

## Course Content

Course Title (English)	Advanced Digital Signal Processing
Course Title (Chinese)	高等數位訊號處理
Credit	3
Instructor	Prof. Jian-Jun Ding 丁建均 教授
Outline	<p>This class consists of several parts</p> <ul style="list-style-type: none"><li>(1) Digital filter design (including IIR, FIR, Wiener, signal reconstruction)</li><li>(2) Cepstrum, Mel-cepstrum</li><li>(3) Acoustic signal processing</li><li>(4) Compression Techniques (Including the concept and the coding algorithm)</li><li>(5) Fast algorithm design (general ways for fast algorithm design, the prime factor FFT, the sectioned convolution)</li><li>(6) Orthogonal transform (including the Walsh transform, the number theoretic transform, CDMA)</li></ul>
Goal	<p>Different from the undergraduate class, which is to train the memory ability and the calculation ability, this class is to train the abilities of analysis, thinking, and creative. I hope that, when a student sees a new technique, he can analyze its advantages, disadvantages, and possible applications. This train is helpful for improving the research ability.</p>
English Teaching	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Teaching Material	<input checked="" type="checkbox"/> English <input type="checkbox"/> Chinese