



CURSO DE POSTGRADO

Basic Concepts in Cell Signaling

Nombre Curso

SEMESTRE

1°

AÑO

2015

PROF. ENCARGADO

Andrew Quest
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Nombre Completo

Cédula Identidad

Advanced Center for Chronic Diseases (ACCDiS), Center for Molecular Studies of the Cell (CEMC) & /Network for Metabolic Stress Signalling (NEMESIS)
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UNIDAD ACADÉMICA

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TIPO DE CURSO

Complementario

(Básico, Avanzado, Complementario, Seminarios Bibliográficos, Formación General)

CLASES	30 H
SEMINARIOS	24 H
PRUEBAS	4 H
TRABAJOS	20 H
Nº HORAS PRESENCIALES	56 H
Nº HORAS NO PRESENCIALES	122 H
Nº HORAS TOTALES	180 H

CRÉDITOS

6

(1 Crédito Equivale a 30 Horas Semestrales)

CUPO ALUMNOS

5

(N° mínimo)

25

(N° máximo)

PRE-REQUISITOS

A reasonable understanding of cell and molecular biology. Ability to read and understand papers in English. Successful completion of this course will be considered an obligatory prerequisite to subsequent participation in signaling courses that may be offered later (for instance "Cell Signaling in Biomedicine")

INICIO

24 de Marzo del 2015

TERMINO

20 de Mayo del 2015

DIA/HORARIO
POR SESION

Tuesday 14:00 a 17:30 h

DIA / HORARIO
POR SESION

Wednesday 9:00 a 12:30 h

LUGAR

Auditorio Dr. Alberto Donoso A

Escuela De Postgrado (Sala a determinar) u otro lugar

METODOLOGÍA

The course will last 9 weeks and consist of 1-2 lectures one day (Wednesday) followed by a discussion of 2 papers dealing with the respective topics the following week (Tuesday)

EVALUACIÓN (INDICAR % DE CADA EVALUACION)

Students will be evaluated in 3 ways:

- Oral participation in discussion of papers every week (40%)
- Answer in writing to questions during the semester (20%)
- Final oral exam (40%).

Grades from these activities will be averaged taking into account the percentiles indicated to generate the final grade for the course

PROFESORES PARTICIPANTES (INDICAR UNIDADES ACADEMICAS)

- Molecular & Cell Biology Program, ICBM: Lisette Leyton Ph.D (Professor), Andrew Quest Ph.D. (Professor) and Sergio Lavandero Ph.D (Professor).
- Department of Biochemistry & Molecular Biology, Faculty of Chemical and Pharmaceutical Sciences: Mario Chiong Ph.D (Assistant Professor) and Sergio Lavandero Ph.D (Professor).

DESCRIPCIÓN / OBJETIVOS

Main objective: Understand mechanisms of signal transduction and underlying principles.

Specific aims: Advanced lectures on signaling pathways involving receptors (Tyrosine kinases, G-protein-coupled, cytokine, nuclear) the universal second messengers (Calcium, cyclic AMP and cyclic GMP, lipid second messengers, etc), protein kinases (src, raf-MAPK, PKC, etc.), phosphatases, proteases, downstream effector molecules, as well as a discussion of the relevant literature. The importance of protein targeting, supramolecular complex formation and subcompartmentalisation of signaling molecules will be emphasized.

CALENDARIO DE ACTIVIDADES

(Clases, Seminarios, Prácticos)

	FECHA	HORAS PRESENCIALES	HORAS NO PRESENCIALES	DESCRIPCION ACTIVIDAD	PROFESOR
1	24 March	14.00 - 15.30	3	General Introduction Part A. How to write and analyze a research grant	A Quest
	24 March	16.00 - 17.30	3	General Introduction Part B. How to write and analyze a paper	S. Lavandero
	25 March	09.00 - 12.30	6	Journal Club-1	S. Lavandero A. Quest
2	31 March	14.00 - 17.30	6	First messengers G protein coupled receptors	S. Lavandero
	1 April	09.00 - 10.30	3	Tyrosine kinases	L. Leyton
	1 April	11.00 – 12:30	3	Non-receptor tyrosine kinases	L. Leyton
3	7 April	14.00 - 17.30	6	Journal Club-2	S. Lavandero L. Leyton
	8 April	09.00 - 10.30	3	Non-lipid second messengers	S. Lavandero
	8 April	11.00 – 12:30	3	Calcium signaling	S. Lavandero
4	14 April	14.00 – 17:30	6	Journal Club-3	S. Lavandero M. Chiong
	15 April	9:00 – 12:30	6	Lipid second messengers	A. Quest
5	21 April	14.00 – 17.30	6	Journal Club-4	A Quest S Lavandero
	22 April	09.00 – 12.30	6	Kinases I: PKC, PI3K, MAPKs	A. Quest
6	28 April	14.00 – 17.30	6	Journal Club-5	A Quest S Lavandero
	29 April	09.00 – 12.30	6	Kinases II: AMPK –mTOR-big MAPK	M. Chiong
7	5 May	14.00 – 17.30	6	Journal Club 6	A Quest M Chiong
	6 May	09:00 – 12:30	6	Phosphatases, Proteases	A Quest
8	12 May	14:00-17:30	6	Journal Club-7	M. Chiong A. Quest
	13 May	09.00 – 10.30	3	Signaling compartmentalization	A Quest
	13 May	11:00 – 12.30	3	Journal Club-8	A Quest-M Chiong
9	19 May	14.00 – 17.30	6	Summary discussion	A Quest
	20 May	09.00 – 12.30	20	Oral exam	All