



**National University of Engineering (UNI)**  
School of Computer Science  
Syllabus 2024-II

**1. COURSE**

CS351. Topics in Computer Graphics (Elective)

**2. GENERAL INFORMATION**

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|-----------------------------------|---|--|
| <b>2.1 Course</b>                 | : | CS351. Topics in Computer Graphics               |
| <b>2.2 Semester</b>               | : | 9 <sup>th</sup> Semester.                        |
| <b>2.3 Credits</b>                | : | 4  |
| <b>2.4 Horas</b>                  | : | 2 HT; 4 HP;                                      |
| <b>2.5 Duration of the period</b> | : | 16 weeks   |
| <b>2.6 Type of course</b>         | : | Elective   |
| <b>2.7 Learning modality</b>      | : | Face to face                                     |
| <b>2.8 Prerequisites</b>          | : | CS251. Computer graphics . (7 <sup>th</sup> Sem) |

**3. PROFESSORS**

Meetings after coordination with the professor

**4. INTRODUCTION TO THE COURSE**

In this course you can delve into any of the topics Mentioned in the area of Graphics Computing (Graphics and Visual Computing - GV).

This course is designed to perform some advanced course suggested by the ACM / IEEE curriculum. [Hug+13; HB90]

**5. GOALS**

- That the student uses computer techniques Graphs that involve complex data structures and algorithms.
- That the student apply the concepts learned to create an application about a real problem.
- That the student investigate the possibility of creating a new algorithm and / or new technique to solve a real problem

**6. COMPETENCES**

- 1) Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions. (Usage)
- 6) Apply computer science theory and software development fundamentals to produce computing-based solutions. (Usage)

**7. TOPICS**

<b>Unit 1: Advanced Topics on Computer Graphics (0 hours)</b>	
<b>Competences Expected:</b>	
<b>Topics</b>	<b>Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• CS355. Advanced Computer Graphics</li> <li>• CS356. Computer animation</li> <li>• CS313. Geometric Algorithms</li> <li>• CS357. visualization</li> <li>• CS358. Virtual reality</li> <li>• CS359. Genetic algorithms</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced Topics on Computer Graphics</li> </ul>
<b>Readings : [Soars022S], [Soars022W], [Soars022T], [Cambridge06], [MacGrew99]</b>	

## 8. WORKPLAN

### 8.1 Methodology

Individual and team participation is encouraged to present their ideas, motivating them with additional points in the different stages of the course evaluation.

### 8.2 Theory Sessions

The theory sessions are held in master classes with activities including active learning and roleplay to allow students to internalize the concepts.

### 8.3 Practical Sessions

The practical sessions are held in class where a series of exercises and/or practical concepts are developed through problem solving, problem solving, specific exercises and/or in application contexts.

## 9. EVALUATION SYSTEM

\*\*\*\*\* EVALUATION MISSING \*\*\*\*\*

## 10. BASIC BIBLIOGRAPHY

[HB90] Donald Hearn and Pauline Baker. *Computer Graphics in C*. Prentice Hall, 1990.

[Hug+13] John F. Hughes et al. *Computer Graphics - Principles and Practice 3rd Edition*. Addison-Wesley, 2013.