|  |
| --- |
| مشخصات درس: |
| سيستمهاي عيب ياب وكنترل تحمل پذيرخطا |
| پيشنياز: |
| **سيستمهاي كنترل مدرن** |
| سرفصل مطالب: |
| **Introduction to Diagnosis and Fault-Tolerant Control**   * *Technological Processes Subject to Faults* * *Faults and Fault Tolerance* * *Faults Requirements and Properties of Systems Subject to Faults* * *Elements of Fault-Tolerant Control* * *Structure of Fault-Tolerant Control Systems* * *Main Ideas of Fault Diagnosis* * *Main Ideas of Controller Redesign* * *A Practical View on Fault-Tolerant Control* * *Architecture of Fault-Tolerant Control* * *Distributed Systems* * *Remote Control and Diagnosis*   **Examples**   * *Two-Tank System* * *Three-Tank System* * *Ship Steering and Track Control*   **Fault Diagnosis of Deterministic Systems**   * *Introduction* * *Analytical Redundancy in Nonlinear Deterministic Systems* * *Analytical Redundancy Relations for Linear Deterministic*   *Systems - Time Domain*   * *Analytical Redundancy Relations for Linear Deterministic*   *Systems - Frequency Domain*  **Fault Diagnosis of Stochastic Systems**   * *Introduction* * *Change Detection Algorithms* * *Kalman Filter Approach to Diagnosis*   **Reconfigurability Analysis.**   * *The Fault-Tolerant Control Problem* * *Fault-Tolerant Control Architecture* * *Fault-Tolerant Linear Quadratic Design*   **Fault Accommodation and Reconfiguration Methods**   * *Fault-Tolerant Model-Matching Design* * *Control Reconfiguration for Actuator or Sensor Failures* |
| * *Fault Recovery by Nominal Trajectory Tracking* * *Fault-Tolerant H-infifinity1 Design* |
| سیستم ارزیابی: |
| * **امتحان پایان ترم: 10 نمره** * **پروژه­های درسی: 6 نمره** * **پروژه نهایی درس: 4 نمره** |
| **مراجع درس:** |
| * ***“Diagnosis and Fault Tolerant Control”,***   Mogens Blanke · Michel Kinnaert · Jan Lunze · Marcel Staroswiecki   * **“*Fault detection and diagnosis in industrial systems”,***   L. H. Chiang, E. L. Russell and R. D. Braatz   * ***“Active Fault Tolerant Control Systems: Stochastic Analysis and Synthesis”***   Mufeed M. Mahmoud, Jin Jiang,Youmin Zhang   * ***Related Papers and Material from Web*** |
|  |