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| **Course: DIGITAL LOGIC DESIGN** |
| **Week** | **Topic/Link Description** | **Links** | **File Type** |
| 1 | DLD OverviewNumber System, Complements (covered in IICT – semester 1)Binary AdditionBinary SubtractionBinary Codes (overview)BCD (8421) CodeBCD Addition2421 CodeExcess-3 CodeExcess-3 AdditionGray CodeBinary to GrayGray to BinaryError 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 SlidesLinksCourse Book |
| 2 | Binary Logic GatesSome Mathematical PropertiesAxiomatic Definition of AlgebraBasic Theorems of Boolean Algebra Simplification of Boolean Expressions using Truth TableSimplification 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 | LinksCourse Book  |
| 3 | Boolean FunctionsBoolean functions to CircuitsCanonical & Standard FormsMinterms & 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 | LinksCourse Book |
| 4 | Map MethodTwo and Three variable mapsFour 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 | LinksCourse Book |
| 5 | NAND ImplementationNOR Implementation**Exercise** | <https://youtu.be/elkc1_RSvBw> <https://youtu.be/Q45yO_W2uxw> Morris Mano – Digital Logic Design book exercise Chapter 3 | LinksCourse Book |
| 6 | Don't Care ConditionsPresentation Topic Distribution and DiscussionsExercise | <https://youtu.be/BgakMTvIQlI>, <https://youtu.be/_F9nAb6m4U4> <https://youtu.be/dW9FViRKTfA> Morris Mano – Digital Logic Design book exercise Chapter 3 | LinksCourse Book |
| 7 | Introduction to Combinational Logic Design Procedures Adders, Half Adder, Full AdderSub 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 Presentationson ZOOM  |
| 8 | Code Conversion Analysis Procedure  | <https://youtu.be/2bcWI9zCMj4>  | Students Group Presentationson ZOOM |
| 9 | Binary Parallel Adder | <https://youtu.be/DwoM9_Qq3r4>  | Students Group Presentationson ZOOM |
| 10 | BCD AdderDecodersBCD to 7 Segment Decoder | <https://youtu.be/wLHFJEQWEng> <https://youtu.be/iir1ahUmSGc> <https://youtu.be/HHQFI8R1iZc>  | Students Group Presentationson ZOOM |
| 11 | Full Adder circuit using decoder De multiplexerEncoder 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 Presentationson ZOOM |
| 12 | Boolean Function designed by MUXRead only Memory Combinational circuit (with ROM) Programmable Logic Array | <https://youtu.be/0U73qMAyzUI> <https://youtu.be/BNdsJ08RhwQ> <https://youtu.be/EjHUQhFPwUA>  | Students Group Presentationson ZOOM |
| 13 | Introduction to Sequential LogicIntroduction 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 Presentationson ZOOM |
| 14 | Sequential logic circuitsBasic RS-FF, Clocked RS- FF, D-FF, T- FFJK –FF with NOR & NAND gatesIntroduction 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 Presentationson ZOOM |
| 15 | Basic Binary Ripple CountersSynchronous Modulus counters | <https://youtu.be/YvD0tib4gn4> <https://youtu.be/PSuEDGEHesY> , <https://youtu.be/jldmYp4tfhE>  | Links |
| 16 | Parallel Data TransfersShift left registers, Shift right registersSerial 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**