**Sinhgad Technical Education Society’s**

**SINHGAD ACADEMY OF ENGINEERING, PUNE-41of**

**First Year Engineering Department**

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PROJECT BASED LEARNING (PBL)

WORK BOOK

**ACADEMIC YEAR: 2021/ 2022 Semester: II**

**Division: B Batch: B2 Group: B8**

**Project Title: SCOIAL DISTANCING MANGER**

**Area of Project: COVID CENTERS**

**First Year Engineering Department**

**SINHGAD ACADEMY OF ENGINEERING**

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**SINHGAD COLLEGE OF ENGINEERING**

S.No. 44/1, KONDHWA (Bk), Off Sinhgad Road, Pune – 411 048.

**Department of First Year Engineering**

**Certificate**

This is to certify that, following students,

1. **ADITYA SHIRSE Roll No: FB037**
2. **KSHITIJ DAREKAR Roll No: FB038**
3. **SAYALI BHAND Roll No: FB039**
4. **ADITYA SUDAKE Roll No: FB040**
5. **RAHUL WADHEKAR Roll No: FB041**

has completed all the Term Work & Practical Work in the subject **Project Based Learning (PBL)** satisfactorily in the department of First Year Engineering as prescribed by Savitribai Phule Pune University, in the academic year 20\_\_\_ -20 \_\_\_.

**Faculty-in-charge Head of Department** **Principal**

**Date: \_\_\_/\_\_\_\_/\_\_\_\_\_\_\_\_.**

**Rules & Regulations:**

1. Handle the workbook very carefully.
2. All students must enter the correct information in the work book.
3. All entries in the PBL work book must be verified by the concerned Supervisor/Mentor.
4. Activities planned should be completed as per the instructions and schedule given by Supervisor/Mentor.
5. Assessment of TW for Project Based Learning (PBL) is out of 25 Marks which are based on attendance, regularity of completion of activities on given time and students involvement.
6. Assessment of PR for PBL is out of 50 Marks which are based on idea inception, outcomes of PBL, problem solving skills, solution provided, final product, documentation, demonstration, contest participation, and awareness.
7. Students need to submit final report of 5 to 10 pages in the prescribed format given at the end of this workbook.

**Course Objectives:**

1. To emphasizes learning activities that are long-term, interdisciplinary and student-centric.

2. To inculcate independent learning by problem solving with social context.

3. To engages students in rich and authentic learning experiences.

4. To provide every student the opportunity to get involved either individually or as a group so as to develop team skills and learn professionalism.

**Course Outcomes:**

**CO1:** Project based learning will increase their capacity and learning through shared cognition.

**CO2:** Students able to draw on lessons from several disciplines and apply them in practical way.

**CO3:** Learning by doing approach in PBL will promote long-term retention of material and replicable skill, as well as improve teachers' and students' attitudes towards learning.

**Group Structure:**

Working in supervisor/mentor monitored groups; the students plan, manage, and complete a task/project/activity which addresses the stated problem.

1. There should be team/group of 5 -6 students
2. A supervisor/mentor teacher assigned to individual groups

**Selection of Project/Problem:**

The problem-based project oriented model for learning is recommended. The model begins with the identifying of a problem, often growing out of a question or “wondering”. This formulated problem then stands as the starting point for learning. Students design and analyze the problem within an articulated interdisciplinary or subject frame.

A problem can be theoretical, practical, social, technical, symbolic, cultural, and/or scientific and grows out of students’ wondering within different disciplines and professional environments. A chosen problem has to be exemplary. The problem may involve an interdisciplinary approach in both the analysis and solving phases.

By exemplarity, a problem needs to refer back to a particular practical, scientific, social and/or technical domain. The problem should stand as one specific example or manifestation of more general learning outcomes related to knowledge and/or modes of inquiry.

There are no commonly shared criteria for what constitutes an acceptable project. Projects vary greatly in the depth of the questions explored, the clarity of the learning goals, the content, and structure of the activity.

1. A few hands-on activities that may or may not be multidisciplinary.
2. Use of technology in meaningful ways to help them investigate, collaborate, analyze, synthesize, and present their learning.
3. Activities may include- Solving real life problem, investigation, /study and Writing reports of in depth study, field work.

**Group Information:**

**Division: \_\_\_\_\_\_\_\_\_\_ Batch: \_\_\_\_\_\_\_\_\_\_\_ Group: \_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |
| --- | --- | --- | --- |
| Roll No. | PRN No. | Name of Student | Mobile No. |
| FB037 |  | ADIYTA SHIRSE | 8468877962 |
| FB038 |  | KSHITIJ DAREKAR | 7249430981 |
| FB039 |  | SAYALI BHAND | 9579542701 |
| FB040 |  | ADITYA SUDAKE | 9881797996 |
| FB041 |  | RAHUL WADHEKAR | 9975206362 |

Name of Faculty/Mentor: Mr. SANKET BARDE

E-mail:

Mobile No.: 9673031686

**Initial Survey for Finalization of Title** (Literature Survey)**:**

**The COVID-19 pandemic came with restrictions, regulations**

**and stay-at-home orders. This meant that people stayed indoors,**

**offices remained shut, playgrounds were empty and streets**

**remained barren of human interaction. Many individuals could not**

**return to their homes, many stuck in foreign lands and many in**

**solitude. As a result, the usage of digital devices has increased**

**manifold across the globe. Irrespective of age, people are pushed to**

**rely on digital platforms. Education, shopping, working, meeting,**

**entertaining and socializing suddenly leaped from offline to online.**

**Here, digital technology came as a blessing in disguise, enabling**

**individuals to remain emotionally connected despite the social**

**distancing. At the same time, prolonged screen time has caused**

**concerns related to its impact on physical and mental health. Whilemindful (and regulated) use of digital devices is linked with wellbeing,**

**excessialth outcomes such as psychological problems, low**

**emotional stability, and greater risk for depression or anxiety (Allen**

**et al., 2019; Aziz Rahman et al., 2020; Ministry of Human Resource**

**Development, 2020). Negative consequences often result when**

**digital use is impulsive, compulsive, unregulated or addictive.**

**Required H/W & S/W:**

* **BUZZER**
* **RELAY 5 VOLT**
* **TRANSISTOR BC 547**
* **IR SENSOR**
* **9 VOLT BATTERY**
* **BATTERY CONNECTOR**
* **SWITCH**

**References: (Website/Books/Papers):**

**Figure/Circuit Diagram/Block Diagram/Flow Chart:**

**Abstract:**

**The ongoing COVID-19 corona virus outbreak has caused a global disaster**

**with its deadly spreading. Due to the absence of effective remedial agents**

**and the shortage of immunizations against the virus, population vulnerability**

**increases. In the current situation, as there are no vaccines available;**

**therefore, social distancing is thought to be an adequate precaution (norm)**

**against the spread of the pandemic virus. The risks of virus spread can be**

**minimized by avoiding physical contact among people. The purpose of this**

**work is, therefore, to provide a deep learning platform for social distance**

**tracking using an overhead perspective. The framework uses the YOLOv3**

**object recognition paradigm to identify humans in video sequences. The**

**transfer learning methodology is also implemented to increase the accuracy**

**of the model. In this way, the detection algorithm uses a pre-trained**

**algorithm that is connected to an extra trained layer using an overhead**

**human data set. The detection model identifies peoples using detected**

**bounding box information. Using the Euclidean distance, the detected**

**bounding box centroid's pairwise distances of people are determined. To**

**estimate social distance violations between people, we used an**

**approximation of physical distance to pixel and set a threshold. A violation**

**threshold is established to evaluate whether or not the distance value**

**breaches the minimum social distance threshold. In addition, a tracking**

**algorithm is used to detect individuals in video sequences such that the**

**person who violates/crosses the social distance threshold is also being**

**tracked. Experiments are carried out on different video sequences to test**

**the efficiency of the model. Findings indicate that the developed framework**

**successfully distinguishes individuals who walk too near and**

**breaches/violates social distances; also, the transfer learning approach**

**boosts the overall efficiency of the model. The accuracy of 92% and 98%**

**achieved by the detection model without and with transfer learning,**

**respectively. The tracking accuracy of the model is 95%**

**Area & Scope:**

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**Final Title of Project: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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Signature of PBL Coordinator/FE Coordinator

**Weekly Planning Sheet**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activities Completed | Signature of Students | Signature of Faculty/Mentor |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |

Signature of PBL Coordinator/FE Coordinator

**Weekly Planning Sheet**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activities Completed | Signature of Students | Signature of Faculty/Mentor |
| 5 |  |  |  |  |
| 6 |  |  |  |  |

Signature of PBL Coordinator/FE Coordinator