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Prijedlog tema za diplomske radove:

Verižni razlomci i primjene *(Ivana Jozinović)*

Literatura:

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2. A. Dujella, M. Maretić, *Kriptografija*, Element, Zagreb, 2007.
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4. T. Andrescu, T. Andrica, *An Introduction to Diophantine Equations,* GIL Publishing House*,* Zalau, 2002.
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Zajmovi (Tea Osmanović)

(Zajmovi, interkalarna kamata, efektivna kamatna stopa (EKS) u praksi i konstrukcija barem 2 primjera iz prakse na kojima se računa EKS.)

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Eliptičke krivulje nad poljem racionalnih brojeva

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Prijedlog tema za završne radove:

Linearne diofantske jednadžbe (Lucija Begić)

Uz dokaz osnovnih tvrdnji o rješivosti (uključiti Euklidov algoritam i prošireni EA), primjene ovakvih jednadžbi, sustave linearnih diofantskih jednadžbi. Uključiti i natjecateljske zadatke u kojima se javljaju linearne diofantske jednadžbe.

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Engineering Sciences and Technology 42 (2023), 23-28. https://journals.ekb.eg/article_268044_4b56e6f6b36119b24dfa43148d3d8d1d.pdf

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Pitagorine trojke (Petra Pešut)

Navesti više dokaza m,n formule za generiranje Pitagorinih trojki kao i neke druge metode za generiranje Pitagorinih trojki. (Mogu se i navesti neki kodovi koji generiraju Pitagorine trojke i/ili pronalaze sve Pitagorine trojke koje imaju jedan zadan element.)

1. K. Conrad, *Pythagorean Triples,* *https://kconrad.math.uconn.edu/blurbs/ugradnumthy/pythagtriple.pdf*
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Edukativne matematičke igre (Marko Lozančić)

(Teorija vezana uz razvoj i klasifikaciju igara, primjeri digitalnih matematičkih igara.)

1. S. Adipat, K. Laksana, K. Busayanon, A. Asawasowan, B. Adipat, *Engaging students in the learning process with game-based learning: The fundamental concepts*, International Journal of Technology in Education (IJTE), 4(3), 2021, 542-552. https://doi.org/10.46328/ijte.169
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Aritmetičke funkcije (Ivana Pavić)

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Izračunavanja u teoriji brojeva pomoću programskog paketa PARI/GP

(PARI/GP je algebarski sustav dizajniran za brza izračunavanja u teoriji brojeva. Ovdje treba napraviti uvod u PARI/GP i navesti primjere programa koji se koriste za izračunavanja u teoriji brojeva.)

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1. A. Das, *Computational Number Theory*, CRC Press, Boca Raton, 2013.https://api.pageplace.de/preview/DT0400.9781482205824_A37765833/preview-9781482205824_A37765833.pdf
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Poligonalni brojevi (N. Matovina)

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Savršeni brojevi (Iva Crndić)

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Završni radovi

Kongruencije (Stella Kobašević)

(Uključiti polinomijalne kongruencije (Henselovu lemu).)

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1. A. Adler, J. Coury, *The Theory of Numbers*., Jones & Bartlett Puplishers, London, 1995.
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Fibonaccijevi brojevi (Jovana Vidović)

(Fibonaccijevi brojevi u teoriji brojeva (svojstva vezana uz djeljivost, dokaz za gornju ogradu za broj koraka u Euklidovom algoritmu).)

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1. J. R. Chasnov, *Fibonacci Numbers and the Golden Ratio,* The Hong Kong University of Science and Technology, Hong Kong, 2016.
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Načini obračuna kamata (Maja Kaurin)

(Jednostavni i složeni kamatni račun, dekurzivni i anticipativni obračun kamata, nominalni, konformni, relativni i ekvivalentni kamatnjaci u dekurzivnom i anticipativnom obračunu kamata.)

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Diofantske aproksimacije (Dora Kurtović)

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1. A. Baker, *A concise introduction in theory of numbers*, Cambridge University Press, Cambridge, 1984.
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Kriptosustavi s javnim ključem (Lora Rajković)

(Nekoliko kriptosustava s javnim ključem.)

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Kvadratne forme (Martina Vomš)

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Testovi prostosti (Magdalena Moguš)

Literatura:

1. S. Yan, Number Theory for Computing, Springer-Verlag, Berlin, 2002.
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Pellove jednadžbe (Ivana Granoša)

Literatura:

1. T. Nagell, Introduction to Number Theory, Wiley, New York, 1951.
2. A. Dujella, Uvod u teoriju brojeva, Matematički odsjek, Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu, 2002, skripta.

Pitagorine trojke (Erika Erceg)

Literatura:

1. *K. Conrad, Pythagorean triples, http://www.math.uconn.edu/~kconrad/blurbs/ugradnumthy/pythagtriple.pdf*

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Fermatovi brojevi (Antonija Sedlar)

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Kongruentni brojevi (Monika Rajkovača)

Literatura:

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Elementarne metode za rješavanje diofantskih jednadžbi (Vedrana Tokić)

Literatura:

1. T. Andrescu, T. Andrica, *An Introduction to Diophantine Equations,* GIL Publishing House, Zalau, 2002.
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Zanimljivi brojevi (Ira Štivić)

Literatura:

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Kamatni račun i primjene (Vjekoslav Radan)

Literatura:

1. S.A. Broverman, *Mathematics of Investment and Credit,* ACTEX Publication, 2010.
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Primitivni korijeni i indeksi *(Ana Popović)*

Literatura:

1. M. B. Nathanson, *Elementary Methods in Number Theory,* Springer – Verlag, NY,2000.
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Povijest kriptografije (Dragica Nikolić (Puškarić))

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Gaussovi cijeli brojevi *(Ines Petrić)*

Literatura:

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Eulerova funkcija *(Andrea Behin)*

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1. A. Dujella, *Uvod u teoriju brojeva*, PMF - Matematički odjel, Sveučilište u Zagrebu (skripta).
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RSA kriptosustav *(Anja Stojčević)*

Literatura:

1. A. Dujella, M. Maretić, *Kriptografija*, Element, Zagreb, 2007.
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Vigenereova i Playfaierova Šifra (Marinela Knežević)

Literatura:

1. A. Dujella, M. Maretić, *Kriptografija*, Element, Zagreb, 2007.
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Kvadratni zakon reciprociteta (Katarina Mink)

Literatura:

1. A. Dujella, Uvod u teoriju brojeva, Matematički odsjek, Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu, 2002, skripta.
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Verižni razlomci (David Gavran)

Literatura:

1. A. Dujella, Uvod u teoriju brojeva, Matematički odsjek, Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu, 2002, skripta.
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Diplomski radovi

Kvadratne diofantske jednadžbe (Sara Matošić)

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