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| **Course: DIGITAL LOGIC DESIGN** | | | |
| **Week** | **Topic/Link Description** | **Links** | **File Type** |
| 1 | DLD Overview  Number System, Complements (covered in IICT – semester 1)  Binary Addition  Binary Subtraction  Binary Codes (overview)  BCD (8421) Code  BCD Addition  2421 Code  Excess-3 Code  Excess-3 Addition  Gray Code  Binary to Gray  Gray to Binary  Error Detection & Correction Parity Bit  **Exercise** | <https://www.youtube.com/watch?v=vsoYlH1_hbc>  <https://drive.google.com/drive/folders/1Y0YLNRwPtaEj6yiGQ8hk14w2JuoQxi7B>  <https://youtu.be/w_j87F4tjf8> , <https://youtu.be/b4cN7q2fl4E>  <https://youtu.be/HJ_coLJBV24>  <https://youtu.be/dIrmultXKO8>  <https://youtu.be/hCmbZ0bWPfE>  <https://www.youtube.com/watch?v=0rLiYpy2CqQ>  <https://youtu.be/yPu57aSj9kA>  <https://youtu.be/X0YZY2yqQJA>  <https://youtu.be/LHw8TVk9iOY>  <https://youtu.be/CXn4lxBlO2U>  <https://youtu.be/0dPN4gh0CKI>  <https://youtu.be/cF-Q5j7RUEw>  <https://youtu.be/-qMm9hhvp9Y>  <https://youtu.be/DdMcAUlxh1M>  Morris Mano – Digital Logic Design book exercise Chapter 1 | Presentation Slides  Links  Course Book |
| 2 | Binary Logic Gates  Some Mathematical Properties  Axiomatic Definition of Algebra  Basic Theorems of Boolean Algebra  Simplification of Boolean Expressions using Truth Table  Simplification using Boolean theorems  **Exercise** | <https://youtu.be/zfMxkjOtCws>  <https://www.youtube.com/watch?v=2U71nZYb990>  <https://youtu.be/nhYH3Gtn3RE>  <https://youtu.be/MxNQpXyieWo>  <https://youtu.be/fYbCOpnEN9w>  <https://youtu.be/t6oCD7B1-Hg>  Morris Mano – Digital Logic Design book exercise Chapter 2 | Links  Course Book |
| 3 | Boolean Functions  Boolean functions to Circuits  Canonical & Standard Forms  Minterms & Maxterms  **Exercise** | <https://www.youtube.com/watch?v=R3zFiIRCms8>  <https://youtu.be/2dG3dc066Zk> , <https://youtu.be/IrHV9LgPYMU>  <https://youtu.be/smKUO7ZGxg4>  <https://youtu.be/ckqO4lXsnF4>  Morris Mano – Digital Logic Design book exercise Chapter 2 | Links  Course Book |
| 4 | Map Method  Two and Three variable maps  Four Variable map, Examples  **Exercise** | <https://youtu.be/wjM2RDG5yTI> , <https://youtu.be/WeRKQSmeH64>  <https://youtu.be/_shQtM2MGD0> ,  <https://youtu.be/YJSqf_Z024w>  Morris Mano – Digital Logic Design book exercise Chapter 3 | Links  Course Book |
| 5 | NAND Implementation  NOR Implementation  **Exercise** | <https://youtu.be/elkc1_RSvBw>  <https://youtu.be/Q45yO_W2uxw>  Morris Mano – Digital Logic Design book exercise Chapter 3 | Links  Course Book |
| 6 | Don't Care Conditions  Presentation Topic Distribution and Discussions  Exercise | <https://youtu.be/BgakMTvIQlI>, <https://youtu.be/_F9nAb6m4U4>  <https://youtu.be/dW9FViRKTfA>  Morris Mano – Digital Logic Design book exercise Chapter 3 | Links  Course Book |
| 7 | Introduction to Combinational Logic  Design Procedures  Adders, Half Adder, Full Adder  Sub tractors, Half & Full Sub tractors | <https://youtu.be/_yHo2qq82P0>  <https://youtu.be/Pjw8t-bGSBo>  <https://youtu.be/mXw8RTmd-7c> , <https://youtu.be/QyKIuJY4u8A>  <https://youtu.be/V9IaH4_LrQI> , <https://youtu.be/caU4Gfa90uU> | Students Group Presentations  on ZOOM |
| 8 | Code Conversion Analysis Procedure | <https://youtu.be/2bcWI9zCMj4> | Students Group Presentations  on ZOOM |
| 9 | Binary Parallel Adder | <https://youtu.be/DwoM9_Qq3r4> | Students Group Presentations  on ZOOM |
| 10 | BCD Adder  Decoders  BCD to 7 Segment Decoder | <https://youtu.be/wLHFJEQWEng>  <https://youtu.be/iir1ahUmSGc>  <https://youtu.be/HHQFI8R1iZc> | Students Group Presentations  on ZOOM |
| 11 | Full Adder circuit using decoder  De multiplexer  Encoder  Multiplexer | <https://youtu.be/pxgajFM5bPI>  <https://youtu.be/FH7GLeQkaXE> , <https://youtu.be/G_sJkGLAE0k>  <https://youtu.be/AMipEBreXs0>  <https://youtu.be/8OL3KuZ3fR8> , <https://youtu.be/l8PmZNN5v6Q> | Students Group Presentations  on ZOOM |
| 12 | Boolean Function designed by MUX  Read only Memory  Combinational circuit (with ROM)  Programmable Logic Array | <https://youtu.be/0U73qMAyzUI>  <https://youtu.be/BNdsJ08RhwQ>  <https://youtu.be/EjHUQhFPwUA> | Students Group Presentations  on ZOOM |
| 13 | Introduction to Sequential Logic  Introduction to Flip-Flops  Basic RS-FF, Clocked RS-FF | <https://www.youtube.com/watch?v=D2PKxsCknBg>  <https://youtu.be/BHv5JMT2RfQ> , <https://youtu.be/gLItkLRGV-k>  <https://youtu.be/jqe5x27grho>  <https://youtu.be/Fd07TnTE3oo> , <https://youtu.be/MvvKj4JXXJo> | Students Group Presentations  on ZOOM |
| 14 | Sequential logic circuits  Basic RS-FF, Clocked RS- FF, D-FF, T- FF  JK –FF with NOR & NAND gates  Introduction to JK Master slave FF, Comparison of RS, D, T& JK FF | <https://youtu.be/l49TYKhJ6qg>  <https://youtu.be/bto2cX2Rz94>  <https://youtu.be/mTDCyzY-nHQ>  <https://youtu.be/M-tc_FPNe8k> | Students Group Presentations  on ZOOM |
| 15 | Basic Binary Ripple Counters  Synchronous Modulus counters | <https://youtu.be/YvD0tib4gn4>  <https://youtu.be/PSuEDGEHesY> , <https://youtu.be/jldmYp4tfhE> | Links |
| 16 | Parallel Data Transfers  Shift left registers, Shift right registers  Serial Data Transfers | <https://youtu.be/vRBnZMJA0LY>  <https://youtu.be/uc2BjBHAiNA>  <https://youtu.be/Ut2SjYuVBM0> | Links |

**All presentation slides:** <https://drive.google.com/drive/folders/1s8sKccljdrEpSuLeAOTJB12iT43-xluh?usp=sharing>

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**DLD Simulation Lab: circuitlab.com**