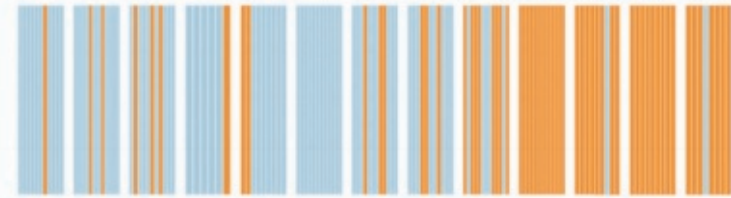


3º Ano, 1º ciclo Biologia e Biologia Marinha

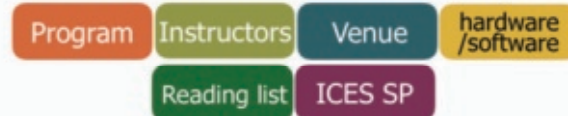
Evolution

Rita Castilho



Genetics in support of fisheries and aquaculture management

17-19 September 2019
Centre of Marine Sciences (CCMAR)
University of Algarve, Portugal



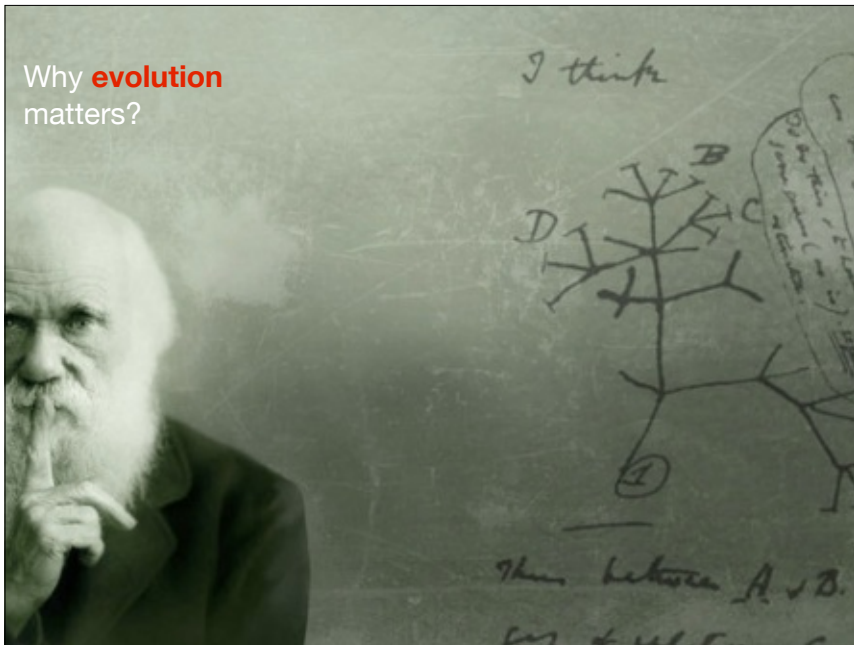
iMarCo2019
International Marine Connectivity Conference
September 23-25, Aveiro, Portugal

go to conference

ORGANIZING COMMITTEE

 Henrique Duarte UMinho/CEAM	 Rita Castilho UAlgarve/CCMAR	 Ana Pilella UAlgarve/CEAM	 Marina Andrade UAlgarve/CEAM	 Isabel Teixeira UAlgarve/CEAM	 Rui Albuquerque UAlgarve/CEAM
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Why **evolution** matters?

EVOLUTION: WHY DOES IT MATTER?

Evolution is...

change in living things through
descent with modification

EVOLUTION: WHY DOES IT MATTER?

Evolution is...

change in living things through
descent with modification

...quite a simple idea

EVOLUTION: WHY DOES IT MATTER?

Why should you (want to) learn about evolution?

EVOLUTION: WHY DOES IT MATTER?

Why should you (want to) learn about evolution?

1. It's true - we have evidence!

EVOLUTION: WHY DOES IT MATTER?

Why should you (want to) learn about evolution?

1. It's true - we have evidence!
2. It's interesting

EVOLUTION: WHY DOES IT MATTER?

Why should you (want to) learn about evolution?

1. It's true - we have evidence!
2. It's interesting
3. It's important

EVOLUTION: WHY DOES IT MATTER?

Why is evolution interesting?

The famous biologist Theo Dobzhansky (1900-1975) once said:

"Nothing in Biology Makes Sense Except in the Light of Evolution"

All life is the product of evolution



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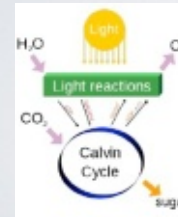
That includes everything you learn about in biology classes!



EVOLUTION: WHY DOES IT MATTER?

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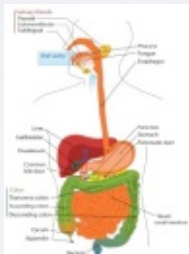
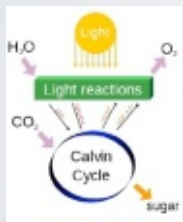


From photosynthesis...

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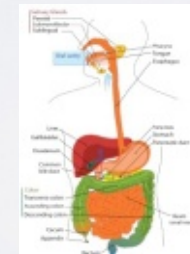
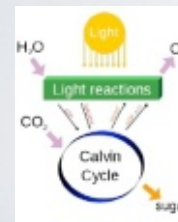


From photosynthesis... to the digestive system...

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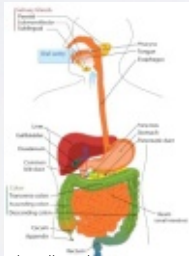
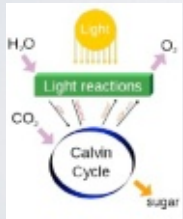


From photosynthesis... to the digestive system... to DNA...

EVOLUTION: WHY DOES IT MATTER?

Why is evolution interesting?

"Nothing in Biology Makes Sense Except in the Light of Evolution"



From photosynthesis... to the digestive system... to DNA... to eutrophication

EVOLUTION: WHY DOES IT MATTER?

Why is evolution interesting?

The famous biologist Theo Dobzhansky (1900-1975) once said:

"Nothing in Biology Makes Sense Except in the Light of Evolution"



All life is the product of evolution.

That includes everything you learn about in biology classes!

And can explain lots of other things....

EVOLUTION: WHY DOES IT MATTER?

Why is evolution interesting?

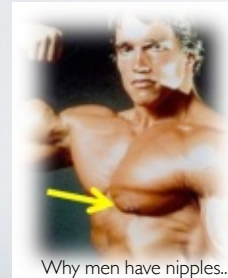
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EVOLUTION: WHY DOES IT MATTER?

Why is evolution interesting?

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Why men have nipples...

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Why men have nipples...

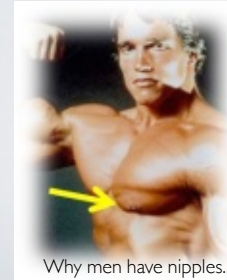


why teams in red are often successful...

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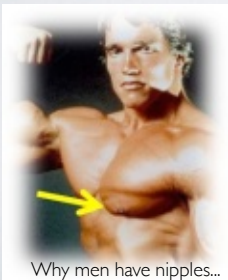


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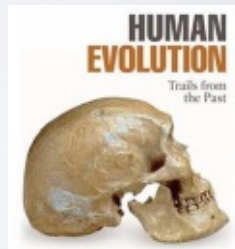
"Nothing in Biology Makes Sense Except in the Light of Evolution"



Why men have nipples...



why teams in red are often successful...



where we came from...

Esta unidade curricular tem um website dedicado, onde todas as informações pertinentes estarão disponíveis e a partir de onde os alunos poderão fazer os downloads dos documentos de estudo



<http://rcastilho.pt/EVO/>



Evolution

HORAS DE ESTUDO INDEPENDENTE: 90

HORAS DE CONTACTO: **54**

FUNCIONAMENTO:

T: 15 AULAS, 1.5H, 2/SEMANA

TP: 6 AULAS, 3H, 1/SEMANA

OT: 6 SESSÕES, 1H, 1/SEMANA

S: 5 SESSÕES, 1.5H, 1/SEMANA

Evolution

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Evolution

Actualização
Thursday, 7
September 2017
13:56

PROGRAMA

	DATA	TEMA	LEITURA
T01	19 SET	Introdução ao curso; organização; referência geral aos assuntos que serão abordados; navegação na página dedicada; avaliação. Evolução: facto ou teoria? O significado da palavra teoria em linguagem comum e em ciência.	
T02	21 SET	A aparente existência de controvérsia na Teoria da Evolução. Evolução cronológica da teoria da evolução; os idealistas, os realistas: Linnaeus, Hutton, Lamarck, Malthus, Cuvier, Lyell, Darwin, Wallace e Mendel; contribuições mais relevantes. A Síntese Moderna da Teoria da Evolução.	
T03	26 SET	Evidências que suportam a teoria da evolução; fósseis; órgãos vestigiais; embriologia; o material genético; filogenia; biogeografia e observação directa. Darwin e Wallace; contribuições. As observações de Darwin encapsuladas na "Origem das espécies".	
T04	28 SET	Equilíbrio de Hardy-Weinberg; o modelo de Hardy-Weinberg; os pressupostos de Hardy-Weinberg e derivação do modelo. Exemplo do teste de Hardy-Weinberg. Hipótese nula.	
T05	03 OUT	Factores evolutivos: o impacto evolutivo da selecção natural e da deriva genética.	

EVOLUTION: WHY DOES IT MATTER?

- Aprendizagem e aplicação de conceitos
- Pensamento crítico sobre os conceitos e ideias apresentadas e discutidas durante as aulas
- Estudo individual !!
- Ler !!

LER

LER

LER

LER

EVOLUTION: WHY DOES IT MATTER?

NÃO!

- Não tome notas "furiosamente" durante as aulas
- Não adie as leituras recomendadas.

EVOLUTION: WHY DOES IT MATTER?

SIM!

- ? Seja assíduo às aulas!
- ? Leia o material designado com antecedência.
- ? Descarregue os slides das aulas antes das aulas e se possível tenha o seu PC na aula com os slides, dessa forma pode tomar as notas imprescindíveis directamente nos slides.
- ? Tente imaginar possíveis questões sobre a matéria de forma a estimular a aprendizagem e compreensão da mesma.
- ? Participe nas actividades das aulas TP.

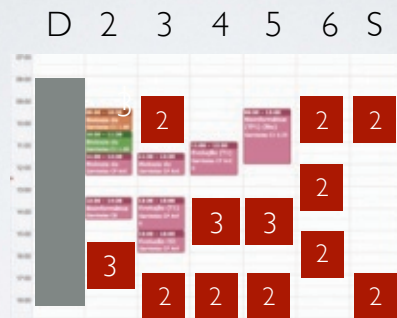
EVOLUTION: WHY DOES IT MATTER?

IMPORTANTE

- Objectivos
- Dedicção
- Perseverança
- Participação
- Cultura geral

EVOLUTION: WHY DOES IT MATTER?

HOW TO STUDY



EVOLUTION: WHY DOES IT MATTER?

ESTUDAR - ORGANIZAÇÃO

Fazer lista de tópicos a cobrir

Coligir material para ler

Dividir tempo adequadamente

Perceber **ritmo pessoal** e adequar

EVOLUTION: WHY DOES IT MATTER?

BIBLIOGRAFIA

- É importante que as leituras se mantenham actualizadas para surtirem o efeito desejado e para que não se acumulem no final. Se entenderem que alguns itens são demasiado básicos ou que cobrem assuntos com os quais estão familiarizados não precisam de os ler.

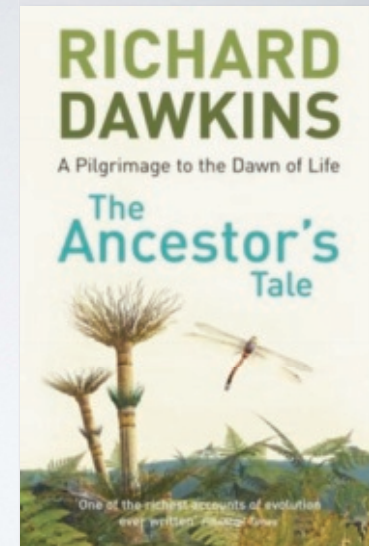
Avaliação

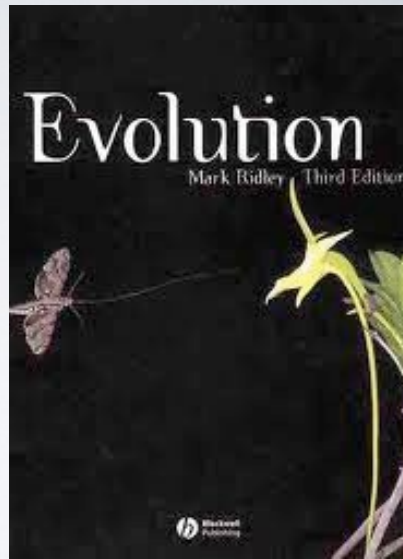
A avaliação será apurada através de um **exame escrito** que incluirá toda a matéria leccionada (Téorica/Teórico-Prática/Tutoriais/Seminários).

Todos os alunos estão admitidos ao exame de época normal e à época de recurso desde que tenham assistido a pelo menos 4 aulas teórico-práticas.

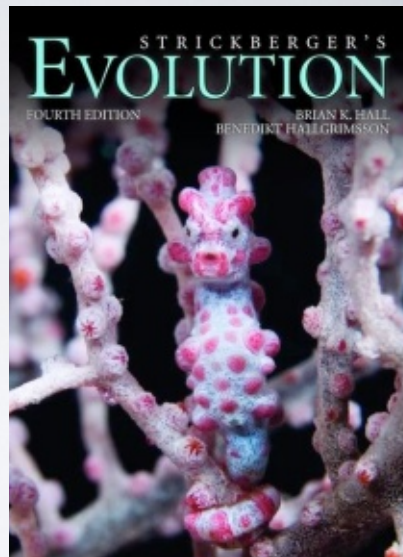
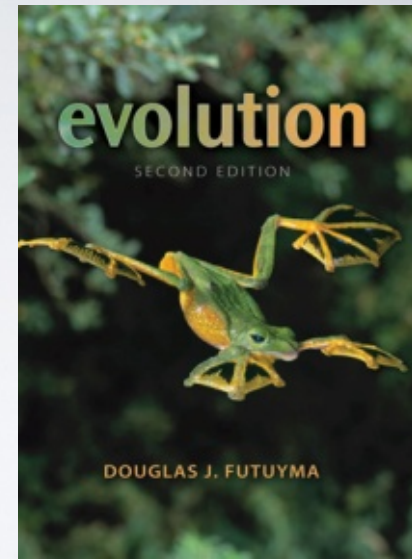
Estarão aprovados os alunos com nota igual ou superior a **10 valores**.

LEIAM !!





[WEB](#)

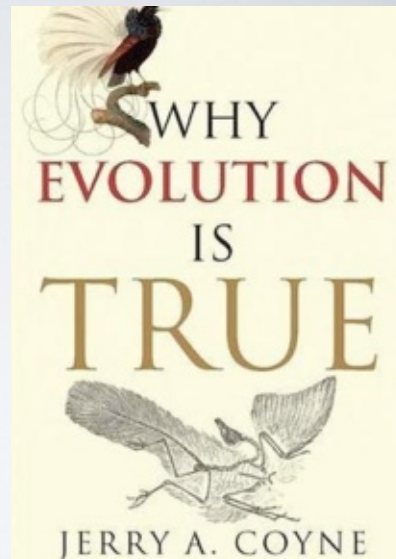


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Evolution: species of organisms change, and have changed, over time.

Gradualism: those changes generally happen slowly, taking at least tens of thousands of years.

Speciation: populations of organisms not only change, but split into new species from time to time.

Common ancestry: all living things have a single common ancestor—we are all related.

Natural selection: evolution is driven by random variations in organisms that are then filtered non-randomly by how well they reproduce.

Próxima aula

Para a próxima aula têm de ler o paper publicado por Dobzhansky