| ANALYTIC NUMBER THEROY | | | | | | | | |
|------------------------|--|--|--|--|--|--|--|--|
| 1 | Course Title: | ANALYT | IC NUMBER THEROY | | | | | |
| 2 | Course Code: | MAT305 | 2 | | | | | |
| 3 | Type of Course: | Optional | | | | | | |
| 4 | Level of Course: | First Cyc | le | | | | | |
| 5 | Year of Study: | 3 | | | | | | |
| 6 | Semester: | 6 | | | | | | |
| 7 | ECTS Credits Allocated: | 5.00 | | | | | | |
| 8 | Theoretical (hour/week): | 3.00 | | | | | | |
| 9 | Practice (hour/week): | 0.00 | | | | | | |
| 10 | Laboratory (hour/week): | 0 | | | | | | |
| 11 | Prerequisites: | None | | | | | | |
| 12 | Language: | Turkish | | | | | | |
| 13 | Mode of Delivery: | Face to f | ace | | | | | |
| 14 | Course Coordinator: | Prof. Dr. | İSMAİL NACİ CANGÜL | | | | | |
| 15 | Course Lecturers: | Doç. Dr. Gökhan Soydan, Doç. Dr. Musa DEMİRCİ, Doç. Dr. Ahn TEKCAN, Yrd. Doç. Dr. Hacer ÖZDEN | | | | | | |
| 16 | Contact information of the Course Coordinator: | cangul@uludag.edu.tr, 0224 2941756, Fen-Edebiyat Fakültesi, Matematik Bölümü, 16059, Görükle / Bursa | | | | | | |
| 17 | Website: | http://www.ismailnacicangul.com/ | | | | | | |
| 18 | Objective of the Course: | To obtain results concerning the distribution of prime numbers and to make an introduction to analytic numbers | | | | | | |
| 19 | Contribution of the Course to Professional Development: | It supplies analytical properties of numbers. | | | | | | |
| 20 | Learning Outcomes: | | | | | | | |
| | | 1 | Can define prime numbers and state the known results on their distribution | | | | | |
| | | 2 | Can establish relations between aritmetic functions | | | | | |
| | | 3 | Can apply the theorems on the distribution of prime numbers | | | | | |
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| 21 | Course Content: | | | | | | | |
| | | Co | ourse Content: | | | | | |
| Week | Theoretical | | Practice | | | | | |
| 1 | Prime number theorem | | | | | | | |
| 2 | Results of the prime number theorem | n | | | | | | |
| 3 | The analytic proof of prime number t | heorem | | | | | | |
| 4 | Fundamental theorem of arithmetic | | | | | | | |

| | | | | 0.1 | Darr | l Ding (|))hier | tive | ° [| | rogra | m () ! ! | alifica | tions | : | 1 | <u> </u> |
|---|---|-------|------------|---------|------|-------------|--|--|---------|-----------------|----------|---------------|---------------------------|----------|--------|-------|----------|
| ÖK3 | 0 | 4 | 4 | 0 | 0 | 5 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK2 | 0 | 4 | 4 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK1 | 5 | (| 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * | P | 11 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ1 0 | PQ11 | PQ12 | PQ1 3 | PQ14 | PQ15 | PQ16 |
| | | | | | | | | | DOAC | | | | | | | | |
| 25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME | | | | | | | | | | | | | | | | | |
| ECTS (| ECTS Credit of the Course | | | | | | | | | | | | 5.00 | | | | |
| Total w | otal work load/ 30 hr | | | | | | | | | | | | | 5.10 | | | |
| Total W | 24 IFCTS / WORK LOAD TABLE otal Work Load | | | | | | | | | | | | | | 153.00 | | |
| Final E | kangs , | > / 1 | | יאכ | | | | | | | | | 15.00 | | | 15.00 | |
| Others | onan | | | | | | | | | 0 | | | 0.00 | | | 0.00 | |
| Total Midfern | Id Studies | | | | | | | 10.00 | | 0.00 | 0.00 | | 0.00 | | | | |
| Field St | Projects | | | | | | | ╘ | 50.00 | | | 0.00 | 0.00 | | 0.00 | | |
| Homew | lomeworks | | | | | | | | 2 | | | 20.00 | 20.00 | | 40.00 | | |
| Self stu | Self study and preperation 3 | | | | | 10 | 100400 | | | 4.00 | 4.00 | | 56.00 | | | | |
| Practica | cticals/Labs | | | | | | | 0 | | | 0.00 | | | 0.00 | | | |
| TREOP | energy 2 | | | | | 50 | 50190 | | | 3.00 | 3.00 | | | 42.00 | | | |
| Activites | | | | | | Number | | | Dura | Duration (hour) | | | Total Work Load (hour) | | | | |
| 23 | Asses | mer | nt ACTI | | | | | | : \\\// | | | | | | | | |
| 22 | Textbooks, References and/or Other Materials: | | | | | | 1. Th 2. no 3. Nu 20 | Tom M. Apostol, Introduction to Analytic Number Theory, Springer, 2000 Kiran Sridhara Kedlaya, Analytic Number Theory, (Ders notları) MIT, 2006 Paul T. Bateman and Harold G. Diamond, Analytic Number Theory an Introductory Course, world Scientific, 2009 | | | | | | | | | |
| 14 | Neme | | Zeia | Turicin | | | | | | | | | | | | | |
| 13 | Quadratic congruences | | | | | | | | | | | | | | | | |
| 12 | Legen | dre | symb | | 200 | | | | | | | | | | | | |
| 11 | Quadratic reciprocity law | | | | | | | | | | | | | | | | |
| 10 | Primitive roots | | | | | | | | | | | | | | | | |
| 9 | Relations between aritmetic functions | | | | | | | | | | | | | | | | |
| 8 | Applications of Mobious inversion Formula | | | | | | | | | | | | | | | | |
| 7 | Mobious inversion Formula | | | | | | | | | | | | | | | | |
| 6 | Dirichlet Product of Arithmetic functions | | | | | | | | | | | | | | | | |
| 5 | Arithmetic functions | | | | | | | | | | | | | | | | |

| Contrib | 1 very low | 2 low | 3 Medium | 4 High | 5 Very High |
|---------|------------|-------|----------|--------|-------------|
| ution | | | | | |
| Level: | | | | | |