

SEÑALES Y SISTEMAS

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FORMALIDADES

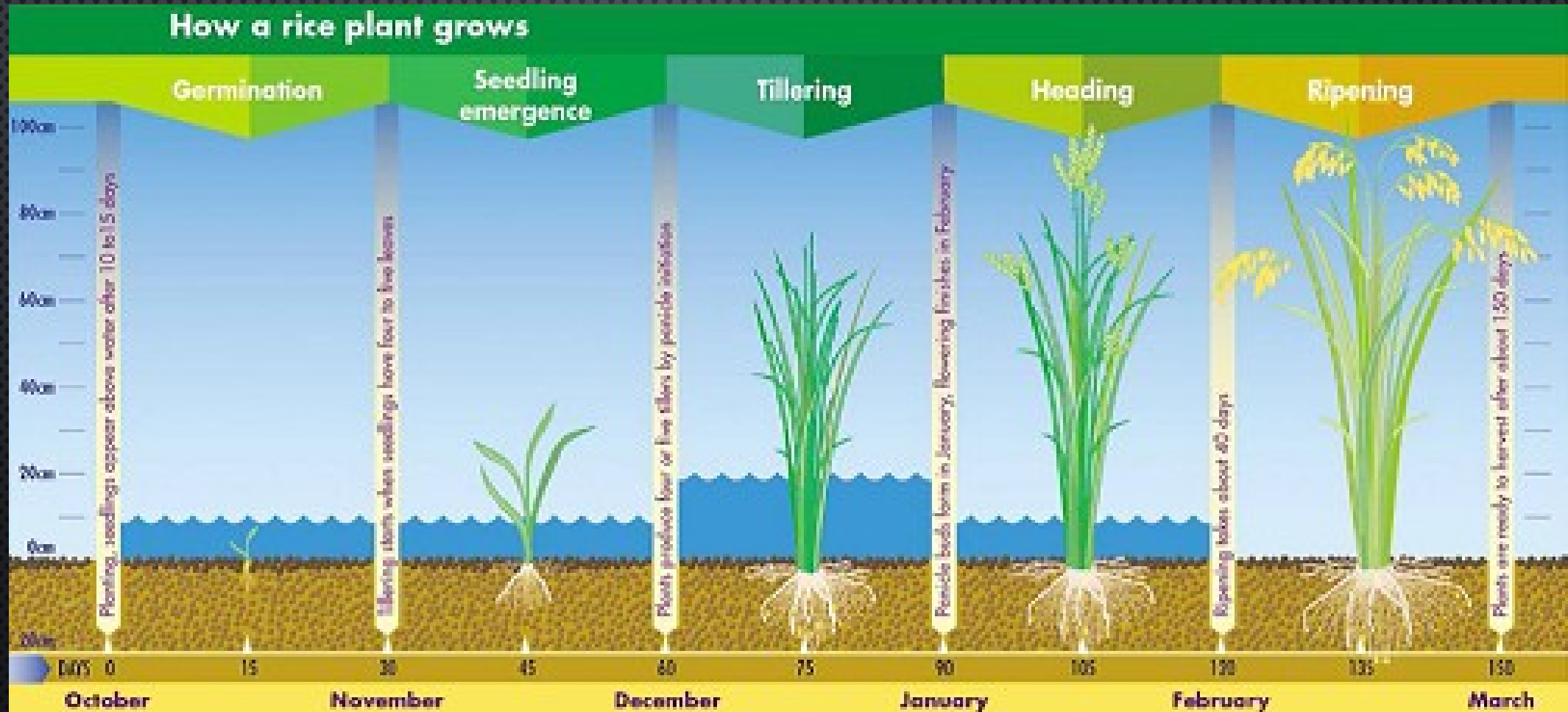
- CRÉDITOS: 10
- 2 CLASES TEÓRICO-PRÁCTICAS POR SEMANA
- EVALUACIÓN:
 - 7 ENTREGAS (1 CADA 2 SEMANAS)
 - PROYECTO FINAL

OBJETIVO

- DESCRIBIR SEÑALES
- CARACTERIZAR SISTEMAS
- MODELAR Y SIMULAR SISTEMAS FÍSICOS REALES

PROBLEMA MOTIVADOR

- CRECIMIENTO DE UN CULTIVO (ARROZ)



PROBLEMA MOTIVADOR

- OBJETIVO: PREDECIR LA COSECHA
- PREGUNTA: PORQUE PREDECIR?
- PREGUNTA: COMO PREDECIR?



Photosynthesis

When you get hungry, you might decide to raid the fridge or ask your mom to make you a sandwich. You do this because humans and animals get energy from the foods they eat.

Plants use light energy from the sun to produce the food they need to survive. This process is called photosynthesis.

INGREDIENTS

- Light Energy: Rays from the sun.
- Water: Gained by plants roots in the soil.
- Carbon dioxide: From the air.
- Chlorophyll: Present in cells of green plants.

1 SUNLIGHT
Light coming down from the sun is captured by the plant's cells. These tiny cells are what make up the part called a leaf.

2 CHLOROPHYLL
Inside some of these cells is a special pigment called chlorophyll. This is the substance that traps the sunlight to start the process of photosynthesis.

3 WATER
Water and carbon dioxide are two of the raw ingredients we use to do photosynthesis. These two ingredients are made of small, simple parts called molecules.

Water molecules
Oxygen atoms
Hydrogen atoms

4 Photosynthesis causes the water molecules to split, separating the hydrogen and oxygen atoms. The oxygen is released into the atmosphere.

OXYGEN

5 END RESULT
The sugar created by photosynthesis is sent to the rest of the plant for food.

FOOD
Carbon dioxide molecules
Oxygen atoms
Hydrogen atoms

That's how the sugar made by photosynthesis is used to make the food that we eat.

Labels in diagram: Sunlight, Soil, Root, Water, Carbon Dioxide, Oxygen, Chloroplast, Typical plant cell, Cell wall, Cell nucleus, Chloroplast, Chlorophyll, Stroma, Thylakoid, Thylakoid space.

Source: IGCSE Science (University of Malaya)

10-Day Weather Forecast

Graph









Table

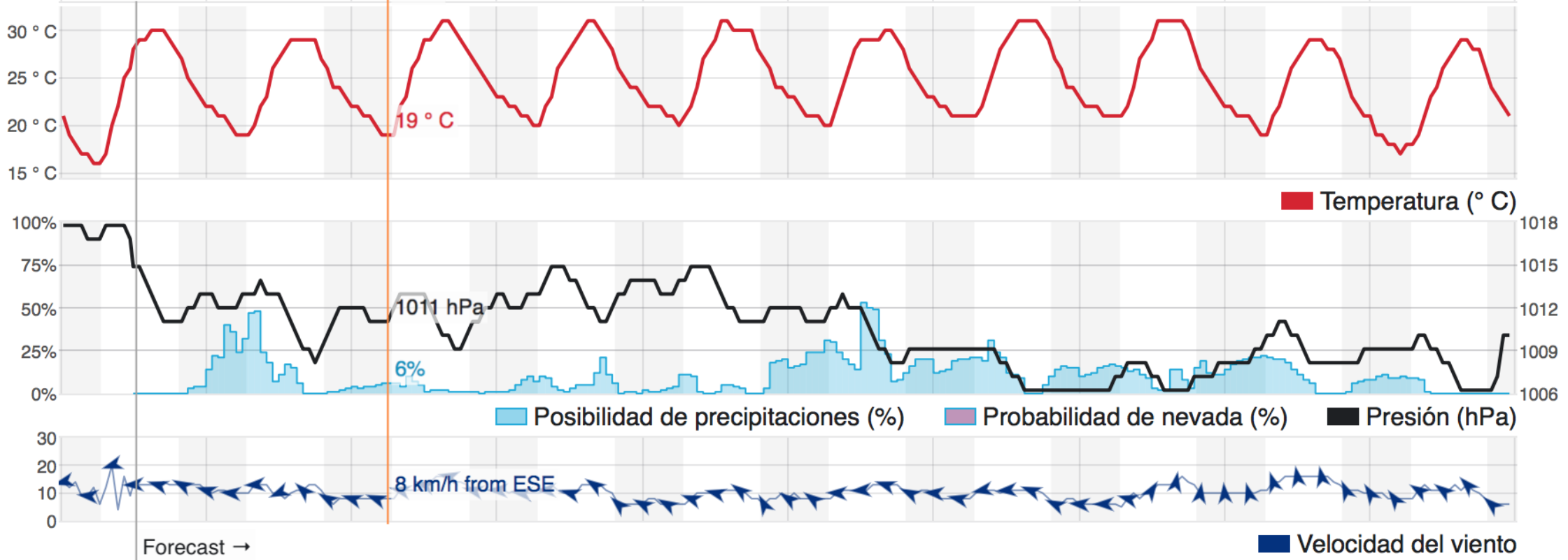
Descriptive

Daily

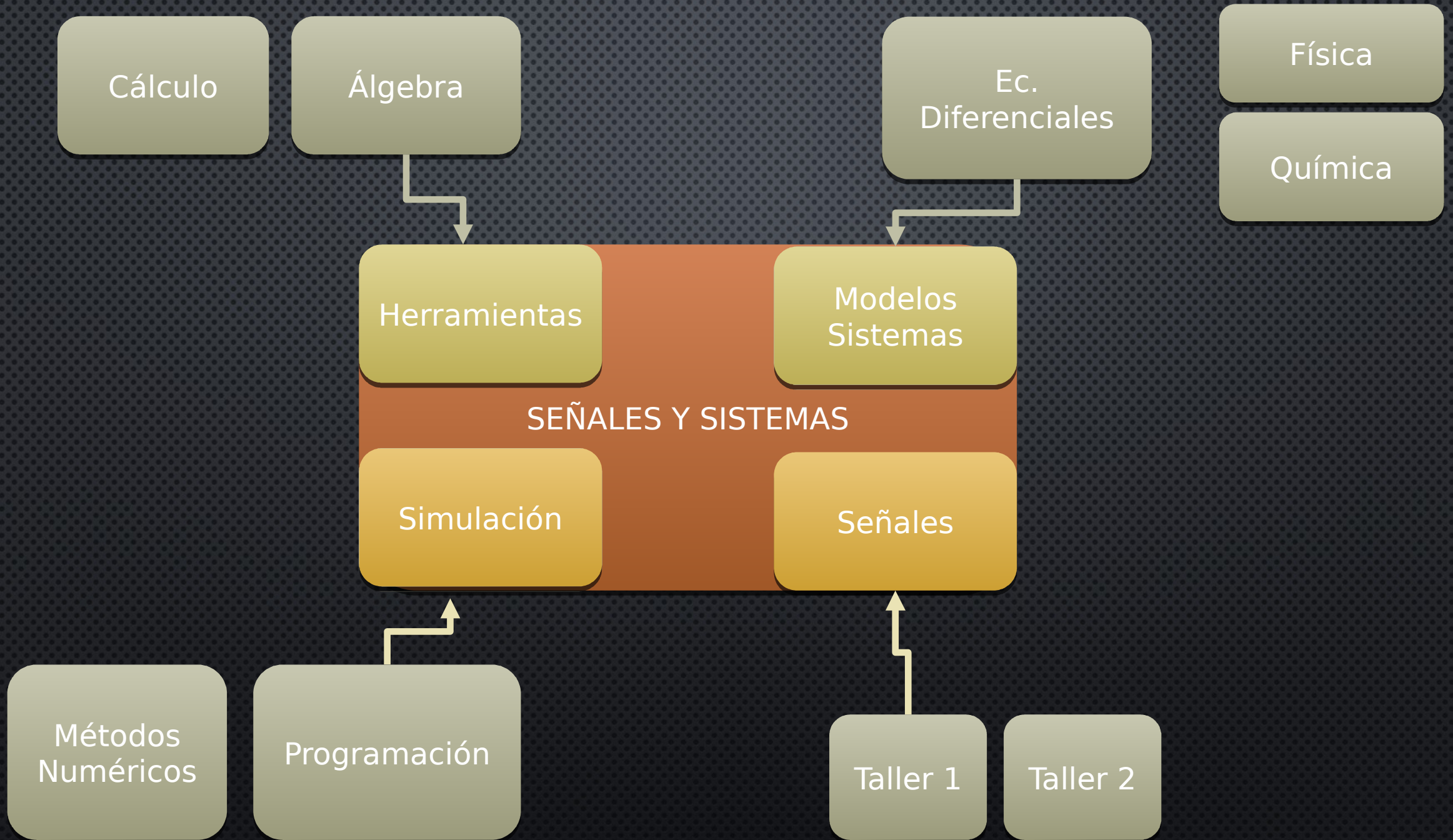
Hourly

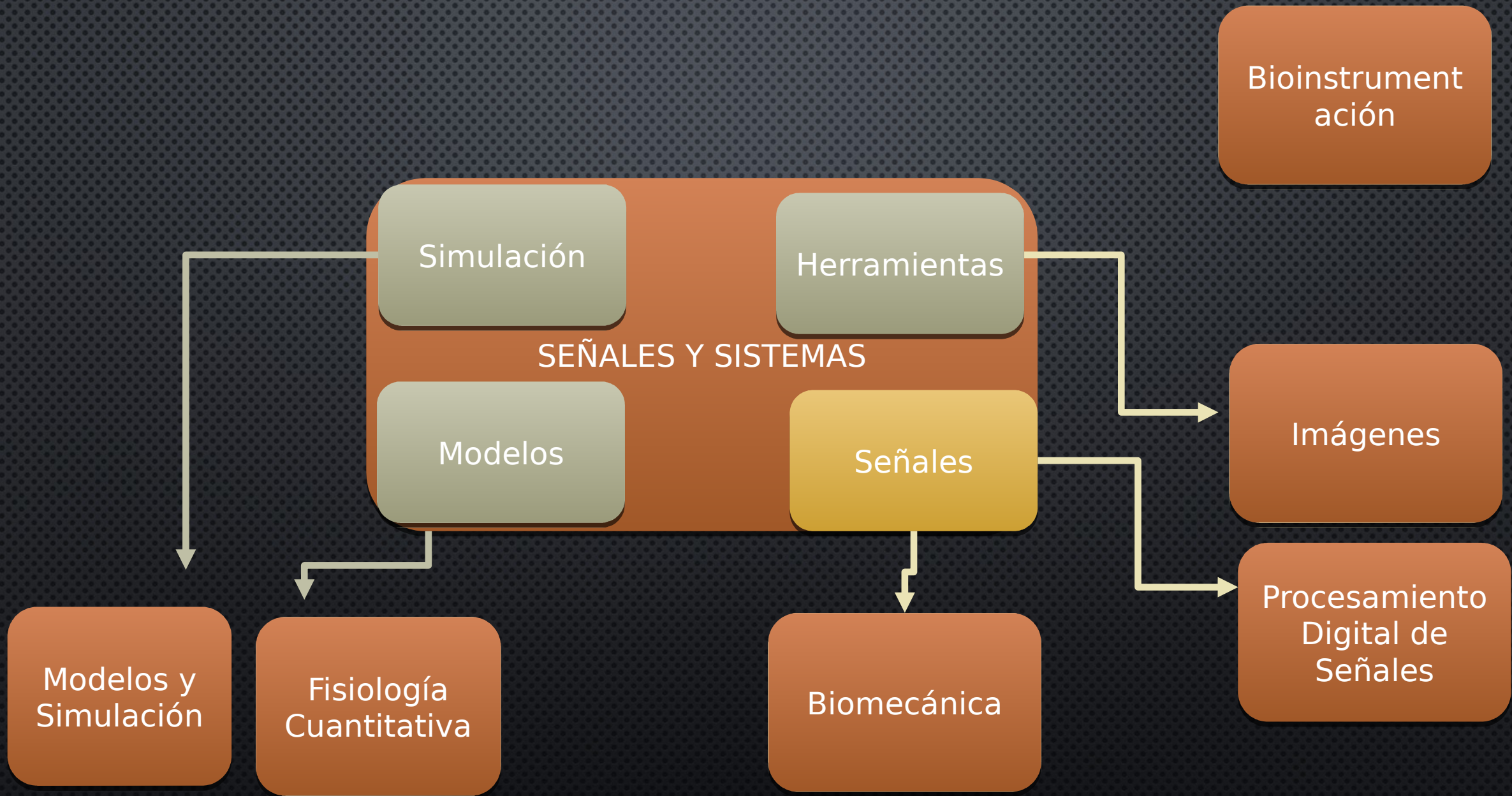
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Mon 02/26	Tue 02/27	Wed 02/28	Thu 03/01	Fri 03/02	Sat 03/03	Sun 03/04	Mon 03/05	Tue 03/06	Wed 03/07
31° 18°	30° 19°	31° 19°	31° 19°	32° 19°	31° 20°	32° 20°	32° 19°	30° 17°	29° 17°
									
Despejado	Probabilidad de tormenta	Despejado	Parcialmente nublado	Despejado	Probabilidad de tormenta	Despejado	Despejado	Despejado	Despejado
1 mm	1 mm	0 mm 6 am	0 mm	0 mm	5 mm	0 mm	0 mm	0 mm	0 mm



INSERCIÓN EN LA CARRERA





EJEMPLO INCUBADORA

- ENTRADAS Y SALIDAS COMO FUNCIONES VARIANTES EN EL TIEMPO
- FUNCIONES DISCONTINUAS Y CLASES C1

REPASO DE MATEMÁTICAS

SISTEMAS DE NÚMEROS

- NÚMEROS ENTERO
- GRUPOS, ANILLOS, CUERPOS

TIPOS DE FUNCIONES

- CLASIFICACIÓN SEGÚN REGULARIDAD

EJEMPLOS:

- VENDEDOR Y GEOMETRÍA
- LEYES UNIVERSALES
- SISTEMAS ELÉCTRICOS, TÉRMICOS, QUÍMICOS, MECÁNICOS, HIDRÁULICOS
- MODELADO:
 - ECUACIONES
 - SISTEMAS DE UNA VARIABLE
 - PROBLEMAS INVERSOS Y DIRECTOS
- CLASES DE PROBLEMAS

ESPACIOS VECTORIALES

- NÚMEROS REALES: DIMENSIÓN FINITA
- FUNCIONES: DIMENSION INFINITA