IE 630 – MULTIOBJECTIVE OPTIMIZATION

GUIDANCE FOR FINAL PROJECT REPORT

Please use the following guidelines for preparing your final project report.

1. Deadline: **11:59 p.m. on April 30, 2020**
2. Your code:
    a. Upload the code on blackboard
    b. Provide instructions on how to run your code. **Your code will not be evaluated if you do not provide clear instructions on how to run your code.**
    c. Your code should ask if the user wants to use the default parameter values (already provided to you in class) or if the user wants to enter new values for the parameter. If the user wants to enter new values, your code should accept the new values by prompting the user to enter them.
    d. Your code should output in a friendly format
        i. The total dosages received by the normal tissue, OARs and the tumor.
        ii. The total amount of energy transmitted by the linear accelerator at each of the eight angles.
        iii. The total amount of time the beam is turned on at each of the eight angles.
3. Your report should contain
    a. 1-2 paragraph description of your formulation.
    b. A description of the decision variables used in the formulation.
    c. A description of the constraints in the formulation; do not just list the constraints; explain in words the constraints you included.
    d. A description of the objective functions in the formulation; do not just list the objective function; explain in words what the objective functions represent.
    e. The values of your decision variables—represented visually, if possible—at **three** adjacent efficient solutions that you generate.
    f. The dosages received by the tumor, OARs and the normal tissue at the above **three** adjacent efficient solutions that you generate.

4. **Late submissions will NOT be accepted for any reason.**

Assessment:

1. Project 1.1: **8%** (submission grade)
2. Project 1.2: **8%** (submission grade)
3. Project 1.3: **10%** (submission grade)

4. Final report:
    a. Code:
        i. Well-commented? **4%**
        ii. Meets the specifications and runs without syntax/logical errors for default values of the parameters? **10%**
        iii. Meets the specifications and runs without syntax/logical errors on new parameter values? **10%**
        iv. Does it deliver the minimum dosage to the tumor? **10%**
        v. Is the dosage to the normal tissues and OARs under limits? **10%**
    b. Report:
        i. Formulation described clearly? **10%**
        ii. Variables, constraints, objective functions described clearly? **10%**
        iii. Results presented clearly? **10%**

Letter Grades:

Aggregate scores will be mapped to letter grades according to the following table.

Score	Grade	Score	Grade
97+	A+	77-79.99	C+
93-96.99	A	73-76.99	C
90-92.99	A-	70-72.99	C-
87-89.99	B+	60-69.99	D
83-86.99	B	0-59.99	F
80-82.99	B-		