DE ANZA COLLEGE
Business and Computer Applications Division

CDI (Computer Aided Design and Digital Imaging)

GREEN SHEET
Courses: CDI 70 and 71

Instructor: L Gary Lamit
Room: E35 (distance learning)
E-mail: lgl@cad-resources.com lamitgary@fhda.edu
WEB Site www.cad-resources.com
Text and Reference: Creo Parametric textbook – Cengage Learning
Overview: 12-week Distance Learning

Catalyst: Distance learning and on-campus classes both use Catalyst to manage every aspect of the course. All materials and information can be accessed from any computer connected to the web including lectures.

Each individual lesson/project/exercise will be graded on a scale of 1-4 according to the accuracy, clarity and completeness of work. The final grade for this course is also based upon the submittal of a Student Documentation Package:

Make a WORD, PDF, or Power Point document of screen captures of every one of the CAD projects. Zip the file and upload onto Catalyst.

Basis for Grade: Your documentation package will contain all required work and will be graded based on completion and correctness of each assignment. All grades and submittals will be controlled through catalyst.

The student's score is calculated on the basis of his/her total raw score divided by the total number of possible points assigned.

CDI 70 | **Cre Parametric (Beginning)** | **4 Unit(s)**

Requisites: Requisite/Advisory: None.

Formerly:

Grading: Graded

Hours: Two hours lecture, six hours laboratory (96 hours total per quarter).

Also Listed AS:

Description: Fundamentals of part design, using Creo Parametric. Application of operating system, software, hardware, and peripherals in creating 3D manufacturing models with Creo Parametric.

Course Justification: This course is a 3-D parametric modeler which is similar to SolidWorks, Inventor, NX, and other solid modeling programs. Locally Creo Parametric is used as the primary design and engineering tool in most large-scale industries including aerospace and defense companies like Loral, Lockheed, and BAE and a variety of medical device and instrument companies such as Stryker Endoscopy and Intuitive Surgical. Google also uses Creo Parametric as their primary design tool. This course enables a student to create and document mechanical designs and also coordinate the database management of small though large-scale products. De Anza has seen an continued high enrollment and job placement in local and State industry for those using Creo Parametric over 15 years.

II. Course Objectives

A. Master software and hardware requirements.
B. Grasp system usage, desktop features, and folder creation and manipulation.
C. Apply options for environment settings.
D. Extract drawings and generate assemblies from 3D designs models

III. Essential Student Materials

None.

IV. Essential College Facilities

None.

V. Expanded Description: Content and Form

A. Master software and hardware requirements.
1. NT workstations.
2. Software system requirements.
3. CADTRAIN training software.
B. Grasp system usage, desktop features, and folder creation and manipulation.
1. Login procedure.
2. Desktop features.
3. Create folders.
C. Apply options for environment settings.
1. Introduction.
2. Starting the software.
3. The software windows.
4. Modes.
5. Multiple graphics windows.
6. Changing directory.
7. Creating file.
8. File naming.
9. Saving and retrieving.
D. Extract drawings and generate assemblies from 3D designs models

1. Sketching and modeling.
2. Modifying designs
3. Dimensioning sketches
4. Assembly creation
5. Drawing extraction
6. Formatting drawings

VI. Assignments

A. Lab projects.
B. Worksheets.
C. Reading from textbooks and references.

VII. Methods of Instruction

Lecture and visual aids
Discussion of assigned reading
Discussion and problem solving performed in class
Quiz and examination review performed in class
Homework and extended projects
Laboratory experience which involve students in formal exercises of data collection and analysis

VIII. Methods of Evaluating Objectives

A. Completion of lab projects.
B. Comprehensive design projects.
C. Comprehensive final exam.

IX. Texts and Supporting References

A. Examples of Primary Texts and References
1. Lamit, Louis Gary, Creo Parametric, Cengage, 2014.
B. Examples of Supporting Texts and References
1. None

CDI 71 **Creo Parametric (Intermediate)** **4 Unit(s)**

Requisites: CDI70 or consent instructor

Formerly:

Grading: Graded

Hours: Two hours lecture, six hours laboratory (96 hours total per quarter).

Also Listed AS:

Description: Assembly creation and drawing output using Creo Parametric.

Course Justification: This course is a 3-D parametric modeler which is similar to SolidWorks, Inventor, NX, and other solid modeling programs. Locally Creo Parametric is used as the primary design and engineering tool in most large-scale industries including aerospace and defense companies like Loral, Lockheed, and BAE and a variety of medical device and instrument companies such as Stryker Endoscopy and Intuitive Surgical. Google also uses Creo Parametric as their primary design tool. De Anza has seen an continued high enrollment and job placement in local and State industry for those using Creo Parametric over 15 years. This course deepens the student's ability to create and document mechanical designs and also coordinate the database management of large-scale projects such as tracked vehicles and aircraft and smaller scale designs such as laptops at Google.

II. Course Objectives

A. Create assemblies of 3D components using constraints.
B. Construct exploded assemblies from assembled components.
C. Use and alter drawing formats, title blocks, and views.
D. Derive 2D details from 3D solid models.
E. Establish a variety of views types including section and auxiliary views on a drawing.
F. Generate assembly drawings and produce BOM and title block tables.
G. Produce drawings with exploded views.

III. Essential Student Materials

None.

IV. Essential College Facilities

None.

V. Expanded Description: Content and Form

A. Create assemblies of 3D components using constraints.
1. Assemble components to form an assembly.
2. Create a subassembly.
3. Understand and use a variety of assembly constraints.
B. Construct exploded assemblies from assembled components.
1. Create exploded views.
2. Edit exploded views.
3. Create unique component visibility settings.
4. Move and rotate components in an assembly.
C. Use and alter drawing formats, title blocks, and views.
1. Create drawings with views.
2. Create and save title blocks and sheet formats.
3. Change the scale of a view.
4. Display appropriate views for detailing a project.
D. Derive 2D details from 3D solid models.
1. Use ASME standards to detail drawings.

2. Dimension a part.
3. Create and save configuration files.
4. Add geometric tolerancing information to a drawing.
E. Establish a variety of views types including section and auxiliary views on a drawing.
1. Identify the need for sectional views to clarify interior features of a part.
2. Establish configuration files to use when detailing and creating section drawings.
3. Identify cutting planes and the resulting views.
4. Create sections along datum planes.
F. Generate assembly drawings and produce BOM and title block tables.
1. Create an assembly drawing.
2. Generate a parts list from a bill of materials (BOM).
3. Balloon an assembly drawing.
4. Create a section assembly view and change component visibility.
5. Create a table to generate a parts list automatically.
G. Produce drawings with exploded views.
1. Create drawings with exploded views.
2. Use multiple sheets.
3. Make assembly drawing sheets with multiple models.
4. Create balloons on exploded assemblies.

VI. Assignments

A. Lab projects.
B. Worksheets.
C. Reading from textbooks and references.

VII. Methods of Instruction

Lecture and visual aids
Discussion of assigned reading
Discussion and problem solving performed in class
Homework and extended projects
Laboratory experience which involve students in formal exercises

VIII. Methods of Evaluating Objectives

A. Completion of lab projects.
B. Comprehensive design projects.
C. Comprehensive final exam.

IX. Texts and Supporting References

A. Examples of Primary Texts and References
1. Lamit, Louis Gary. Creo Parametric, Cengage, 2014.
B. Examples of Supporting Texts and References
1. None