicum, vol.37* (no.1), 77-80.
- [33] Schwab, E. D., Silberberg, G., **(2000)**. A Note on Some Discrete Valuation Rings of Arithmetical Functions. *Archivum Matematicum, vol.36* (no.2), 103-109.
- [34] Schwab, E. D., Silberberg, G., **(1999)**. Bemerkungen mit bezug auf die Anzahl der zyklischen Untergruppen von gegebener Ordnung im Falle einer endlichen Gruppe. *Bul. St.of Univ. "Politehnica" - Timisoara, 44* (58) (1), 1-6.
- [35] Schwab, E. D., **(1999)**. Characterization of A-Multiplicative Functions via the Haukkanen's Functions,. *Journal of Natural Sciences and Mathematics, vol. 39* (no.1), 1-5.
- [36] Schwab, E. D., **(1998)**. Complete Multiplicativity and Complete Additivity in Möbius Categories. *Italian Journal of Pure and Applied Math., 3*, 37-48.
- [37] Schwab, E. D., Silberberg, G., **(1998)**. Über die Anzahl der zyklischen Untergruppen gegebener Ordnung im Falle einer endlichen Gruppe. *Nieuw Archief voor Wiskunde, (IV), vol.16* (no.3), 143-151.
- [38] Schwab, E. D., Silberberg, G., **(1997)**. Aplicatii ale teoriei numerelor in studiul grupurilor finite (Applications of Number Theory in the Study of Finite Groups). *Seminar Arghiriade / Univ.of Timisoara, 28*, 1-22.



- [39] Schwab, E. D., Schwab, E., **(1996)**. Multiplicativitate dans les Categories de Möbius. *Bull. for Appl Math./Budapest*, 147-164.
- [40] Schwab, E. D., **(1996)**. Regular Convolutions and A-Additive Arithmetical Functions. *Pure Math and Appl.*, vol.7 (no.1-2), 183-190.
- [41] Schwab, E. D., **(1995)**. Dirichlet Product and Completely Additive Arithmetical Functions. *Nieuw Archief voor Wiskunde, Vierde serie Deel/Amsterdam*, vol.13 (no.2), 187-193.
- [42] Schwab, E. D., **(1994)**. On a Completely Additive Incidence Functions. *Pure Math. and Appl.*, vol.5 (no.2), 201-204.
- [43] Schwab, E. D., **(1994)**. On Completely Multiplicative Incidence Functions in Triangular Categories, *Analele Univ. Oradea*, vol 4, 30-32.
- [44] Schwab, E. D., **(1993)**. On Regular Convolutions, *Analele Univ. Oradea*.vol 3, 16-21.
- [45] Schwab, E. D., **(1993)**. Multiplicative and Additive Elements in the Ring of Formal Power Series, *Pure Math and Appl.*,vol 4, (no.3), 339-346.
- [46] Schwab, E. D., **(1992)**. Completely Additive Incidence Functions , *Analele Univ. Oradea*.vol 2, 124-127.
- [47] Schwab, E. D., **(1991)**. Completely Additive and Discriminative Convolutions, *Analele Univ. Oradea*.vol 1, 143-148.
- [48] Schwab, E. D., Schwab, E., **(1990)**. Total Additivity and Summation Function. *Seminar Arghiriade/Univ. of Timisoara*, 25, 1-7.
- [49] Schwab, E. D., Toth, L., **(1990)**. On Some Elementary Number Theoretic Inequalities Involving the Dirichlet Convolution. *Seminar Arghiriade/Univ. of Timisoara*, 24, 1-5.
- [50] Schwab, E. D., **(1989)**. Asupra functiei de sumare a unei functii aritmetice (On the Summation Function of an Arithmetic Function). *G.M./Bucharest*, 9, 321-325.
- [51] Schwab, E. D., Schwab, E.,**(1989)**. Elements multiplicatifs d'une algebre incidente. *Seminar Arghiriade / Univ.of Timisoara*, 18, 1-27.
- [52] Schwab, E. D., Schwab, E., **(1988)**. Arithmetic Convolution. Applications in Combinatorics. *Seminar Arghiriade / Univ.of Timisoara*, 17, 1-8.
- [53] Schwab, E. D., **(1988)**. Egy szamelmeleti fuggveny osszegezo fuggvenyerol, (On the Summation Function of an Arithmetic Function). *Matematikai Lapok 11-12*, 426-429.
- [54] Schwab, E. D., Schwab, E.,**(1988)**. Produsul Dirichlet al functiilor aritmetice (The Dirichlet Product of Arithmetic Functions). *G.M. Metod/Bucharest*, 3, 120-124.

#### CONFERENCE PROCEEDINGS

- [55] Schwab, E. D., Bede, B., Rudas, I. J., Schwab, G., **(2015)**. Approximation Properties of Lukasiewicz Fuzzy Systems. *Fuzzy Information Processing Society (NAFIPS), Proceedings of the 5th World Conference on Soft Computing (WConSC), IEEE, online(DOI: 10.1109/NAFIPS-WConSC.2015.7284 188)*, 1-5.

- [56] Schwab, E. D., Villarreal J.\*, **(2012)**. The Computation of the Möbius Function of a Möbius Category. (vol. arxiv 1210.7697, pp. 1-9). *Proceeding of 2012 HUIC – Hawaii University International Conference on Mathematics and Engineering Technology*.
- [57] Schwab, E. D., Bede, B., Nobuhara, H., **(2007)**. Multichannel Image Decomposition by Using Pseudo-Linear Harr Wavelets. (VI 17-20). *Proceeding of 2007 IEEE International Conference on Image Processing, San Antonio, Texas*.
- [58] Schwab, E. D., Schwab, E., **(2002)**. Pullbacks and Pushouts in Triangular Categories. (pp. 253-260). *Proceedings of the Algebra Symposium, "Babes-Bolyai" University of Cluj-Napoca, Romania*.
- [59] Schwab, E. D., **(1996)**. Incidence Algebra of a Triangular Category and Calculus of Fractions. (abstract) (pp.171). *Combinatorics'96, Assisi, Italy*.
- [60] Schwab, E. D., **(1992)**. Definitions Equivalentes de la Multiplicativite dans les Algebras Incidentes Reduities. (pp. 109-114). *Proceedings of the Conference on Algebra, Univ 'Babes- Bolyai' of Cluj-Napoca, Romania, 18-20 Sept. 1991*.
- [61] Schwab, E. D., Schwab, E., **(1989)**. Cyclic Subgroups of the Group of Multiplicative Arithmetic Functions. (pp. 127-132). *Proceedings of the Algebra Conference, University of Brasov, Romania*.

#### OTHER JOURNAL ARTICLES (Including Not Peer Reviewed)

- [62] Schwab, E. D., **(2005)**. Characterizations of some class of formal power series via Möbius categories of full binomial type. (vol. CO/0501271 v1 18). ArXiv:math..
- [63] Schwab, E. D., **(1989)**. On the Equality  $\sigma(n) + \varphi(n) = nd(n)$ . *R.M.T.*, 20, 43-45.
- [64] Schwab, E. D., **(1987)**. Produsul Dirichlet al functiilor aritmetice. Aplicatii (The Dirichlet Product of Arithmetic Functions. Applications). *R.M.T.*, 8 (2), 15-19.
- [65] Schwab, E. D., Schwab, E., **(1986)**. Functii aritmetice multiplicative (Multiplicative Arithmetic Functions). *Caiete metodico-stiintifice / Univ. Timisoara, vol 35*
- [66] Schwab, E. D., Schwab, E., **(1986)**. Numere pitagoreice si inele factoriale (Pythagorean Numbers and Factorial Rings). *Caiete metodico-stiintifice / Univ. Timisoara, vol 36*

#### TEXT-BOOKS

- (1) Schwab, E. D., Silberberg, G., **(2003)**. Problems in Finite Group Theory. (pp. 90 pgs). Tempe, Arizona: Scholargy-Tempe.
- (2) Schwab, E. D., Schwab, E. H., **(1997)**. Algebraic Structures. Modules. Homological Methods. (pp. 201 pgs.). Crican, Romania
- (3) Schwab, E. D., **(1994)**. Algebraic Structures. Rings. (pp. 103 pgs). Multiprint, Romania