



Course Name	Digital production: modeling and optimization
Major	Computer Software, Electronic Information Science and Technology, Electrical Engineering
Objective	To make the students master the method of implementation, online balance, simulation processes, and other areas of digital production. To improve students' understanding of the production process, production system analysis and the comprehensive management ability.
Semester	5 th
Language	English
Learning/Teaching methods	Course teaching, demonstration and exercises
Hour	48h
Credit	3.0
Prerequisite	Advanced mathematics, DSP, Digital electronic technique, C language
Content	<ol style="list-style-type: none"> <li>1. Implementation analysis (6h)</li> <li>2. The balance method (8h)</li> <li>3. Simulated the process of the production system</li> <li>4. Design the implementation and simulation of an actual project</li> </ol>
Grade/Exam	exam 70%+performance in class(homework+ experiment)30%
Reference	<p>[1]J. Banks, J.S.Carson II, B.L.Nelson, D.M.Nicol, Discrete-Event System Simulation. 5th Edition, Prentice Hall, Upper Saddle River, ISBN 0136062121, 2009.</p> <p>[2] Ziegler B.P., Praehofer H., Kim T.G. (2000). Theory of Modeling and Simulation.Second Edition, Integrating Discrete Event and Continuous Complex Dynamic System. Academic Press, San Diego, ISBN 0127784551</p> <p>[3] Joines J.A., Roberts S.D. (2015). Simulation Modeling with SIMIO: A Workbook..4th Edition, 432 p., ISBN 151914220X.</p> <p>[4] Kelton W.D., Smith J.S., Sturrock D.T. (2013). Simio and Simulation: Modeling, Analysis and Applications.ISBN 9781492116424.</p> <p>[5] T. Hill, Operations Management, 2 edition. Houndmills, Basingstoke, Hampshire; New York, N.Y.: Palgrave Macmillan, 2004.</p> <p>[6] R. Wild, Production and Operations Management, 4th edition. Oxford: Cengage Learning EMEA, 1989.</p> <p>[7] E. J. Anderson, The Management of Manufacturing: Models and Analysis. Wokingham, England ; Reading, Mass: Addison-Wesley, 1994.</p> <p>[8] B. P. Zeigler, H. Praehofer, and T. G. Kim, Theory of Modeling and Simulation, Second Edition, 2 edition. San Diego: Academic Press, 2000.</p> <p>[9] J. Banks, J. S. Carson II, B. L. Nelson, and D. M. Nicol, Discrete-Event System Simulation, 5 edition. Upper Saddle River: Prentice Hall, 2009.</p> <p>[10] D. W. D. Kelton, D. J. S. Smith, and D. T. Sturrock, Simio and Simulation: Modeling, Analysis, Applications: Economy, 3rd ed. Sewickley, Pa.: CreateSpace Independent Publishing Platform, 2013.</p>