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| Course Name [科目名] | Digital Signal Processing |
| Instructor Name [教員] | Akinobu Shimizu, Yuichi Tanaka |
| Office Hours and Contact Information  [オフィスアワー、連絡先] | Shimizu  Location: Building 5-302  Telephone: +81-42-388-7478  E-mail: simiz@cc.tuat.ac.jp  Office hours: after class or by appointment  Tanaka  Location: BASE Building 619  Telephone: +81-42-388-7150  E-mail: ytnk@cc.tuat.ac.jp  Office hour: after class or by appointment |
| Course Structure [授業形態] | Lecture and Exercise |
| Course Credits [単位数] | 3 |
| Course Overview [概要] | This lecture focuses on basic technologies for signal processing and its applications |
| Course Key Words [キーワード] | digital signal, Fourier transform, correlation analysis, digital filter |
| Academic Goal [目標] | 1. Able to understand Fourier transform. 2. Able to understand correlation analysis 3. Able to understand the z-transform 4. Able to understand filter properties and design techniques |
| Course Schedule [授業内容] | Week 1: Discrete Fourier transform  Week 2: Fast Fourier transform  Week 3: High dimensional Fourier transform  Week 4: Auto-correlation analysis  Week 5: Cross-correlation analysis  Week 6: The z-transform  Week 7: Properties of digital filters  Week 8: FIR and IIR filter design  Week 9: Multirate DSP systems  Week 10: Applications of DSP |
| Textbooks, References,  and Supplementary Materials | Handouts and materials given on or before the lectures |
| Grading Philosophy  (Percentage / Criteria / Methodology) | 20% Participation to lecture  80% homework and short reports. |
| Other  (i.e. Expectations on Classroom  Conduct and Decorum etc.)  [その他] |  |