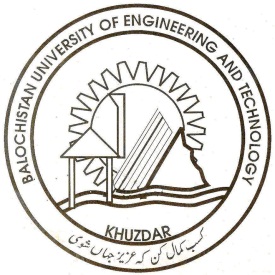
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**Faculty/course**

**Handbook/docket**

|  |  |
| --- | --- |
| **Name :** | **Dr. Wazir Muhammad** |
| **Title of Degree Program:** | B.E Electrical Engineering |
| **Title of Course :** | **Electrical Network Analysis** |
| **Code :** | CS-211 |
| **Total Credit Hours :** | 04 (Theory + Practical) |
| **Total Contact Hours :** | 03+01 |

**Balochistan University of Engineering & Technology Khuzdar**



**B**alochistan **U**niversity of **E**ngineering and **T**echnology, **K**huzda**R**

It is certified that the course folder (Docket) of the course

**Linear circuit :**

Being offered in the 3rd Semester, 2021

**Computer System Engineering and Science**

In the session **2019**

Course Taught by the Faculty

**Engr. Hammal Khan** Designation**: Lecturer**

is thoroughly checked and is found to be complete and fulfilling all the quality requirements.

P.T. Member QEC\_\_\_\_\_\_\_\_\_\_\_\_\_ P.T. Member QEC\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chairman

Computer Department Director Quality Assurance Cell

Balochistan UET, Khuzdar

**Balochistan University of Engineering and Technology Khuzdar**

**Department of Computer engineering**

**Course File**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Item** | **Page No.** |
| 1 | Copy of Syllabus |  |
| 2 | Copy of Academic calendar |  |
| 3 | Course time table |  |
| 4 | Course/Lecture break up |  |
| 5 | Teaching notes and sample of practical printouts |  |
| 6 | Schedule of tests, assignments and Quizzes |  |
| 7 | Breakdown of laboratory experiments pertaining to the course and record of successful conduct |  |
| 8 | Monthly attendance and proof that it was communicated to Students |  |
| 9 | Samples of best, worst and average Assignment and Test along with its question papers, and proof that the results of Tests, assignments and Quizzes were communicated to students. |  |
| 10 | Samples of quizzes |  |
| 11 | Listing of textbook and other reference books pertaining to the course |  |
| 12 | Record of make-up classes for any un-scheduled holiday. |  |
| 13 | Details of office hours for tutoring etc. |  |
| 14 | Recommendation and suggestions related to the course for the next session. |  |

**Balochistan university of engineering & technologY khuzdar**

**Computer System Engineering and Science**

**Subject**: **Linear Circuit** **Code: CS-214**  **3rd Semester**

**Teacher’s Name Engr. Hammal Khan**

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| --- |
| **Syllabus of the subject** |
| |  | | --- | | **COURSE OUTLINE**:  Charge and Current, Voltage, Power and Energy, Circuit Element, Introduction to Basic Laws, Ohm’s Law. Nodes, Branches, Loops, Kirchhoff’s Laws. Series Resistors and Voltage Division, Active and passive element, Open and short circuit, Law of resistance, Conductance. Define Alternating voltage and current, Use of sine waveform in ac fundamental, Explain Generation of alternating voltage, Write the equation of alternating voltage and current, Define Form factor, average value, peak factor, R.M.S , Define Frequency, time period, angular velocity, amplitude, frequency and speed, Concept of phases, Introduction to Methods of Analysis, Nodal Analysis, Nodal Analysis with Voltage Source, Mesh Analysis, Mesh Analysis with Current Source, Nodal Versus Mesh Analysis., Introduction to Circuit Theorems, Linearity Property, Superposition., Source Transformation., The venin’s Theorem, Norton’s Theorem, Maximum transform theorem. Introduction to Capacitors and Inductors.  , Series and Parallel Capacitors, Inductors, Series and Parallel Inductors.  , Introduction to First-Order Circuits, The Source-Free RC Circuit, The Source-Free RL Circuit, Introduction to Second-Order Circuits. | |

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| **Course Breakup** | |
| **WEEK 1** | |
| **Lectures** | **Topics** |
| Lect # 01  Lect # 02  Lect # 03 | Charge and Current, Voltage. Power and Energy  Electric Potential, Potential Difference, Concept of EMF and P.D.  Related Numerical problems. |
| **WEEK 2** | |
| **Lectures** | **Topics** |
| Lect # 04  Lect # 05  Lect # 06 | Ohms Law, Resistance and its unit, Factors upon which resistance depends.  Resistivity and its unit, Conductance, Conductivity.  Related Numerical Problems. |
| **WEEK 3** | |
| **Lectures** | **Topics** |
| Lect # 07  Lect # 08  Lect # 09 | Nodes, Branches, Loops,  Kirchhoff’s Laws, parallel resistance.  Series Resistors, Voltage Division |
| **WEEK 4** | |
| **Lectures** | **Topics** |
| Lect # 10  Lect # 11  Lect # 12 | Active and passive element, Open and short circuit,  Alternating voltage and current.  Use of sine waveform in ac fundamental. |
|  | |
| **Assignment to be given during first four (4) weeks of teaching..** | |
|  | |
| **WEEK 5** | |
| **Lectures** | **Topics** |
| Lect # 13  Lect # 14  Lect # 15 | Explain Generation of alternating voltage.  equation of alternating voltage and current.  Form factor, average value, peak factor. |
| **WEEK 6** | |
| **Lectures** | **Topics** |
| Lect # 16  Lect # 17  Lect # 18 | Frequency, time period, angular velocity.  amplitude, frequency and speed, Concept of phases.  Test no#01 |
| **WEEK 7** | |
| **Lectures** | **Topics** |
| Lect # 19  Lect # 20  Lect #21 | Numerical on A.C fundamental.  Numerical to find average, peak factor, form factor.  Why we used sine wave in a.c fundamental. |
| **WEEK 8** | |
| **Lectures** | **Topics** |
| Lect # 22  Lect # 23 | Introduction to Nodal Analysis.  Procedure of using nodal analysis. Numerical problems. |
| **Mid Term Test :** | |
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| **WEEK 9** | |
| **Lectures** | **Topics** |
| Lect # 24  Lect # 25  Lect # 26 | Introduction to Nodal Analysis with Voltage Source.  Method of nodal analysis with voltage source.  Numerical on Nodal Analysis with Voltage Source. |
| **WEEK 10** | |
| **Lectures** | **Topics** |
| Lect # 27  Lect # 28  Lect # 29 | Source transformation.  Numerical on source transformation.  Introduction to mesh analysis. |
| **WEEK 11** | |
| **Lectures** | **Topics** |
| Lect # 30  Lect # 31  Lect # 32 | Mesh Analysis with Current source.  Numerical problem on Mesh Analysis with Current source.  Introduction to Circuit Theorems, Linearity Property. |
| **WEEK 12** | |
| **Lectures** | **Topics** |
| Lect #33  Lect #34  Lect #35 | Numerical on Linearity Property.  Homogeneous property.  **Assignment #02** |
| **Assignment to be given during 9th -12th weeks of teaching.** | |
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| **WEEK 13** | |
| **Lectures** | **Topics** |
| Lect # 36  Lect #37  Lect #38 | Introduction to Superposition.  Numerical on Superposition  Introduction to venin’s Theorem and numerical. |
| **WEEK 14** | |
| **Lectures** | **Topics** |
| Lect # 39  Lect # 40  Lect # 41 | Introduction to Maximum transform theorem.  Numerical on Maximum transform theorem  Introduction to Capacitors and Capacitors and Inductors |
| **WEEK 15** | |
|  | **Topics** |
| Lect #42  Lect #43  Lect #44 | The Source-Free RC Circuit.  The Source-Free RL Circuit.  Introduction to Second-Order Circuits.  Test no#02 |
| **Final Semester Examination** | |

**Signature of subject teacher \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**BALOCHISTAN UNIVERSITY OF ENGINEERING & TECHNOLOGY,**

**KHUZDAR**

**Computer system Engineering and science**

**Tests schedule**

**B.E 3rd Semester (Computer system Engineering and scinece)**

**SUBJECT: Linear Circuit CODE: CS:214**

**NAME OF TEACHER: Engr. Hammal Khan**

|  |  |
| --- | --- |
|  | ***Scheduled week*** |
| ***Test No. 1*** | ***6th Week*** |
| ***Presentation, Quiz*** | ***Quiz after each lecture*** |
| ***Test No. 2*** | ***15th Week*** |
| ***Assignment No. 1*** | ***4th week*** |
| ***Assignment No. 2*** | ***12th week*** |

**SIGNATURE: ­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Balochistan university of engineering & technologY khuzdar**

**LISTING OF TEXTBOOKS PERTAINING TO THE COURSE**

**Linear Circuit**

**(CS: 214)**

**TEXT BOOKS:**

* **Electric circuit by James W Nilsson & Susan a Riedel ,8th edition.**
* **S.franco. Electrical circuit fundamental Oxford university press**
* **Fundamental of electric circuit by Charles K. Alexander,** **Matthew N. O. Sadiku 4th edition.**