CHME SUMMER PRACTICE GUIDE

GENERAL

1. Our curriculum requires each student to have two summer practices in industrial plants (CHME 300 and CHME 400), each for a duration of at least 20 working days.
2. CHME102, CHME 203 or CHME 204 is a prerequisite for Summer Practice I, while CHME102, CHME 323 or CHME 325 is a prerequisite for Summer Practice II.
3. Summer practice is done **only during the summer months**, which should start after the spring semester final exam period. It should end before the fall semester registration period. Students enrolled in the summer semester may start their practice **after the termination of the summer semester.**
4. CHME 300 and CHME 400 should be done in two separate plants **in one continuous period**. Work solely done in laboratories or R&D sections, regardless domestic or abroad, is not acceptable.
5. Students should find the plants for summer practice, which is subject to approval by the Summer Practice Program Coordinator. A request may be placed to the University or the department; however, it is not guaranteed to receive a placement in a company.

ADMINISTRATIVE ISSUES

1. Administrative Issues are handled by the Student Affairs Office.
2. Students Affairs Office from time to time issues announcements related to the general conduct of summer practice. Students should be attentive to these announcements.
3. Letters asked by companies indicating the obligatory nature of summer practice can be obtained from the Student Affairs Office.
4. A letter of acceptance obtained by a student from a company (note that it has to be on a formal form) has to be approved by the Summer Practice Program Coordinator and then submitted to the Student Affairs Office.
5. Following the call, students should submit a 'Student Information Form' to Student Affairs Office.
6. At least 3 weeks before the starting date of their summer practice, students should make their decision with respect to which company they will have their summer practice at, and this should be communicated to the Students Affairs Office so that insurance procedures can be completed.
7. Before starting summer practice students should collect the Insurance Policy Statement from the Students Affairs Office.

DESCRIPTION OF SUMMER PRACTICE

Summer practice for a chemical engineering student aims at giving him/her an opportunity for practical experience. Therefore, students are expected to familiarize themselves with all aspects of plant operation, from raw materials to final products, from management to quality control, and from plant utilities to maintenance and environmental protection. This may not be realized due to time limitations or other constraints. Students should preferably visit and study different sections of the plant for a reasonably short period, and then concentrate their efforts on a selected production unit. **A representative schedule for summer practice is as follows:**

- Organization, management, accounting: A few days
- Raw materials, main processes, products: 1 - 2 weeks
- Process monitoring and control laboratories: A few days
- Collection of data-Calculations: 1- 2 weeks
- Process utilities, water and waste treatment, others: Up to 1 week

It is known that some plant managers have an attitude to give the students a short tour and then have them spend the rest of the practice period in laboratories. **Such practice is not acceptable on our part.**

During their summer practice, students should consider themselves as temporary personnel of the plant. Thus, they are expected to function similar to other personnel, such as an ordinary employee, technician, or pre-engineer, depending on their assignment. They are expected to learn during the practice, but simultaneously **they must serve the plant.**

Students, during their first summer training, should probably consider material and energy balance applications, pump work calculations, or thermodynamic analysis on **a suitable unit or system of the plant.** A steam generator might be a typical example. It is highly desirable for students having their second summer practice to get involved with more sophisticated equipment related to **fluid flow, heat and mass transfer units and/or reactors** (if applicable) and present calculations regarding those systems.

SUMMER PRACTICE ACTIVITIES

1. Summer Practice Program Coordinator informs students about summer practice in meetings and approves or allocates workplaces,
2. Students, after completing their practice, register to CHME 300 or 400 during the registration period of the Fall Semester.
3. Summer practice work is recorded and presented in two written formats:

    a) A **Notebook written in English** of about 50 pages in which all the work carried out during practice is recorded **daily** in sufficient detail, then approved, signed and placed in a sealed envelope by a related plant manager,

    b) A **Summer Practice Report**, not exceeding 5000 words, which should include specific information about the plant, work done by the student, and personal opinions and impressions of the student about the plant.
4. Both Summer Practice Reports and Daily Notebooks should be submitted by the deadline announced on the ODTUclass course page. Summer Practice Reports should be submitted **online, as both word file and pdf file, on ODTUclass** at the allocated folder while the Daily Notebooks are submitted to the **Summer Practice Program coordinator**. Late reports will not be accepted. This will cause the students to repeat their summer practice.
5. The confidential "Summer Practice Performance Sheet", approved by plant authorities must also be submitted to the **Course coordinator (along with the daily notebooks)**. **The students are strongly recommended to bring this sheet themselves in a closed envelope**. Some companies may prefer to send this sheet directly to the University. In such cases, the student should follow its receipt by the University. An **Unsatisfactory (U)** grade will be given to students whose performance sheets have not been received by the University before the end of the Fall semester.
6. **The notebook and the report are evaluated by the assigned supervisor and the outcome is reported back to the students by the announced date**. **The supervisor may accept the report or may ask for a modification. In such a case the corrected report has to be submitted to the supervisor by the announced date.**
7. Supervisors will either give a '**Satisfactory (S)**', '**Unsatisfactory (U)**' or **'Incomplete (I)'** grade.
8. **Students who get a U grade must repeat the practice next summer at a different plant and has to enrol on the course once again.**
9. All graded reports and notebooks will be collected at the end of the semester from the supervisors by the Program Secretariat and archived.

GRADING POLICY

The report submission will be done in two parts. In the first part, you will upload your report on the relevant course (CHME 300 or 400) on ODTUclass by the designated deadline, **both as a word file and pdf file**. You will then receive feedback on this report. **The first draft of your report will be graded over 20%.** Following the corrections that may or may not be required in the report, you will submit a final report with the applied corrections which will be printed and bound with a spiral cord by the designated deadline. **The final report will be graded over 80%. The minimum passing grade is above 60 with letter grade of S (satisfactory).** Failing to collect enough points will lead to grade letter of U (unsatisfactory). The letter grade of I (incomplete) will be given to students failing to supply required documents by the allocated deadlines and may be changed to U or S with the completion of requirements. The students failing to supply all required documents will receive I (incomplete) letter grade.

Following the submission of the final report, the students will be called for an oral examination to answer several questions regarding their internship. The oral exam does not contribute to grading. However, failing the oral examination could lead to receiving a letter grade of U regardless of the points collected.

SUMMER PRACTICE REPORT

An important aspect of summer practice is to give students a chance to develop their skills in preparing a technical report. Such a report must reflect what the student has done in the plant. The report should preferably be completed during the practice.

The actual work done is recorded in the Daily Notebook, thus the Report must present descriptive information about the plant and its processes; have an orderly presentation of the work done, without a repetition of what is already present in the notebook; a personal view about the plant and its practices.

The content of the report should be limited to a total of 5000 words; that means one should be selective in what is to be presented.

The requirements of the internship report may be summarized as:

a. The report should be in English and prepared with a word processor. Initially, a soft copy should be uploaded online (on ODTUclass). After receiving feedback from the responsible instructor, the student should apply any correction necessary on the final version of their report, and then print and bind the report and submit it to the instructor by the allocated time.

b. The main body of the text should be in logical order. Titles and sub-titles should be presented in a table of contents in the same order, in the same font and format as they appear in the text.

c. Drawings should conform to standards. Table numbers and titles should be at the top of the tables, while figure captions should be at the bottom. Curves on a graph should not be plotted by hand drawing. Graphs should be prepared by software such as Excel while the appearance on the page, the coordinates, the fonts, and other details must be carefully selected and organized.

d. References to the sources cited in preparing the report must be indicated by conventional means (e.g., by numbers or by the author's surname and year, “Köksal, 2001”). References must be listed orderly (by consecutive numbers or alphabetically) and presented in the “References” section.

e. By using CHME Internship Report Template ensure that you follow the required format and include the important pages.

SUMMER PRACTICE FORMAT

A format for a summer practice report is given below. The format will be the same for all reports; details may vary depending on the plant.

- **Title Page:** This is the cover page of the report. It should include at least the following: The heading of the Summer Practice Report; **CHME 300 or CHME 400,** as appropriate; the year and the name of the plant where the practice is conducted, the names of the University, the Department, and the student.
- **Approval Page**: The approval Page should be placed here.
- **Abstract:** An abstract gives the essence of the report (usually less than one page). The abstract is written after the report is completed. It must contain the purpose and scope of practice, the actual work done in the plant, and the conclusions arrived at. **CHME 400 reports** should include a brief statement indicating where and when the practice of CHME 300 had been completed.
- **Table of Contents:** This page presents all the main and sub-titles appearing in the report, and should be accompanied by the corresponding page numbers.
- **The Company:** This section gives general information describing the company and its main area of activity, and usually contains the following:
  - Name, location, and a brief history of the company,
  - Products, production method (batch/continuous), number of shifts in the plant,
  - Installed plant capacity (and, if different, the actual production capacity),
  - Brief technical specification of products,
  - Main raw materials and their sources (domestic or foreign),
  - Main consumers or sectors (domestic or foreign) of the products,
  - A scheme describing the organization of the company,
  - Number of employees and the breakdown concerning their functions,
  - The functions of chemical engineers in the plant.

- **Production Processes:** This section should contain a **summary** of various aspects and processes of production. **Operations, operating conditions and chemical/physical changes must be explained with reference to a process flow diagram prepared by the student.** Detailed process flow diagrams provided by the company should be presented in Appendices. This section should be reasonably short, however, students usually tend to "exaggerate", since "rich sources" are available in the plant. **Do not use such material or material from internet sources as they are received**. **Contents obtained** from all those sources should be first read and digested and then **written in your own words.**

- **Plant Auxiliaries:** This section should contain a brief description of auxiliary units and main utilities. Some titles of interest could be the following (if applicable):
  - Process utilities (water, steam, air, energy production and distribution)
  - Measurement and control of process parameters
  - Routine and control laboratories; quality control departments, ISO 9000 studies
  - Water treatment for process use, waste treatment for environmental protection
  - Storage and transportation; safety and fire protection
  - Routine and preventive maintenance

- **Work Done in the Plant:** This is the most important section since it reflects the activities of the student in the plant. The academic supervisor evaluating the report will be more interested **in this section than any other section of the report**. Contents written in the **Daily Notebook** will be important in evaluating the work done by the student. Students should present in this section,
  - Measured or collected data of various operations, and their interpretation,
  - Detailed process flow diagrams of units on which they have concentrated,
  - Sample calculations, presentation of results in appropriate form

- **Calculations:** The presentation of any calculation should follow the following steps:
  - A proper **statement of the problem** considered and the purpose of making the calculations. A short description of the unit studied and the available data (e.g. flow rate, temperature, pressure, composition, etc.).
  - A clear **analysis of the problem**: Itemization of knowns and unknowns and a method of attack to find the unknowns.
  - A sample calculation of the problem. Checking the validity of the solution.
  - An **evaluation of the results**. Checking internal consistency of results.
- **Discussion and Conclusions:** The student should discuss various aspects of plant operations, in particular those related to production, productivity, safety, environment, etc., and should arrive at some conclusions. Personal observations about the plant and the overall impression obtained by the student may also be included. He/she may present recommendations with respect to plant operations. Additionally, the data collected, the methods utilized, and the results obtained should be carefully discussed. Finally, the personal gain obtained during summer practice should be briefly summarized.
- **References:** Literature sources used in the preparation of the report should be listed conforming to accepted standards.
- **Nomenclature:** This should be added if symbols are used extensively.
- **Appendices (if needed):** This section contains additional data and information considered to be relevant to the report, but not appropriate to be included in the main text. Original or prepared tables, drawings, flow sheets, plant layouts, product specification sheets and the like can be presented in Appendices. This section may be divided into subsections such as Appendix A, Appendix B, etc.

The internship report should follow the font and paragraph settings indicated below.

- The font theme should be Times New Roman and the size of
  - Body text: 12 pt
  - Headings 1: 20 pt, Bold
  - Headings 2: 18 pt, Bold
  - Headings 3: 16 pt, Bold
- Line spacing: 1.5
- Paragraphs should be "justified".
- Headings should be numbered as:

1 Heading 1 (e.g. Chapter 1)

1.1 Heading 2 (e.g. Section 1.1)

1.1.1 Heading 3 (e.g. Section 1.1.1)

- Leave a margin of 2.5 on the left side, and a margin of 1.5 on the right side of the page.
- Every page, except the title page, should have a page number. You need to use Roman numerals, i.e. i, ii, iii, etc., for the introductory sections, e.g. Abstract, Table of Contents, etc., and Arabic numerals, e.g. 1, 2, 3, etc., in the main text body and begin the page numbering at 1 at the start of Chapter 1.
- Tables and figures:
  - Should be clearly captioned and numbered. Give cross-reference to the tables and figures in the text using their numbers.
  - The table names and numbers should be on a separate page under the List of Tables.
  - Similarly, the figure captions should be under List of Figures on a separate page.
  - The table captions should be placed above the table, while the figure captions should be placed below the figures.
- Use standard abbreviations and engineering notations, and list them under "Abbreviations" on a separate page, following the List of Figures page.
- Follow the rules of significant figures in your calculations and in their results.
- All major sections should start on a new page, otherwise, you should continue with the next subsection when you are writing
- Do not exceed the word limit of 5000 words.

SUMMER PRACTICE FINAL REPORT

When submitting a finalized report:

- It should be bound, with a spiral cord.
- The report and the notebook should be securely bound together.
- Write only on one side of the paper (if the Internship Template is used, this point is done automatically).
- Material should be put into proper tabular and graphical form whenever appropriate
- Abstract should be placed before the Table of Contents
- The same captions should be used in the Table of Contents and the actual text
- In figure and table captions, watch for the use of capital and regular letters
- In the abstract, the aim is not to describe the contents but give some factual information.

On the next pages, a sample of the "title page" and a sample of a "table of contents" are provided. You should conform to their format.

MIDDLE EAST TECHNICAL UNIVERSITY

NORTHERN CYPRUS CAMPUS

CHEMICAL ENGINEERING PROGRAM

SUMMER PRACTICE I REPORT

Submitted by : (name and number)

Submission Date: (dd/mm/year)

COMPANY : (official name of company)

Plant: (name of plant)

Section: (name of section)

Training Period: (dd/mm/year to dd/mm/year)

Kalkanlı – Güzelyurt – NORTHERN CYPRUS

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