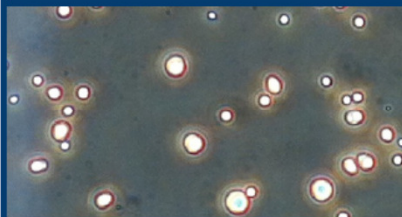


Minor BioRefinery



Interested in using microorganisms, fermentation technology, and downstream processing in the biobased economy? Apply now!



For more information
contact Ruud Heshof:
ruud.heshof@han.nl



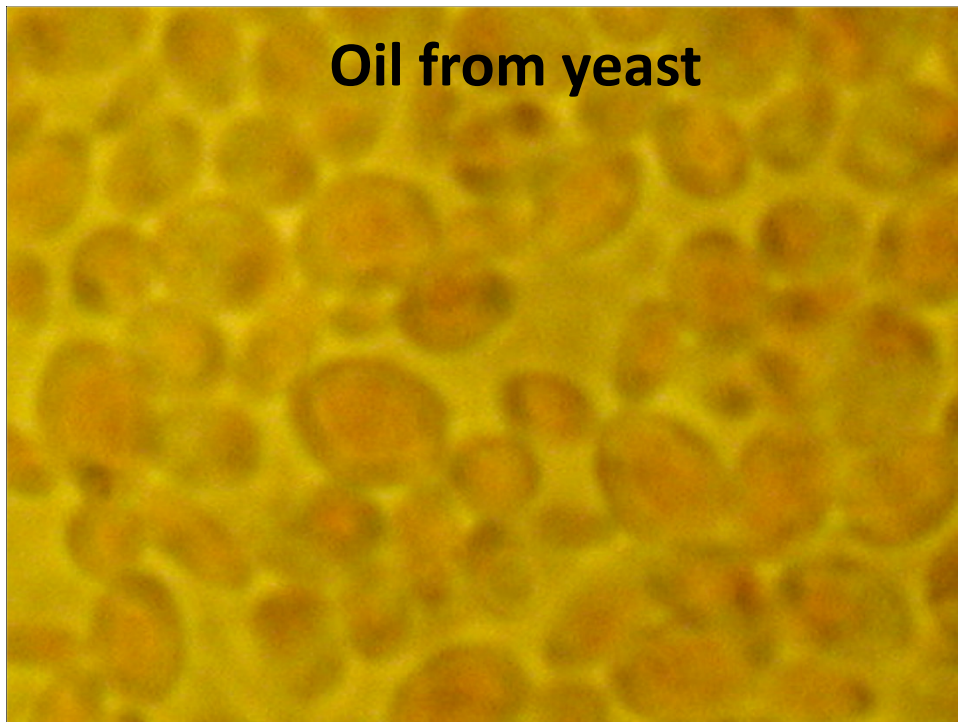
HAN BioCentre



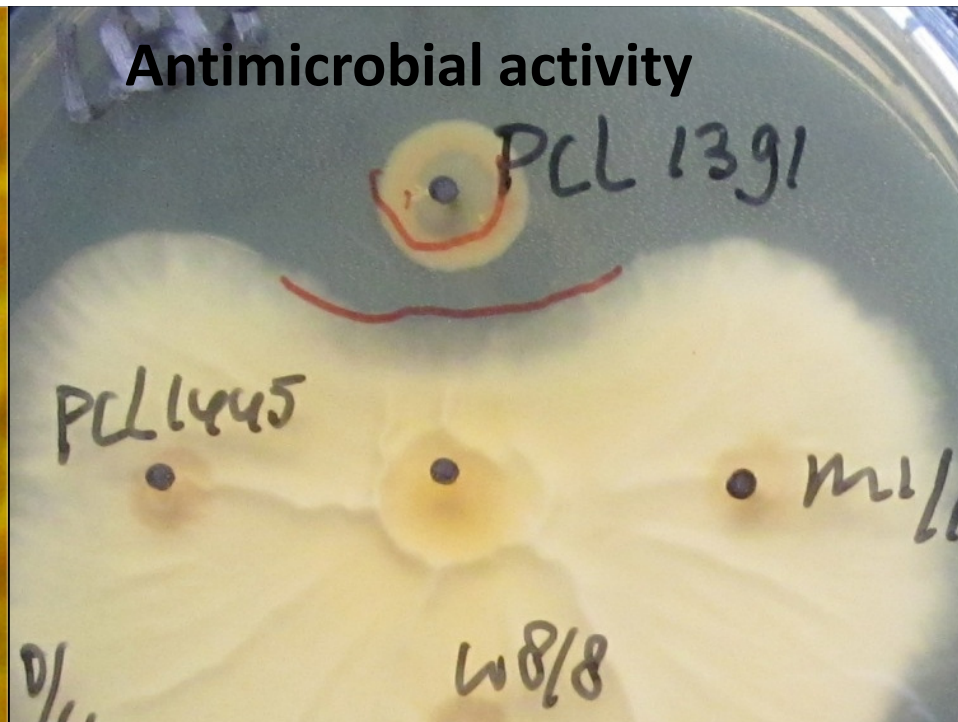
Onze missie:



Oil from yeast



Antimicrobial activity



Enzyme production



***C. elegans* as alternative screening system**



Oil from yeast



Antimicrobial activity



Enzyme production



***C. elegans* as alternative screening system**



Jaar 1 + Jaar 2

Labrekenen, natuurkunde, biochemie, biologie ed.

Jaar 3

1e half jaar

Specialisatie

2e half jaar

Minor

Jaar 4

Stage

Afstuderen

Jaar 1 + Jaar 2

Labrekenen, natuurkunde, biochemie, biologie ed.

Jaar 3

1e half jaar

Specialisatie

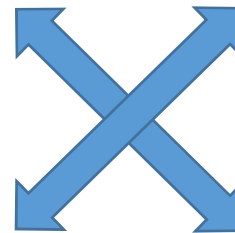
2e half jaar

Minor

Jaar 4

Stage

Afstuderen



2017 – 2018

	Specialisatie			Minor
1e half jaar	Medische specialisatie	Planten technologie	Biotechnologie  	 BioRefinery
2e half jaar	Medische specialisatie	Planten technologie		BioRefinery 

Discovery, Analysis, and Production of Biomolecules

2012

2013

2014

2015

6

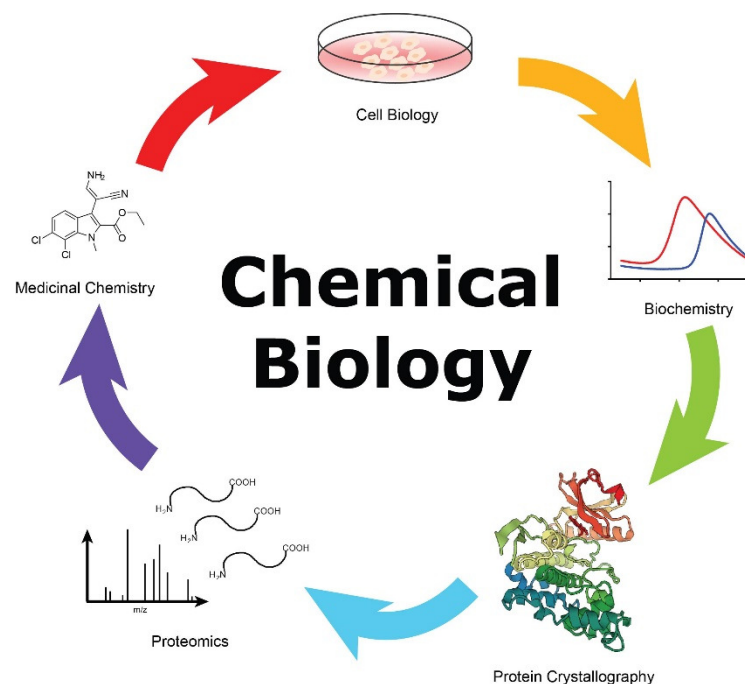
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Doel van de exchange course is op zoek te gaan naar het grensvlak tussen biologie en chemie. De industrie is steeds meer op zoek naar biologen met chemische kennis en/of vice versa.

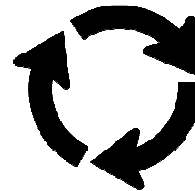


Koppelen van biologie student aan chemie student.

Allebei eigen opdracht, maar hetzelfde doel behalen.

Biologie:

Produceren van enzymen om olie-gistcellen open te kraken



Chemie:

Analyseren van de enzyme (LC-MS, biochemie)

De student leert:

- Fermentatie technologie – 21 bioreactoren van 1 tot 20 L volume
 - Wiskundige theorie + praktische kennis
- Analytische chemie – FPLC, LC-MS, GC
 - Theorie + praktische kennis
- Werken in een echt project
 - Projectplanning
 - Rapportage/presentatie
 - Omgaan met negatieve resultaten

Programme overview

	Week	Date	What	Remarks
1	36	5-9 Sep	General introduction + Bio-based economy	
2	37	12-16 Sep	Desk-study + BioRefinery	Literature research + Separation and analysis
3	38	19-23 Sep	Upstream process + practical	
4	39	26-30 Sep	Practical	
5	40	3-7 Oct	Exam	Hand in Desk study
6	41	10-14 Oct	Start of project	
7	42	17-21 Oct	project	Hand in plan of approach
	43	24-28 Oct	Autumn holidays	
8	44	31-4 Nov	project	
9	45	7-11 Nov	project	
10	46	14-18 Nov	project	
11	47	21-25 Nov	project	
12	48	28-2 Dec	project	
13	49	5-9 Nov	project	
14	50	12-16 Dec	project	
15	51	19-23 Dec	project	
	52	26-30 Dec	Christmas holidays	Christmas holidays
	1	2-6 Jan	Christmas holidays	Christmas holidays
16	2	2-6 Jan	project	
17	3	9-13 Jan	project - draft report	
18	4	16-20 Jan	project - draft report	
19	5	23-27 Jan	hand in report (January 23th) & final presentation (January 27th)	Final report to your supervisor
20	6	30-3 Feb	final mark	

Week	Topic	Lecturer
36	General introduction	Christien Lokman
	Introduction BioRefinery	Ruud Heshof
	BioRefinery	Michel Eppink
	BioBased economy	Richèle Wind
	BioWiki	Richèle Wind
37	Desk-study	Richèle Wind Karin Struijs Ruud Heshof
	BioRefinery Biomolecules Analytical chemistry Separation technology BioRefinery process design	Karin Struijs
38	Fermentation technology – theory	Ruud Heshof
	Fermentation technology – practical	Ruud Heshof
39	Practical – contact hour	Ruud Heshof
	Practical	Ruud Heshof
40	Exam	Ruud Heshof

Minor BioRefinery



2012

2013

2014

2015

2016

6

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17

11 Biologen

9

HAN

1

HAS

1

Alicante, Spanje

6 Chemici

2

HAN

4

Avans