



Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)

EXAMINATION BRANCH

GRIET/COE/3H/G/21-22

25 June 2022

(GR18 REGULATIONS)
OFFLINE MOOCS EXAMINATIONS JULY/AUGUST 2022
NOTIFICATION
FOR

GR18 Regulations	2018 Admitted Batch
------------------	---------------------

The students who appear for the above examinations scheduled in the month of July/August 2022 are to note that the registrations for internal and external examinations will be carried as per the time schedule given below.

Note:

1. For those students who completed their course work and could not attain required credits through MOOCS courses are only eligible. And Syllabus will be same as MOOCS course.
2. Internals consists of 1 mid exam (20 marks) following GR18 Regulations Pattern and five assignments (10 Marks) covering entire syllabus. These Internals will be conducted in the month of July.
3. External Examination follows GR18 Regulations Pattern.
4. Exam Subjects and their syllabi are attached below.

Exam fee payment at Exam Branch Counter

Fee Collection Starts from 28 June 2022

Last Date Without Late Fee	:	02.07.2022	3.30PM
Last Date With Late Fee of Rs.100/-	:	06.07.2022	3.30PM
Last Date With Late Fee of Rs.1000/-	:	09.07.2022	3.30PM
Last Date With Late Fee of Rs.2000/-	:	13.07.2022	3.30PM

SUPPLEMENTARY EXAMINATION FEE

Each Course (both Internals & Externals)	Rs. 1000/-
--	------------

DATE: 25/06/2022

Controller of Examinations

MOOCs Offline Exam Registration Subjects

S No.	Department	Subject Name
1	CIVIL	Project Planning and Control
2	CIVIL	Plastic Waste Management
3	EEE	Introduction to IOT
4	EEE	Cloud Computing
5	EEE	The Joy of Computing Using Python
5	MECHANICAL	Processing of Polymers and Polymer Composites
6	MECHANICAL	Automation in Manufacturing
7	ECE	Introduction to Internet of Things
9	CSE	Data Science for Engineers
10	CSE/IT	User Centric Computing for Human Computer Interaction
11	IT	Joy of Computing Using Python

PROJECT PLANNING AND CONTROL (CIVIL) SYLLABUS

UNIT I: Introduction - Course Context, Construction Project Management, Objectives of a Project, Scientific Way of Managing of Objectives, Construction Industry and National Growth, Project Stakeholders, Project Phases, Project Organization

UNIT II: Time Management - Overview, Basics of Work Breakdown Structure (WBS), Tools for Time Management, Work Breakdown Structure (WBS), Gantt Charts. Duration Estimation - Types, Inputs, Methods, Parametric Estimation, Factors influencing Productivity, Networks - Introduction, Techniques

UNIT III: Network Representation & Analysis - Introduction to Floats, Types of Floats, Usage of Floats for Project Decisions, Review Network Analysis Concepts.

UNIT IV: Time-Cost Trade-off - Fast-Tracking vs Crashing, Relationship between Activity Direct Cost & Activity Duration - Assumptions

UNIT V: Resource Scheduling - Resource Allocation, Resource Profile, Resource Levelling, Minimum Moment Concept, Applying Improvement Factor – Illustration. Precedence Diagramming Method (PDM), Project Monitoring & Control. Uncertainty in Project Schedules (PERT), Emerging Trends/Tools in Project Planning

PLASTIC WASTE MANAGEMENT (CIVIL) SYLLABUS

UNIT I

Introduction-Plastics-Types, Uses and Global Statistics, Plastic Waste – Sources, Production.

UNIT II

Plastic Waste- Global and Indian Context, Plastic Waste Management Rules 2016 (India) and Global Rules and Regulations.

UNIT III

Plastic Bans- Plastics bans including China Sword Policy implication on global plastic waste management, Impact of Plastics on Marine Life, Effect on Wildlife, Human Health and Environment.

UNIT IV

Plastic Waste Management Practices – Use of Plastic waste in roads, issues and challenges.

UNIT V

Alternate Materials to Plastics – Possible alternate materials to plastic- Greener Alternatives, Plastics Resource Recovery and Circular Economy.

Introduction to IoT (EEE)

Syllabus

Unit 1: Introduction to IoT: Sensing, Actuation, Basics of Networking, Communication Protocols.

Unit 2: Sensor Networks, Machine-to-Machine Communications, Interoperability in IoT.

Unit 3: Introduction to Arduino Programming: Integration of Sensors and Actuators with Arduino, Introduction to Python programming.

Unit 4: Introduction to Raspberry Pi, Implementation of IoT with Raspberry Pi, Introduction to SDN, SDN for IoT, Data Handling and Analytics, Cloud Computing.

Unit 5: Sensor-Cloud, Fog Computing, Smart Cities and Smart Homes, Connected Vehicles, Smart Grid, Industrial IoT, Case Study: Agriculture, Healthcare, Activity Monitoring.

Cloud Computing (EEE)

Syllabus

Unit 1: Introduction to Cloud Computing, Cloud Computing Architecture

Unit 2: Service Management in Cloud Computing, Data Management in Cloud Computing

Unit 3: Resource Management in Cloud, Cloud Security

Unit 4: Open Source and Commercial Clouds, Cloud Simulator

Unit 5: Research trend in Cloud Computing, Fog Computing

The Joy of Computing Using Python (EEE)

Syllabus

UNIT I: Need for Programming, Programming using scratch, Installing Anaconda and its libraries, Variables of python, printing options in python, looping constructs: Conditional branching with if, if-else, nested if else, else if ladder, switch-case, Loops: for, while, do-while, jumping statements, break, continue.

Unit II: Functions, Files and Exceptions, Tuples, Lists, Stings, Dictionaries and Sets.

Unit III: Developing Algorithms for Crowd computing, Jumbled words, Theory of Evolution, Magic Square Hit and trail, Dabble Game, Birthday Paradox, Spot the Movie

Unit IV: Applications of Python Part 1: Speech to Text, Monte Hall simulation, Lottery Simulation, Sorting and searching, Substitution Cipher, Tic Tac Toe, Recursion, Snakes and Ladders, Spiral Traversing, GPS Track and Route.

Unit V: Applications of Python Part 11: Image processing, Anagrams, Facebook sentimental Analysis, Natural Language processing-Author stylometry, Area calculation, Flames, Data Compression, Browser automation using WhatsApp, Networkx.

PROCESSING OF POLYMERS AND POLYMER COMPOSITES (MECHANICAL)

Syllabus

Unit 1: Introduction to course, Engineering materials and processing techniques, Thermoplastics and thermosets, Processing of polymers, Thermoforming process Extrusion, Compression molding, Injection molding.

Unit 2: Transfer molding, Rotational molding, Blow molding, Composite materials: basic concepts, classification of composite materials.

Unit 3: Processing of polymer composites, Hand-layup, Spray-layup, Compression molding Injection molding. Reaction injection molding, Autoclaving, Resin transfer molding, Filament winding, Pultrusion. Sheet molding, Pre-pegging and challenges in primary processing of composites,

Unit 4: Secondary processing of polymer composites, joining of polymer composites, Adhesive joining. Mechanical joining, Microwave joining, Induction and resistance welding, Drilling of polymer composites.

Unit 5: Conventional vs ultrasonic drilling, Remedies for reducing drilling induce damages, Research tools for secondary processing, Numerical problems and case studies.

AUTOMATION IN MANUFACTURING (MECHANICAL)

Syllabus

Unit I: Introduction: Importance of automation in the manufacturing industry. Use of mechatronics. Systems required. Design of an automated system: Building blocks of an automated system, working principle and examples.

Unit II: Fabrication: Fabrication or selection of various components of an automated system. Specifications of various elements. Use of design data books and catalogues. Sensors: study of various sensors required in a typical automated system for manufacturing. Construction and principle of operation of sensors.

UNIT III: Microprocessor Technology: signal conditioning and data acquisition, use of microprocessor or micro controllers. Configurations. Working. Drives: electrical drives – types, selection criteria, construction and operating principle.

UNIT IV: Mechanisms: Ball screws, linear motion bearings, cams, systems controlled by camshafts. Mechanisms: Electronic cams, indexing mechanisms, tool magazines, and transfer systems. Hydraulic systems: hydraulic power pack, pumps, valves.

UNIT V: Hydraulic systems: designing of hydraulic circuits. Pneumatic systems: configurations, compressors, valves, distribution and conditioning. CNC technology: basic elements, interpolators and programming.

Introduction To Internet of Things

(ECE)

Syllabus

Unit -1: Introduction to IoT

Defining IoT, Characteristics of IoT, Physical design of IoT, Logical design of IoT, Functional blocks of IoT, Communication models & APIs .

Unit -2: IoT & M2M

Machine to Machine, Difference between IoT and M2M, Software define Network.

Unit -3: Challenges in IoT

Design challenges, Development challenges, Security challenges, Other challenges.

Unit -4: Applications of IoT

Home automation, Industry applications, Surveillance applications, Other IoT applications.

Unit 5 : Developing IoTs

Introduction to Python, Introduction to different IoT tools, Developing applications through IoT tools, Developing sensor based application through embedded system platform, Implementing IoT concepts with python.

DATA SCIENCE FOR ENGINEERS

(CSE)

Syllabus

UNIT I: Introduction to R, Variables and datatypes in R, Data frames, Recasting and joining of data frames, Recasting and joining of data frames, Arithmetic, Logical and Matrix operations in R, Advanced programming in R : Functions, Control structures, Data visualization in R Basic graphics.

UNIT II: Linear Algebra and Statistics for Data Science: Solving Linear Equations, Linear Algebra Distance, Hyperplanes and Half spaces, Eigenvalues, Eigenvectors, Statistical Modelling, Random Variables and Probability Mass/Density Functions, Sample Statistics.

UNIT III: Introduction to Data Science, Solving Data Analysis Problems - A Guided Thought Process, Predictive Modelling, Linear Regression, Model Assessment, Diagnostics to Improve Linear Model Fit.

UNIT IV: Simple Linear Regression Model Building, Cross Validation, Multiple Linear Regression Modelling Building and Selection.

UNIT V: Classification, K - Nearest Neighbors (KNN), K - Nearest Neighbors implementation in R, K - means Clustering, K - means implementation in R.

USER CENTRIC COMPUTING FOR HUMAN COMPUTER INTERACTION

(Common to CSE & IT)

Syllabus

UNIT 1: Introduction: Introduction to User Centric Computing(UCC) and history, Issues and challenges, Latest research trends, User-Centric Design and Software Engineering.

UNIT II: Engineering User-Centric Systems: Components of SDLC - Contextual Inquiry, - Design Guidelines Prototyping.

UNIT III: User-Centric Computing: The UCC framework with illustrative case study, User-Centric models descriptive, predictive models and taxonomy, Introduction to GOMS family of models

Computational user models (classical), Keystroke-Level Model(KLM), (CMN)GOMS Model, The Fitts' Law, The Hick-Hyman Law

UNIT IV: Computational user models(contemporary): 2D and 3D pointing models, The steering Law and constrained navigation, Model for hierarchial menu selection, Mobile typing models(sibgle finger and two thumb typing), Model for touch performance(FFitts' law),

Formal system models: Introduction to formal models in UCD, Formal modelling of user-computer dialogue.

UNIT-V: Empirical Research Methods: Introduction and research question formulation, Variables determination and experiment design, Data Analysis including model building

User-Centric Design Evaluation: Introduction to User-Centric design evaluation and expert evaluation technique, : User evaluation and model-based evaluation

Joy of Computing Using Python

(IT)

Syllabus

UNIT-I Motivation for Computing, Welcome to Programming, Variables and Expressions: Design your own calculator, Loops and Conditionals : Hopscotch once again. Lists, Tuples and Conditionals : Lets go on a trip, Abstraction Everywhere : Apps in your phone, Counting Candies , Crowd to the rescue, Permutations : Jumbled Words.

UNIT- II Magic square, Birthday Paradox: Find your twin, Guess a Movie Name, Analyse your Facebook data : 20 questions game : I can read your mind. Google Translate : Speak in any Language, Currency Converter : Count your foreign trip expenses, Monte Hall : 3 doors and a twist, Sorting : Arrange the books, Searching : Find in seconds.

UNIT-III Substitution Cipher : What's the secret !!, Tic-tac-toe game, Recursion, Snake and Ladder game, Sprial Traversing, GPS Tracking, Tuples, Image Processing: Fun with images, Jumble words, Anagrams .

UNIT-IV Natural Language processing, Sentiment Analysis : Spot the similarities Count the words : Hundreds, Thousands or Millions, Author Stylometry, Introduction to networkx, Six degree of separation etc, FLAMES, Data Compression techniques.

UNIT-V Browser Automation, Fun with calendar, Collatz Conjecture, Page rank algorithm