## MANUFACTURING PROCESS (SKMM 2713) SEMESTER 1 2019-2020

#### GROUP PROJECT

#### 1.0 OBJECTIVES

The main objectives of this group assignment are as follows;

- i. To train students in acquiring and organizing information
- ii. To improve the students' knowledge and understanding with regards to the field of study
- iii. To train student working in team
- iv. To train students in technical report writing
- v. To train students presenting their work (if necessary)

### 2.0 BRIEF EXPLANATION OF THE ASSIGNMENT

- i. Assuming you are working as an engineer in a manufacturing company which have decided to proceed with the new project, that is, manufacturing of household consumer product. You are assigned to this project with a *team of three/four other engineers*.
- ii. You are required to make this project a success by means of acquiring all the necessary information pertaining to the manufacturing of the product (as given via a simple drawing). The information should be (but not limited to) the following list;
  - (a). The historical development of this product (where applicable)
  - (b). The competitors presently present locally
  - (c). Engineering drawings and related technical information of the component to be produced
  - (d). Type of materials used
  - (e). The major manufacturing processes involved
  - (f). Related machines and equipment used
  - (g). Assembly methods of the component (if applicable)
  - (h). Type of manufacturing system to be used (mass, batch, job, group, etc)
  - (i). Estimated product cost structure.
  - (j). Other related information you may assume the production quantity, make or buy, etc.

## 3.0 FORMAT OF THE REPORT & EVALUATION

You are required to produce a neatly bounded, typed in A4 sized paper, technical report describing on the assignment, assuming to be presented before the board of directors of the company. You may use an appropriate format, which should include all the information listed in Section 2.0 (ii) above. Refer Appendix 1 attached pertaining to the weightage of the report evaluation

#### 4.0 INSTRUCTION

You must appoint a group leader, held meetings & discussions (take minute of important decisions, attendance). Only one report to be submitted by each group, including a soft copy. The report must indicate the tasks and contributions assigned to each group members. The submission date should not later than 12 PM, 19/12/2019. Late submission without prior notification to the lecturer will not be accepted. Total mark will be 100 or equivalent to 15% of the total coursework mark allocation. You will be asked to give peer evaluation (5%). A few groups will be called to make oral presentation (selected randomly).

You should upload your report to *turnitin.com* and make sure your report is **below 40% of similarity index**. Report **EXCEEDED** 40% of similarity index will be given 0 marks due to plagiarism.

## How to submit to turnitin.com?

- i) You should login with Turnitin Class ID: 22014097 with enrolment key: 12345 Choose SKMM2713-SEM1-19-20 (GROUP ASSIGNMENT)
- ii) Make sure to upload your report with file-name and submission title as formatted shown below:
   For example, if your Group Name: AliAndFriends, and your Class Section is 1.
   SKMM2713\_AliAndFriends\_Section1.pdf

# **OUTLINE OF THE REPORT**

| 1.                                     | INTRODUCTION  |       |  |  |  |  |                         |   |
|--|---|-------|--|--|--|--|-------------------------|---|
|  | <ul> <li>Method of production</li> </ul>  |       |  |  |  |  |                         |   |
|  | <ul> <li>Function of the component/product</li> <li>Assumption on the type of manufacturing system</li> <li>Assumption on the quantity of production</li> </ul> |       |  |  |  |  |                         |   |
|  |   |       |  |  |  |  | • Product cost estimate |   |
|  |   |       |  |  |  |  | 2.                      | DETAILED SPECIFICATION OF THE FINAL PRODUCT |
|  | Material selection  |       |  |  |  |  |                         |   |
| Component analysis                     |   |       |  |  |  |  |                         |   |
| Dimensional, surface etc specification |   |       |  |  |  |  |                         |   |
| Technical drawing                      |   |       |  |  |  |  |                         |   |
| 3.                                     | STAGES OF THE PROCESSES   |       |  |  |  |  |                         |   |
|  | • Discuss at least three (3) alternative processes  |       |  |  |  |  |                         |   |
|  | <ul> <li>The type of process selected for each step or stages of the total product man</li> </ul>   |       |  |  |  |  |                         |   |
|  | <ul> <li>Stages Process stages or steps flow chart</li> </ul>   |       |  |  |  |  |                         |   |
| 4.                                     | TYPES OF MACHINES/EQUIPMENT FOR EACH PROCESS  |       |  |  |  |  |                         |   |
|  | Provide pictures or sketches  |       |  |  |  |  |                         |   |
| 5.                                     | GREEN MANUFACTURING (SUSTAINABILITY)  | 10%   |  |  |  |  |                         |   |
| 6.                                     | CONCLUSION  |       |  |  |  |  |                         |   |
| 7.                                     | REFERENCES  | 10%   |  |  |  |  |                         |   |
| <i>'</i> •                             | REFERENCES  | 10 /0 |  |  |  |  |                         |   |
| 8.                                     | APPENDIX  |       |  |  |  |  |                         |   |



# SCHOOL OF MECHANICAL ENGINEERING Faculty of Engineering

# MANUFACTURING PROCESS (SKMM 2713) **SEMESTER 1 2019-2020**

# PEER AND SELF-ASSESSMENT OF GROUP ASSIGNMENT

| <b>Evaluators</b> | ' name: |  |
|-------------------|---------|--|
|-------------------|---------|--|

# GIVE MARKS (%) in the appropriate columns to evaluate other group members' performance

| Performance Criteria                  | Level 1<br>(0% - 20%)   | Level 2<br>(21% - 40%)   | Level 3<br>(41% - 60%)  | Level 4<br>(61% - 80%)  | Level 5<br>(81% - 100%)  |
|---------------------------------------|---|--|---|---|--|
| Effort in<br>Problem-solving          | Does not try to solve<br>problems or help<br>others solve<br>problems. Let's<br>others do the work.                         | Rarely tries to solve problems or help others solve problems.  | Does not suggest or refine solutions but is willing to try out solutions suggested by others.   | Refines solutions suggested by others   | Actively looks<br>for and suggests<br>solutions to<br>problems.  |
| 1.<br>2.<br>3.                        |   |  |   |   |  |
| 4.       5.                           |   |  |   |   |  |
| Participation and Working with Others | Does not participate,<br>listen to, shares with,<br>and supports the<br>efforts of others. Is<br>not a good team<br>player? | Rarely participate,<br>listens to, shares<br>with, and supports<br>the efforts of others.<br>Often is not a good<br>team player.   | Often participate,<br>listens to, shares<br>with, and supports<br>the efforts of others,<br>but sometimes is<br>not a good team<br>member.  | Usually participate, listens to, shares, with, and supports the efforts of others.  Does not cause" ripples" in the group.  | Almost always participate, listens to, shares with, and supports the efforts of others. Tries to keep people working well together.  |
| 1.                                    |   |  |   |   |  |
|                                       |   |  |   |   |  |
|                                       |   |  |   |   |  |
|                                       |   |  |   |   |  |
|                                       | Effort in Problem-solving  1. 2. 3. 4. 5.  Participation and Working with Others  | Effort in Problem-solving  Does not try to solve problems or help others solve problems. Let's others do the work.  1. 2. 3. 4. 5.  Participation and Working with Others  Others  Does not participate, listen to, shares with, and supports the efforts of others. Is not a good team player?  1. 2. 3. 4. | Problem-solving  Does not try to solve problems or help others solve problems. Let's others do the work.  1.  2.  3.  4.  5.  Participation and Working Others  Others  Participation of thers  Others  Participation of thers  Others  Participation of thers  And working others  with and supports the efforts of others. Is not a good team player?  I.  2.  3.  4.  Does not participate, listen to, shares with, and supports the efforts of others. Solve problems.  Participation of the solve problems or help others solve problems.  Rarely participate, listen to, shares with, and supports the efforts of others. Solve problems or help others solve problems. | Effort in Problem-solving  Does not try to solve problems or help others solve problems. Let's others do the work.  1. 2. 3. 4. 5.  Participation Others  Others  And Working With Others  Does not participate, listen to, shares with, and supports the efforts of others. Is not a good team player?  Does not participate, listen to, shares with, and supports the efforts of others. Is not a good team player.  1. 2. 3. 4. 5. | Effort in Problem-solving  I.  2.  3.  4.  Does not participation others of thers of thers Others Others  Participation Others  Others  And Working  Participation Others  Others  Others  Others  I.  I.  I.  I.  I.  I.  I.  I.  I.  I |