

Tony Shaska

Department of Mathematics and Statistics
Oakland University
Rochester, MI 48309

Phone: 248-370-3436 (office)
E-mail: tshaska@gmail.com
Web: [Homepage](#) [ArXiv](#) [Google Scholar](#)



Research areas

Arithmetic and algebraic geometry.

algebraic curves, moduli spaces, minimal models of curves, binary forms, decomposable Jacobians

Education

Sep. 96- March 01 **Ph.D. in Mathematics**, *The University of Florida*, Gainesville, FL.

Thesis: Curves of genus two covering elliptic curves

Jan. 92 - Dec. 94 **Bachelor of Science, Mathematics**, *University of Michigan*, Highest Distinction.

Major: Mathematics; Minor: Computer Science

Work Experience

Aug. 08 - present **Associate Professor**, *Department of Mathematics and Statistics*, Oakland University, Rochester, MI.

Aug. 05 - Aug. 08 **Assistant Professor**, *Department of Mathematics and Statistics*, Oakland University, Rochester, MI.

Aug. 03 - Jun. 05 **Assistant Professor**, *Department of Mathematics*, University of Idaho, Moscow, ID.

Aug. 01 - June 03 **Visiting Assistant Professor**, *Department of Mathematics*, University of California–Irvine, Irvine, CA.

Jan. 95 - Aug. 96 **Programer/Consultant**, *Computer Business Solutions Inc.*, Farmington Hills, MI.

Projects in Farmington Hills, Detroit, and Columbus

Grants

2014 **Nato Advanced Study Institute**, Arithmetic of hyperelliptic curves, Ohrid, Macedonia, €85 200.

2012 **National Security Agency**, East Coast Algebra Day and MCAG, Oakland University.

2012 **Office of Provost**, *Michigan Computational Algebraic Geometry*, MCAG 2012, Oakland University.

2007-10 **National Science Foundation**, *REU*, Oakland University, \$342 899, PI–Jack Nachman.

2008 **Nato Advanced Study Institute**, New challenges in digital communications, Vlora, Albania €80 000.

2007 **National Science Foundation**, Applications of Computer Algebra, ACA 2005, Oakland University.

2005 **National Security Agency**, *Computational Aspects of Algebraic Curves*, University of Idaho, Moscow, ID..

2004 **National Science Foundation**, *NSF-Epscor S0-511*, University of Idaho, Moscow, ID, \$15 000.

2000 **Deutsche Forschungsgemeinschaft**, *Friedrich-Alexander-Universität Erlangen-Nürnberg*, DM 24000.

Long term visits

Winter 15 **Princeton University**, *Sabbatical*, Department of Mathematics, Princeton, New Jersey.

Summer 12 **University of Pristina**, *Pristina*, Kosova.

Winter 08 **University of Vlora**, *Sabbatical*, Vlora, Albania.

Summer 07 **Maria Curie-Sklodowska University**, *Lublin*, Poland.

Summer 06 **Institut für Experimentelle Mathematik**, *Essen*, Germany.

Summer 03 **Institut für Experimentelle Mathematik**, *Essen*, Germany.

Summer 01 **Institut für Experimentelle Mathematik**, *Essen*, Germany.

Jan.-Aug. 00 **Universität Erlangen-Nürnberg**, *DFG Fellowship*, Germany.

Fall 99 **Mathematical Sciences Research Institute**, *Berkeley*, Galois Groups and Fundamental Groups.

June 99 **Institute for Advanced Study/Park City Institute**, *Arithmetic Geometry*, Park City, Utah.

Summer 99 **IWR**, *University of Heidelberg*, Heidelberg, Germany.

Editorial

Editor for volume proceedings

- 2016 **Algebraic curves and their fibrations in mathematical physics and arithmetic geometry**, *Contemporary Mathematics*, American Mathematical Society, Providence, RI, A. Malmendier, T. Shaska (Eds.).
- 2015 **Advances on superelliptic curves and their applications**, *NATO Science for Peace and Security Series - D: Information and Communication Security*, Vol 41. IOS Press, Amsterdam, 2015, viii+388 pp, ISBN: 978-1-61499-519-7, L. Beshaj, T. Shaska, E. Zhupa (Eds.).
- 2009 **Algebraic Aspects of Digital Communications**, *NATO Science for Peace and Security Series, D: Information and Communication Security*, Vol. 24. IOS Press, Amsterdam, 2009. viii+285 pp, ISBN: 978-1-60750-019-3, T. Shaska (Ed).
- 2007 **Advances in coding theory and cryptology**, *Series: Coding Theory and Cryptography*, Vol. 3, World Scientific Publishing, xii+256 pp, ISBN: 978-981-270-701-7; 981-270-701-8, T. Shaska, W. C. Huffman, D. Joyner, V. Ustimenko (Eds).
- 2005 **Computational aspects of algebraic curves**, *Lecture Notes in Computing Series*, World Scientific, vol. 13, (2005), 288pp, ISBN 981-256-459-4, T. Shaska (Ed).
- 2005 **Progress in Galois Theory**, *Proceedings of J. Thompson's 70-th birthday*, Springer Series: Developments in Mathematics, Vol. 12, 168 pp, ISBN: 0-387-23533-7, H. Völklein, T. Shaska (Eds.).

Editor for special issues of journals

- 2013 **Computational algebraic geometry and its applications**, *Appl. Algebra Engrg. Comm. Comput.*, Vol. 24, 1-98, 2013.
- 2013 **Computational Algebraic Geometry**, *J. Symbolic Comp.*, Vol. 57, October 2013, 1-78.
- 2010 **Applications of Computer Algebra**, *Albanian J. Math.*, Vol 4, No 4 (2010).
- 2008 **New challenges in digital communications**, *Albanian J. Math.*, Vol 2, No 3 (2008).
- 2007 **Computational Algebraic Geometry**, *Albanian J. Math.*, Vol 1, No 4 (2007).
- 2007 **Coding theory and cryptography**, *Serdica J. Comput.*, Vol. 1, No. 2, 2007.

Selected Publications

- **On generalized superelliptic Riemann surfaces**, (*submitted*), (with R. Hidalgo, S. Quispe).
- **Rational points on the moduli space of genus two**, (*submitted*), (L. Beshaj, R. Hidalgo, A. Malmendier, S. Kruk, S. Quispe, T. Shaska).
- **The Satake sextic in elliptic fibrations on $K3$** , (*submitted*), (with A. Malmendier).
- **A universal pair of genus-two curves**, (*submitted*), (with A. Malmendier).
- **Self-inversive polynomials, curves, and codes**, *Contemporary Math.*, 2017, (with D. Joyner).
- **On the field of moduli of superelliptic curves**, *Contemporary Math.*, (with R. Hidalgo).
- **2-Weierstrass points of genus 3 hyperelliptic curves with extra automorphisms**, *Comm. in Algebra*, 2016, (with C. Shor).
- **Genus two curves with many elliptic subcovers**, *Comm. in Algebra*, 44 (2016), Nr. 10, 4450-4466.
- **Theta functions and complete weight enumerators for codes over imaginary quadratic fields**, *Des. Codes Cryptogr.*, vol 76, 2015, 217-235. (with C. Shor).
- **Theta functions of superelliptic curves**, *Information security, coding theory and related combinatorics*, 47–69, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., 29, IOS, 2015. (with L. Beshaj, A. Elezi).
- **Weight distributions, zeta functions and Riemann hypothesis for linear and algebraic geometry codes**, *Information security, coding theory and related combinatorics*, 259–298, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., 29, IOS, 2015. (with A. Elezi).
- **Cyclic curves over the reals**, *Information security, coding theory and related combinatorics*, 59–98, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., 39, IOS, Amsterdam, 2015., (with M. Izquierdo).
- **Heights on algebraic curves**, *Information security, coding theory and related combinatorics*, 159–198, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., 29, IOS, Amsterdam, 2011., (with L. Beshaj).
- **Decomposition of some Jacobian varieties of dimension 3**, *Artificial Intelligence and Symbolic Computation*, LNCS vol. 8884, 193-204, (with L. Beshaj).
- **On Jacobians of curves with superelliptic components**, *Contemp. Math.*, vol. 29, 2014, 1–14, (with L. Beshaj, C. Shor).

- **Bielliptic curves of genus 3 in the hyperelliptic moduli**, *Appl. Algebra Engrg. Comm. Comput.*, Volume 24, 2013, 387-412, (with F. Thompson).
- **Some remarks on the hyperelliptic moduli of genus 3**, *Communications in Algebra*, 42(9), 2014, 4110–4130.
- **Quantum codes from superelliptic curves**, *Albanian J. Math.*, Vol. 5. Nr. 4, 2011, pg. 175–191, (with A. Elezi).
- **On superelliptic curves of level n and their quotients**, *Alb. J. Math.*, Vol. 5. Nr. 3, pg. 115-138, 2011, (with L. Beshaj, V. Hoxhaj).
- **The arithmetic of genus 2 curves**, *Information security, coding theory and related combinatorics*, 59–98, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., 29, IOS, Amsterdam, 2011., (with L. Beshaj).
- **Codes over rings of size p^2 and lattices over imaginary quadratic fields**, *Finite Fields Appl.*, 16 (2010), no. 2, 75–87, (with C. Shor, G. Wijesiri).
- **Genus 2 curves that admit a degree 5 map to an elliptic curve**, *Forum Math.*, 21 (2009), no. 3, 547–566, (with K. Magaard, H. Voelklein).
- **On the homogeneous algebraic graphs of large girth and their applications**, *Linear Algebra Appl.*, 430 (2009), no. 7, 1826–1837, (with V. Ustimenko).
- **Theta functions and algebraic curves with automorphisms**, *Algebraic aspects of digital communications, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur.*, 24, IOS, Amsterdam, 2009, 193 – 237, (with G. S. Wijesiri).
- **Quantum codes from algebraic curves with automorphisms**, *Condensed Matter Physics*, 2008, Vol. 11, No 2 (54), 383-396..
- **Determining equations of families of cyclic curves**, *Albanian J. Math.*, Vol 2, Nr. 3, 2008, 199-213, (with R. Sanjeewa).
- **Codes over rings of size four, Hermitian lattices, and corresponding theta functions**, *Proc. Amer. Math. Soc.*, 136 (2008), no.3, 849-857, (with G. Wijesiri).
- **Codes over F_{p^2} and $F_p \times F_p$, lattices, and theta functions**, *Advances in Coding Theory and Cryptology*, vol 3. (2007), pg. 70-80, (with C. Shor).
- **Thetanulls of cyclic curves of small genus**, *Albanian J. Math.*, vol. 1, Nr. 4, 2007, 253-270, (with E. Previato, G. Wijesiri).
- **Automorphism groups of AG-codes based on C_{ab} curves**, *Serdica J. Computing*, Vol.1, Nr. 1, 2007, 193-206, (with Q. Wang).
- **Hyperelliptic curves with reduced automorphism group A_5** , *Appl. Algebra Engrg. Comm. Comput.*, vol. 18, Nr. 1-2, 2007, pg. 3-20, (with T. Shaska).
- **Subvarieties of the hyperelliptic moduli determined by group actions**, *Serdica Math. Journal*, No. 4, (2006), 355-374.
- **Galois groups of prime degree polynomials with nonreal roots**, *Lect. Notes in Computing*, 13, 2005, 243–255, (with A. Bialostocki).
- **Hyperelliptic curves of genus 3 with prescribed automorphism groups**, *Lect. Notes Comp.*, vol 13. (2005), 109–123, (with J. Gutierrez, D. Sevilla).
- **Invariants of binary forms**, *Dev. in Math.*, vol 12, pg.101-122, Springer, 2005, (with V. Krishnamoorthy, H. Voelklein).
- **Genus 2 curves covering elliptic curves: a computational approach**, *Lect. Notes in Comp.*, vol 13. (2005), 205-231.
- **Hyperelliptic curves with extra involutions**, *LMS J. of Comp. Math.*, 8, (2005), 102-115. , (with J. Gutierrez).
- **Computational Aspects of Hyperelliptic Curves**, *Computer Mathematics*, Lecture Notes Ser. Comput., 10, 248–257, World Sci. Publishing, River Edge, NJ. .
- **On the generic curve of genus 3**, *Contemporary Math.*, vol. 369, pg. 233-244, AMS, 2005, (with J. thompson).
- **Some special families of hyperelliptic curves**, *J. Algebra Appl.*, 3 (2004), no. 1, 75–89. .
- **Elliptic subfields and automorphisms of genus 2 function fields**, *Algebra, arithmetic and geometry with applications*, Springer, 2004, 703–723, (with H. Voelklein).
- **Genus 2 fields with degree 3 elliptic subfields**, *Forum Math.*, 16 (2004), no. 2, 263–280.

- **Determining the automorphism group of a hyperelliptic curve**, *International Symposium on Symbolic and Algebraic Computation*, ISSAC 03, New York, 2003, 248–254.
- **Genus 2 curves with (3,3)-split Jacobian and large automorphism group**, *Algorithmic number theory (Sydney, 2002)*, Lecture Notes in Comput. Sci., 2369, 205–218.
- **The locus of curves with prescribed automorphism group**, *Communications in arithmetic fundamental groups (Kyoto, 1999/2001)*. *Sūrikaiseikikenkyūsho Kōkyūroku*, No. 1267 (2002), 112–141, (with K. Magaard, S. Shpectorov, H. Völklein).
- **Curves of Genus 2 with (n, n) Decomposable Jacobians**, *Jour. Symb. Comp.*, vol.31, No.5, pg. 603-617, 2001.

Selected talks

- September 2017 [Minimal integral models of algebraic curves](#), Algebraic curves and their applications, AMS Sectional Meeting in Orlando, FL. September 22-23, 2017.
- January 2017 [A pair of universal curves of genus 2](#), AMS Joint Meeting in Atlanta, GA. January, 4-7, 2017.
- October 2015 [Theta functions and symmetric weight enumerators for codes over imaginary quadratic fields](#), AMS Special Session on Coding Theory and Its Applications, Chicago, Oct. 3-4, 2015
- October 2015 [Julia quadratic of superelliptic Riemann surfaces](#), AMS Special Session on Riemann surfaces and their automorphisms, Chicago, Oct. 3-4, 2015
- September 2015 [Elliptic and hyperelliptic curve cryptography in the automotive systems](#), Intrepid Cybersecurity Solutions, Madison Heights, Michigan, September 15, 2015.
- June 2015 [Integral minimal models for binary forms](#), Mathematics Colloquium, University of Florida, Gainesville.
- March 2015 [Binary forms of minimal height](#), AMS Sectional Meeting, East Lansing
- July 2015 [Heights on algebraic curves](#), NATO ASI, Ohrid, 2015
- March 2014 [Minimal equations of curves over their minimal field of definition](#), Southeastern Spring Sectional Meeting University of Tennessee, Knoxville, Meeting #1097
- June 2013 [Decomposition of Jacobians of superelliptic curves](#), Riemann and Klein Surfaces, Symmetries and Moduli Spaces, Linköping, Sweden
- April 2013 [Automorphisms of curves and their Jacobians](#), AMS Special Session on Computational Advances on Special Functions and Tropical Geometry, Iowa State University
- May 2013 [Stratifications on moduli spaces of curves and superelliptic loci](#), MCAG 2013, Western Michigan University
- June 2012 [A historical view of theta functions](#) (plenary talk), Conference on Applications of Algebra, Yildiz University, Istanbul, Turkey
- March 2012 [Thetanulls of algebraic curves and some applications](#), AMS Special session on Computational Algebraic Geometry, Tampa, Florida
- Jan 2012 [Interesting families of algebraic curves](#), Joint AMS Meeting, Special Session on Mathematics of Computation
- Jan. 2012 [Half-integer theta-nulls of superelliptic curves](#), AMS Sectional Meeting: Special Session on Computational and Algorithmic Algebraic Geometry, Salt Lake City
- Oct. 2011 [Theta Functions of algebraic curves](#), Special Session on theta functions, SIAM National Conference, Raleigh
- July 2011 [Computational aspects of low genus curves](#), Laurier Centennial Conference: AMMCS-2011, Waterloo
- May 2011 [Theta-nulls of algebraic curves](#), 10th Panhellenic Geometry Conference, Patras, Greece
- Nov. 2010 [Hybrid Methodologies for Symbolic-Numeric Computation](#), MSRI, Berkeley
- Oct. 2009 [Automorphism groups of superelliptic curves](#), Workshop on Mathematical Cryptology, University of Cantabria, Spain
- March 2008 [Theta functions in coding theory](#), Mathematics Colloquium, University of Delaware
- Oct. 2007 [Genus 2 curves covering elliptic curves](#), Mathematics Colloquium, Simon Fraser University, Vancouver
- Oct. 2007 [Equations of curves with automorphisms](#), AMS Sectional Meeting, Special Session on Numerical and Symbolic Techniques in Algebraic Geometry and Its Applications, DePaul University
- Sep. 2007 [Remarks on some old problems of algebraic geometry](#), Mathematics Colloquium, Michigan Tech.
- May 2007 [A historical view of theta functions](#), Mathematics Colloquium, Lublin, Poland
- Aug. 2006 [Codes over rings of size four, lattices, and their theta functions](#), Mathematics Colloquium, Lublin, Poland
- Oct. 2006 [Some open problems in computational geometry](#), Mathematics Colloquium, University of Michigan-Dearborn

- May 2006 [Theta functions and automorphism groups of curves](#), Galoistheorie Kolloquium, Institut für Experimentelle Mathematik (IEM), Essen, Germany
- June 2006 [Theta functions and application to coding theory](#), (ACA 2006), Varna, Bulgaria
- April 2005 [Hyperelliptic curves with reduced automorphism group \$A_5\$](#) , AMS Western section, Santa Barbara
- Jan. 2005 [Genus 2 curves that admit a degree 5 map to an elliptic curve](#), Joint AMS meeting, Atlanta
- Dec. 2004 [Genus 2 curves with \(5, 5\) split Jacobian](#), Institute for Experimental Mathematics, Essen, Germany
- July. 2004 [Field of moduli of curves, a computational approach](#), Workshop Computational Arithmetic Geometry, PIMS Simon Fraiser University, Vancouver
- Oct. 2003 [Genus 2 curves with degree 5 elliptic subcovers](#), 991-14-21 AMS, Southeastern Section Meeting, Chapel Hill
- Aug. 2003 [Determining the automorphism group of algebraic curves](#), ISSAC 03, Drexler University, Philadelphia
- Jul. 2003 [Computational aspects of hyperelliptic curves](#), ACA 03, Raleigh, NC
- June 2003 [The monodromy group of a generic curve covering \$\mathbb{P}^1\$](#) , Joint International Meeting of AMS and RSME, Seville, Spain
- June 2003 [Computational aspects of hyperelliptic curves](#), University of Cantabria, Santander, Spain
- Oct. 2003 [Loci of hyperelliptic curves with prescribed group action](#), Computational Aspects of Algebraic Curves, and Cryptography, Gainesville
- Jan. 2003 [Hyperelliptic curves with non-hyperelliptic involutions](#) 983-14-115 AMS, JMN, Baltimore
- Sep. 2002 [Hyperelliptic curves with extra automorphisms](#), Galois Theory Conference, John Thompson's 70th birthday, University of Florida, Gainesville
- Jul. 2002 [Genus 2 curves with \(3,3\)-split Jacobian and large automorphism group](#), ANTS V, International Symposium in Algorithmic Number Theory, Sydney, Australia
- Nov. 2001 [Automorphisms and elliptic subfields of genus 2 fields](#) (with H. Völklein), 972-14-47 AMS, Southwestern Conference, Groups and Covering Spaces in Algebraic Geometry, Irvine, CA
- Sep. 2001 [The automorphism group of a Riemann surface](#), University of Florida Colloquium, Gainesville, Florida
- June 2001 [Elliptic subfields and automorphisms of genus 2 curves](#), University of Erlangen, Germany
- May 2001 [Computing the locus of genus 2 fields with degree 2 or 3 elliptic subfields](#), Institute for Experimental Mathematics, Essen, Germany
- May 2001 [Some Computational Aspects of Genus 2 Curves](#), Number Theory Conference, University of Illinois, Urbana-Champaign, IL
- Dec. 2000 [Genus 2 curves covering elliptic curves](#), Workshop on Arithmetic Geometry, MSRI, Berkeley, CA
- June. 2000 [Modular curves and Hurwitz spaces](#), Conference on Topological Groups, TU-München, Germany
- March 2000 [Curves of genus two with \(n,n\)-decomposable Jacobians](#), AG Gruppentheorie, Erlangen, Germany
- May 1999 [Explicit equation of certain Hurwitz spaces](#), University of Heidelberg, Germany

Conferences Organized

- Nov. 2016 [Minimal integral models of algebraic curves](#), AMS Joint Meeting, January 2017, Atlanta, GA.
- Nov. 2016 [Varieties, their fibrations and automorphisms in mathematical physics and arithmetic geometry](#), AMS Sectional Meeting, November 2016, Raleigh, NC.
- May 2016 [MAC 2016: Mathematics in Automotive Security](#), Oakland University, Rochester, MI, May 6-8, 2016.
- January 2016 [Special Session on Higher Genus Curves and Fibrations of Higher Genus Curves in Mathematical Physics and Arithmetic Geometry](#), Joint Mathematics Meetings AMS & MAA, Washington State Convention Center, Seattle, WA, January 6-9, 2016
- March 2015 [Special Session: Arithmetic of Hyperelliptic Curves](#), Michigan State University, East Lansing, MI.
- August 2014 [Nato Advanced Study Institute](#), Arithmetic of Hyperelliptic Curves, Ohrid, Macedonia.
- July 2013 [Arithmetic of algebraic curves](#), ACA 2013, Malaga, Spain. (with J. M. Couveignes, N. Papani)
- June 2012 [MCAG 2012: Michigan Computational Algebraic Geometry 2012](#), Oakland University, Rochester, MI.
- June 2012 [ECCAD 2012: East Coast Computer Algebra Day](#), Oakland University, Rochester, MI.
- Mar. 2012 [Special Session: Computational Algebraic Geometry](#), AMS Sectional Meeting, Tampa, FL.
- Jan. 2011 [Computational Algebraic and Analytic, Geometry for Low-Dimensional Varieties](#). AMS Annual Meeting, New Orleans (with M. Seppala, E. Volchek)

- June 2010 General Chair: Applications of Computer Algebra, ACA 2010, June 24-27, 2010, University of Vlora, supported by Ministry of Science and Education, Albania.
- Jan. 2009 Special Session: Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties. AMS Annual Meeting, Washington DC. (with M. Seppala, E. Volchek)
- May 2008 [Nato Advanced Study Institute](#), New challenges in digital communications, Vlora, Albania.
- July 2007 Applications of Computer Algebra, ACA 2007, Oakland University, Rochester, MI.
- July 2007 Special session: [Coding theory and cryptography](#), ACA 2007, Rochester, MI.
- Jan. 2007 Special Session: Computational Algebraic and Analytic, Geometry for Low-Dimensional Varieties. AMS Annual Meeting, New Orleans (M. Seppala, E. Volchek)
- June 2006 Special Session: Coding theory and cryptography, ACA 2006, Varna, Bulgaria. (with S. Dodunekov)
- May 2005 Computational aspects of algebraic curves, University of Idaho, Moscow, Idaho, 2005.
- Jan. 2005 *Special Session: Algorithmic Algebraic and Analytic Geometry*, AMS Annual Meeting, Atlanta, GA. (with M. Seppala, E. Volchek)
- July 2004 Special session: *Computational aspects of algebraic curves*, ACA 2004, Beaumont, TX.
- July 2003 Special session: [Computational aspects of algebraic curves](#), ACA 2003, NC State, Raleigh, NC.

Ph.D. students

- 2016 **L. Beshaj**, *Ph.D. Mathematics*, Oakland University.
Thesis: Integral binary forms with minimal height
- 2009 **R. Sanjeeva**, *Ph.D. Mathematics*, Oakland University.
Thesis: Automorphism Groups of Cyclic Algebraic Curves
- 2008 **G. Wijesiri**, *Ph.D. Mathematics*, Oakland University.
Thesis: Theta Functions of Algebraic Curves with Automorphisms

Teaching

- Oakland Univ. [Algebraic Geometry, MTH 672](#): Winter 08, 16,
[Algebraic Number Theory, MTH 670](#): Winter 2014
[Commutative Algebra, MTH 670](#): Fall 07
[Algebra I, MTH 571](#): Fall 06, 08, 11
[Algebra II, MTH 572](#): Winter 07, 12
[Computational Algebra, MTH 577](#): Winter 2011
[Coding Theory, APM 673](#): Winter 06, 09
[Algebraic Topology](#): Fall 2012
Graph Theory and Combinatorial Math, APM 563, Fall 05
[Abstract Algebra, MTH 475-476](#): Oakland University, Winter 07, 08, 11, 12
[Geometry, MTH 462](#)
Calculus I, MTH 154, Winter 13,
Calculus II, III, (regularly)
Linear Algebra, APM 275, (regularly)
Logic and Proofs, MTH 302, Oakland University, Winter 11
Discrete Mathematics, APM 263, Oakland University, Fall 07
Mathematics for Information and Technology, APM 163, Oakland Univ., Sp. 05
[Cryptosystems in Automotive Industry, MTH 505](#) Fall 2015
Special Topics: Algebraic geometry methods in engineering, Summer 2006
Special Topics: Topics in Cryptology, APM 505, Summer 05
- University of Idaho Computer Security and Cryptography, Math 504, Spring 05
Galois Theory, Math 553, Spring 2004
Group Theory, Math 552, Fall 2003
Ordinary Differential Equations, Math 315, Fall 03, Sp. 05
Linear Algebra, Math 330, Spring, Summer, Fall 04
Abstract Algebra, Math 461, Fall 04

Introduction to Cryptography, Math 435, Spring 05

UC Irvine Calculus I, II,

Infinite Series and Complex Numbers,

Elementary Linear Algebra,

Linear Algebra I, II,

University of Florida Calculus I, II,

Linear Algebra,

Differential Equations,

References

upon request.