# IKG Punjab Technical University Jalandhar

**No. IKGPTU/DA/792** **Date : 21/5/2019**

**Subject: Regarding guidelines for Institutional Summer Vacation Training.**

Guidelines for Institutional Summer Vacation Training is as under:

1. Four (04) weeks "Institutional Summer Vacation Training" is compulsory for all the students of B. Tech. /B. Arch. Programmes during summer vacation after 2nd semester.

2. The Institutions have to arrange atleast one (01) Industrial visit of all students to any Industry related to the discipline of the student.

3. The Institutions have to arrange atleast one talk/Lecture of the Industrial expert in the Institution.

4. Students have to visit in Groups to Local NGOs/ Society in villages /city to discuss socio-economic / environmental issues with the people and shall prepare a report on the following:

   (i) To discuss the socio-economic/ environmental issues and problems being faced by the society / people and shall prepare "**Problem Formulation Report**".

   (ii) To discuss these issues in groups / with faculty and propose requisite solutions /remedies to the above problems based on engineering aspects.

5. The students have to be given practical based training in the college labs. / Workshops in the concerned discipline. Each BOS has prepared module with contact hours to be completed by students in college during summer vacation (4 weeks) training and the modules to be completed (discipline wise) are attached.

6. The college shall evaluate the students at the end of training with comments (satisfactory / unsatisfactory) and shall inform to Examination Department to the University immediately after completion of training.

21/5/19.

**(Dr. Balkar Singh)**
Director (Academics)

# IK Gujral Punjab Technical University Jalandhar

## Institutional Summer Vacation Training (Batch 2018 and onwards)

**Four (04) weeks Institutional Summer Vacation Training after 2nd semester for B. Tech. programme.**
**B. Tech. (Civil Engineering)**

**Objective:** *The training is compulsory and is for the orientation of the students of the Civil Engineering so that they are aware of/can identify the industrial, departmental, environmental, societal and other issues that are a challenge in the society and develop the ability to find solutions. The training in the concerned discipline will be provided in College/Department Labs /Workshops*

**Content to be covered:**

Module I, II Hands on training/ practical knowledge on any three/four of the given contents

Module III, IV & V: Compulsory

| Module | Content | Remarks |
|---|---|---|
| I | • Hands on training of MS word office.<br>• PPT and graphs in Excel.<br>• Report writing skills.<br>• The needs of Building and safety requirements.<br>• Classification of Buildings/ roads/water resources structures. | 30 hours |
| II | • Measurements of an area of existing Building<br>• Making Building Layout Plans with measurements.<br>• Introduction to the AutoCAD.<br>• Study of Various civil software's in Industry<br>• Introduction to construction tools and equipment. | 30 hours |
| III | • Making Building Plan using CAD.<br>• Illustration of components in layout Plan: rooms, kitchen, bathroom. Walls thickness, Doors and windows etc. | 30 hours |
| IV | • Importance of Civil Engineering Infrastructure.<br>• Visit to Construction Site/Dam/ RMC Plant related to discipline/branch (The faculty and students to identify small issues and propose requisite solutions/ remedies/ innovative solutions based on engineering)<br>• Invited talk by Industry Expert<br>• Expert talk on recent technologies | 25 hours |
| V | • Make an inventory of construction and finishing materials being used.<br>• Student shall do Market Survey for availability and rates of materials in the already prepared inventory<br>• Visit to local NGO/village/city to identify socio-economic/ Environmental/Traffic congestion/ Water related issues and identify a problem and prepare a "Problem formulation report" | 25 hours |

**Institutional Summer Vacation Training (Batch 2018 and onwards)**

| Module | Content | Remarks |
|---|---|---|
| | • To have a group discussion on the issues identified with faculty and to propose requisite solutions/remedies/innovative solutions based on Engineering. | |
| Total Time | | 140 hours |

**Evaluation Criterion:**

i) Four (04) weeks Institutional Summer Vacation Training after 2nd semester is a compulsory having One Credit course.
ii) The students are required to maintain a daily dairy and submit it along with the "Problem formulation report".
iii) Student falling short of 75% attendance criterion is required to repeat the training with next batch.
iv) Continuous evaluation to be done and proper record to be maintained.

**The students need to submit a summary report of the institutional training of Module I-V. A detailed report/ scrapbook of inventory and market survey done in Module V. The viva exam for the subject will be conducted along with the practical exams of the End-Semester Examination of Third Semester**

IK Gujral Punjab Technical University Jalandhar

**Institutional Summer Vacation Training (Batch 2018 and onwards)**

## 4-WEEK INSTITUTIONAL SUMMER VACATION TRAINING

B.Tech. (Batch 2018 &onwards)

| |
|---|
| 1.Electronics & Communication Engineering |
| 2.Electronics & Computer Engineering |
| 3.Electronics & Instrumentation Engineering |
| 4.Electronics & Telecomm Engineering |
| 5.Electronics Engineering |

**Objective:** 4-Week Institutional Summer Vacation Training after 2nd semester for is compulsory for B.Tech. Students to make them aware of industrial, environmental, societal issues those can be taken up as challenges by technical manpower of the country and enable them develop ability to find their solutions.

**Weekly Schedule & Training Contents:**

| Week No. | Training Contents | Contact Hours |
|---|---|---|
| I | a) How to use Multimeters, Digital Storage Oscilloscopes and Function Generators.<br>b) Identification and assessing features/values of discrete electronic components like resistances, capacitances, diodes, transistors, etc.<br>c) Designing half-wave& full-wave rectifiers with filters on breadboard using discrete components and testing their working with multimeters and Digital Storage Oscilloscopes.<br>d) Introduction to Arduino Uno, Nano & Mega platform& its Integrated Development Environmentfor programming | 25 hours |
| II | a) Introduction to Internet of Things<br>b) Introduction to most popular Arduino shields and their working<br>c) Wireless control of relays/LED using ESP8266 WiFi module<br>d) Fancy LED lighting control using Arduino<br>e) Arduino based sliding gate control | 25 hours |
| III | a) Introduction and installation to XAMPP<br>b) Introduction to HTML, PHP & MySQL environments<br>c) To develop website for user registration, login and information retrieval<br>d) Introduction to JavaScript and Bootstrap framework for easy website designs | 25 hours |
| IV | a) Expert Talk on Startups: Challenges and Opportunities<br>b) Visit to nearby relevant Industrial identify their requirements and challenges<br>c) Study of solar panels installed on rooftops<br>d) Local visit to face environmental and societal problems such as increasing traffic, traffic rule violations, water wastage, challenges in implementation of Swachh Bharat Mission, etc. | 25 hours |

**Institutional Summer Vacation Training (Batch 2018 and onwards)**

| Week No. | Training Contents | Contact Hours |
|---|---|---|
| | e) Identification of one problem with suggestedtechnical solution for the same<br>f) Preparation of (1) 4-Week Institutional Summer Training Report and (2) Problem Formation Report | |

**Evaluation Criterion:**

a) 4-Week Institutional Summer Vacation Training is Compulsory Non-Credit courseafter 2nd sem.
b) Student with less than 75% attendance will have to repeat the training with next batch.
c) Student must participate in hands-on training maintain records of all activities done.
d) Training Report and Problem Formulation Report are must to be submitted by each student group
e) Students will be awarded Satisfactory or Unsatisfactory on completion of the training

# IK Gujral Punjab Technical University Jalandhar

## Institutional Summer Vacation Training (Batch 2018 and onwards)

**Four (04) weeks Institutional Summer Vacation Training after 2nd semester for B. Tech. programme. B. Tech. (Electrical Engineering/ Electrical and Electronics Engineering/ Electronics and Electrical Engineering / Electrical and Industrial Control Engineering)**

**Objective:** *The training is compulsory and is for the orientation of the students of the Electrical Engineering/ Electrical and Electronics Engineering/ Electronics and Electrical Engineering / Electrical and Industrial Control Engineering so that they are aware of/can identify the industrial, departmental, environmental, societal and other issues that are a challenge in the society and develop the ability to find solutions. The training in the concerned discipline will be provided in College/Department Labs /Workshops*

**Content to be covered:**

Module I, II & III: Hands on training/ practical knowledge on any three/four of the given contents

Module IV & V: Compulsory

| Module | Content | Remarks |
|---|---|---|
| I | • Hands on training of wiring (Tube light, Incandescent bulb & LED light fitting, extension board, staircase).<br>• Preparation of wiring diagram for domestic load/commercial load<br>• Study of types of switches, protective devices (samples to be made available)<br>• Types of electrical wires and Cables (samples to be made available)<br>• Classification of Insulation (samples to be made available) | 30 hours |
| II | • Single Line diagram of power generation, transmission distribution<br>• Power scenario in India (Conventional & renewable sources of energy) (recent information from the website of Ministry of power to be included)<br>• Introduction to the concept of Heating, Ventilation and Air conditioning.<br>• The need of industrial safety.<br>• Introduction to electrical machines and their maintenance. | 30 hours |
| III | • Introduction to multimeter, function generator, CRO,<br>• Identification and testing of resistors, capacitors, transistors and diodes, etc.<br>• Observing the response of various circuits on CRO<br>• Design and fabrication of +5V / +12V powers supply on bread board<br>• Design and fabrication of half wave and/or full wave rectifier<br>• Logics gates (using ICs) | 30 hours |
| IV | • Study of main components of a sub-station and visit to local sub Station<br>• Visit to industry/manufacturing unit related to discipline/branch (In case of small-scale industries/MSMEs, the faculty and students to identify | 25 hours |

**Institutional Summer Vacation Training (Batch 2018 and onwards)**

| Module | Content | Remarks |
|---|---|---|
| | small issues and propose requisite solutions/ remedies/ innovative solutions based on engineering)<br>• Invited talk by Industry Expert<br>• Expert talk on recent technologies | |
| V | • Visit to local NGO/village/city to identify socio-economic/ environmental issues and identify a problem and prepare a "Problem formulation report"<br>• To have a group discussion on the issues identified with faculty and to propose requisite solutions/remedies/innovative solutions based on Engineering. | 25 hours |
| Total Time | | 140 hours |

**Evaluation Criterion:**

i) Four (04) weeks Institutional Summer Vacation Training after 2nd semester is a compulsory non-Credit course.

ii) The students are required to maintain a daily dairy and submit it along with the "Problem formulation report".

iii) Student falling short of 75% attendance criterion is required to repeat the training with next batch.

iv) Continuous evaluation to be done and proper record to be maintained.

v) The result will be "Satisfactory/Unsatisfactory" which is to be recorded within 3 working days after the completion of the training.

## INSTITUTIONAL SUMMER VACATION TRAINING (04 WEEKS)
## B.Tech. (Mechanical Engineering / Automobile Engineering / Automation & Robotics Engineering / Production / Industrial Engineering)

**Module-01: Black Smithy Shop**: Introduction, Study & use of smithy forging tools, anvil, swage block, chisels, punches, hammers, sledge hammer, study of air blower M/c & sheering M/c.

***Job Making*** – (i) Prepare an octagonal cross-sectional Poker by using various types of hammers and forging tools.

**(10 Hrs.)**

**Module-02: Carpentry Shop**: Introduction, study & use of various tools like cutting tools, planning tools, striking tools, drilling and boring tools, holding tools etc., Study of wood turning lather machine.

***Job Making*** – (i) Prepare a Cross-lap joint using different planes and rasp file.

(ii) Make a Dovetail joint using different carpentry tools such as planes, mortise chisel and tenon chisel. **(10 Hrs.)**

**Module-03: Fitting Shop**: Introduction, study & use of different tools, cutting tools, marking tools, drill bit, die & tap & types of files.

***Job Making*** – (i) Prepare the following job by using suitable fitting tools by taking Mild Steel as a raw material with 5-6mm thickness and suitable dimensions.

**(10 Hrs.)**

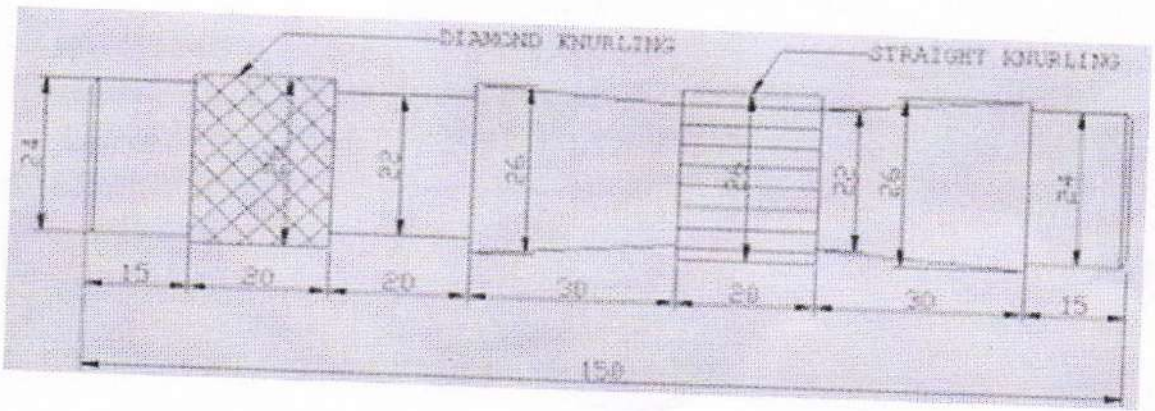
**Module-04: Foundry Shop**: Introduction, study & use of cupola furnace, various tools, pattern making moulding boxes.

***Job Making*** – (i) Considering all the gating elements, Prepare the mould in a green sand using split pattern and complete the casting process.

**(10 Hrs.)**

**Module-05: Machine Shop**: Introduction, study and use of lather machine, shaper machine including operations, holding devices and materials for cutting tools

***Job Making*** – (i) Complete the multioperation job on lathe machine by taking the 26mm diameter of Mild Steel bar.



**(10 Hrs.)**

**Module-06: Welding Shop:** Introduction, study and use of welding tools and devices, Study of electric arc welding machine

***Job Making*** – (i) Using electric arc welding technique prepare the following welding joints: -

a) Lap Joint
b) Butt Joint

**(10 Hrs.)**

**Module-07: Sheet Metal Shop:** Introduction, study and use of various tools, soldering and brazing

***Job Making*** – (i) Develop and Prepare a conical funnel of GI sheet using lock seam joint and soldering method.

**(10 Hrs.)**

IK Gujral Punjab Technical University Jalandhar

**Institutional Summer Vacation Training (Batch 2018 and onwards)**

INSTITUTIONAL PRACTICAL TRAINING

**IKGPTU CAMPUSES AND AFFILIATED COLLEGES**

| |
|---|
| B. Tech Computer Engineering |
| B. Tech Computer Science Engineering |
| B. Tech Information Technology |
| B. Tech 3D Animation Engineering |

1. **Workshop on programming language:** (10 hrs/week)

- Logic development using algorithms and flowcharts
- Control structures
- One dimensional and two-dimensional arrays
- Structures
- Functions
- Pointers

2. **Office Automation** (5 hrs/week)

- **Power point**
  - Examine slide show presentation concepts and explore the Microsoft Office PowerPoint environment.
  - Create a new presentation.
  - Modify presentation themes.
  - Add and edit text to slides.
  - Add new slides to a presentation.
  - Insert clipart images and shapes to slides.
  - Insert and modify tables and charts.
  - Add sound and video to a slide presentation.
  - Insert and edit animations and slide transitions

- **Spreadsheet**
  - Examine spreadsheet concepts and explore the Microsoft Office Excel environment.
  - Create, open and view a workbook.
  - Save and print workbooks.
  - Enter and edit data.
  - Modify a worksheet and workbook.
  - Work with cell references.
  - Learn to use functions and formulas.
  - Create and edit charts and graphics.
  - Filter and sort table data.

- **Word**
  - *Create a new document.*
  - *Open, save and print a document.*
  - *Edit and format text.*
  - *Change the page layout, background and borders.*
  - *Insert headers and footers.*
  - *Insert and edit tables.*
  - *Insert clip art and pictures to documents.*
  - *Perform a mail merge.*
  - *Share and review shared document files.*

## 3. HTML, CSS and JAVASCRIPT COURSE

(10 hrs/week)

- **DAY 1:**
  - Basic introduction to web development. The fundamental technology used to define the structure of a webpage.
  - Introduction to important concepts and syntax and how to use HTML to structure a webpage.
    a. History of HTML
    b. What you need to do to get going and make your first HTML page
    c. What are HTML Tags?
    d. HTML Tag vs. Element vs. Attributes
- **DAY 2:**
  - **HTML-Basic Formatting Tags**
    a. HTML Basic Tags
    b. HTML Formatting Tags
    c. HTML Color Coding
  - **HTML-Lists**
    a. Unordered Lists
    b. Ordered Lists
    c. Definition list
- **DAY 3:**
  - **HTML-Images**
  - **HTML-Hyperlink**
  - **HTML-Table:** Use of Table tags <table>, <th>, <tr>, <td>, <thead>, <tbody>.
  - **Use of Colspan and Rowspan in HTML Table**

- **DAY 4:**
  - **HTML-Headers:** Title, Link, Style, Script, Meta Tags
  - **HTML-Form:** Create HTML forms using tags **<input>, <textarea>, <button>, <select>, <label>.**

- **DAY 5:**
  - **Assignment to Create an HTML webpage of student profile**

**WEEK 2**

- **DAY 1:**
  - **HTML DIV, SPAN Tag**
  - **Introduction to CSS, its benefits**
  - **Different ways to use CSS (Inline, Internal and external)**

- **DAY 2:**
  - **CSS background style:** background-color, background-image, background-repeat, and background-position.
  - CSS text formatting style: color, text-decoration, text-align, vertical-align, text-indent, text-transform, letter-spacing, word-spacing line-height, font-family, font-size, font-style, font-variant, font-weight.

- **DAY 3:**
  - **CSS Tables**: border, width & height, text-align, vertical-align, padding, margin, color
  - **CSS List:** list-style-type, list-style-position, list-style-image, list-style.
  - CSS float and clear property

- **DAY 4:**
  - **Introduction to Bootstrap Framework and its benefits**
  - **Create a webpage for student profile using bootstrap framework**

- **DAY 5:**
  - **Review and discuss the problems in student profile webpage**

**WEEK 3**

- **DAY 1:**
  - **Introduction to JavaScript and its Objects (Window, Document, etc.)**
  - **Different ways to use JavaScript on a webpage**

- DAY 2:
  - Hello World in JavaScript
  - JavaScript variables
  - Conditional statements, looping statements
- DAY 3:
  - JavaScript Arrays and its manipulation
  - Manipulation of String using JavaScript functions
- DAY 4:
  - Create a registration form and validate using JavaScript. One must validate email address, phone number, and all mandatory fields in the form.
- DAY 5:

Review and discuss the problems in registration