

## NEW RIVER COMMUNITY COLLEGE

DUBLIN, VIRGINIA

## COURSE PLAN

Course Number and Title: DRF 241-01 Solid Modeling IPrepared by: Jeff Levy Fall, 2009  
(Instructor) (Date)Approved by: \_\_\_\_\_ Fall, 2009  
(Dean) (Date)**I. Course Description**

Focuses on teaching students the design of parts by parametric solid modeling. Topics covered include, but are not limited to, sketch profiles; geometric and dimensional constraints; 3D features; model generation by extrusion, revolution, and sweep; and the creation of 2D drawing views that include sections, details and auxiliary. Lecture 2 hours, Laboratory 2 hours. Total 4 hours per week. (3 credits)

**II. Introduction**

Uses Autodesk AutoCAD and Inventor software to teach advance applications of Solid Modeling using Computer Aided Drafting and Design. Explore components of a workstation environment, intermediate 2D and 3D commands and drawings, display and editing commands; printing and plotting techniques.

**III. Specific Objectives**

The student will give evidence that he/she has developed a basic understanding and skills in drawing using Autodesk Inventor by demonstrating:

1. Advanced 3D Solid Modeling techniques.
2. Utilizing user interface, commands, sketching, profiling, constraining, and dimensioning.
3. How to view, extrude, revolve and edit mechanical parts.
4. Knowledge and usage of sketch planes, Boolean operations, fillets, chamfers, holes and arrays.
5. Intermediate mechanical skills in 3D solid modeling and editing.
6. Utilization of drawing views and intermediate annotations.
7. How to establish work axis, work planes, work points, 3D path, and lofting.
8. Intermediate mechanical dimensioning, constraining and sketching techniques.
9. Intermediate mechanical modeling techniques.
10. Building mechanical assemblies.
11. Final project

**IV. Instructional Procedures**

1. Each new unit of material will be discussed in class. It will be aided by the use of demonstrations, text references, and instructor lead tutorial sessions.
2. The student will complete chapter exercises or assigned projects.
3. Assignments will be completed by the students using Autodesk Inventor software program and turned in at the assigned due dates.

## V. Instructional Materials

1. **Textbook: Autodesk Inventor R2010 Essentials Plus:  
By; Banach, Jones & Kalameja, c. 2009.  
Delmar Publishing, ISBN: 10: 1439055726**
2. Materials and equipment to be used by instructor: video tapes, overhead slides, PowerPoint presentations, and chapter exercises, CD's, marker boards, on-line tutorials, computer and a variety of other multimedia devices.
  - **Materials and equipment to be provided by the student:**
    - a. 2GB min thumb drive(USB drive)
    - b. Sketch Pad
    - c. Note Book
    - d. WORK & Willingness to learn

## VI. Course Content

1. Beginning / Intermediate **Inventor 2010** commands Review
2. User Interface change from 2009
3. Creating, Constraining and Dimensioning 3D Models
4. Creating Full and Exploded assembly drawings
6. Creating threads
8. Applying Geometric Tolerancing and Dimensioning to 3D models
9. Applying materials
10. Lighting Techniques
10. Presentation of models
12. Learning the Design Process

**VII. Evaluation**

The numerical range for grades will be:

A = 91 - 100.....	..... Chapter Assignments	45%
B = 81 - 90.....	.....Projects	45%
C = 71 - 80.....	..... Class Participation	10%
D = 61 - 70		
F = 60 or below		

**VIII. Attendance**

Regular attendance at classes is **required**. When absence from a class becomes necessary, it is the **responsibility** of the student to both inform the instructor prior to the absence and schedule makeup time after the absence. Frequent unexplained absences may result in a dismissal from the course. Student’s absence from the first two weeks of class is automatically withdrawn. The student is responsible for making up all work missed during an absence.

**IX. Cheating Policy**

NRCC policy on cheating (found in current Student Handbook and elsewhere) will be enforced.

**X. Withdrawal Policy**

**Student Initiated Withdrawal Policy**

A student may drop or withdraw from a class without academic penalty during the first sixty percent (60%) of a session. For purposes of enrollment reporting, the following procedures apply:

- a. If a student withdraws from a class prior to the termination of the add/drop period for the session, the student will be removed from the class roll and no grade will be awarded.
- b. After the add/drop period, but prior to completion of sixty percent (60%) of a session, a student who withdraws or is withdrawn from a course will be assigned a grade of "W." A grade of “W” implies that the student was making satisfactory progress in the class at the time of withdrawal, that the withdrawal was officially made before the deadline published in the college calendar, or that the student was administratively transferred to a different program.
- c. After that time, if a student withdraws from a class, a grade of "F" will be assigned. Exceptions to this policy may be made under documented mitigating circumstances if the student was passing the course at the last date of attendance.

A retroactive grade of “W” may be awarded only if the student would have been eligible under the previously stated policy to receive a “W” on the last date of class attendance. The last date of attendance for a distance education course will be the last date that work was submitted.

Late withdrawal appeals will be revised and a decision made by the Coordinator of Student Services.

### **Instructor Initiated Withdrawal Policy**

A student who adds a class or registers after the first day of class is counted absent from all class meetings missed. Each instructor is responsible for keeping a record of student attendance in each class. Students who have not attended class by the last day to drop class and receive refund must be deleted by the instructor during the following week. No refund will be applicable.

When a student's absences equal twice the number of weekly meetings of a class (equivalent amount of time for summer session), the student may be dropped for unsatisfactory attendance in the class by the instructor.

When an instructor determines that absences constitute unsatisfactory attendance, a Faculty Withdrawal Form should be completed and submitted to the Admissions and Records Office within five days of when the student met the withdrawal criteria. The last date of attendance must be documented. A grade of "W" will be recorded during the first sixty percent (60%) period of a course. Students withdrawn after the sixty percent (60%) period will receive a grade of "F" except under mitigating circumstances when a letter of appeal has been submitted by the student. A copy of this documentation must be placed in the student's academic file.

The student will be notified of the withdrawal by the Admissions and Records Office. An appeal for reinstatement into the class may be approved only by the instructor.

Since attendance is not a valid measurement for Independent and Distance Learning (IDL) courses, students may be withdrawn due to nonperformance. Students should refer to his/her IDL course plan for the instructor's policy.

**NOTE: Instructor reserves the right to change any of the above to reach course objectives.**