

## Department of Biotechnology

29 July 2019

### CIRCULAR

#### VALUE ADDED COURSE

##### (Bio-diesel Production from Algal Biomass)

Student of B.Sc. M.Sc. and B. Tech Biotech are hereby informed that value added course “Bio-diesel Production from Algal Biomass” is scheduled from August 5, 2019 in your respective classroom, Academic Block-III.


##### Schedule:


- Time Slot: 03:00 PM to 05:00 PM
- Key Speaker: Dr. Pankaj Rai
- Duration: 2 hrs

##### Program Overview:

The objective of this course is to improve the understanding of students regards how petroleum and bio-based fuels affect the global carbon cycle, the attributes of biofuels that make them suitable as a fuel for a specific application, limitations of biofuels, global impacts of biofuels on food and energy supplies, and technological advances and Challenges to be overcome for a wide-scale biofuel adoption.

  
Dean  
Faculty of Science  
Invertis University, Bareilly (U.P.)

Dr. Shashank Upadhyaya  
(HOD)  
  
Head  
Department of Biotechnology  
Invertis University, Bareilly (U.P.)

  
Registrar  
Invertis University  
Bareilly

# Bio-diesel Production from Algal Biomass

**INVERTIS**  
UNIVERSITY BAREILLY

Organised by:-

Department of Biotechnology



Program :- B.Sc. M.Sc.  
B.Tech Biotech


03:00 PM TO 05:00 PM

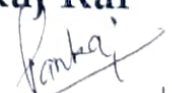

Aug 05–Aug 28 2019

HOD :  
Dr. Shashank Upadhyaya

Key Speaker :  
Dr . Pankaj Rai

  
Head  
Department of Biotechnology  
Invertis University, Bareilly (U.P.)

  
Dean  
Faculty of Science  
Invertis University, Bareilly (U.P.)

  
(Course Coordinator)  
  
Registrar  
Invertis University  
Bareilly

# Bio-diesel Production from Algal Biomass





## Course Overview:

The objective of this course is to improve the understanding of students regarding how petroleum and bio-based fuels affect the global carbon cycle, the attributes of biofuels that make them suitable as a fuel for a specific application, limitations of biofuels, global impacts of biofuels on food and energy supplies, and technological advances and Challenges to be overcome for a wide-scale biofuel adoption.

  
Dr. Anshu  
Department of Biotechnology  
Inverts University Bareilly


  
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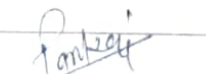
  
Dr. Anshu  
Department of Biotechnology  
Inverts University Bareilly


### BT 01- Bio-diesel Production from Algal Biomass

Course Name	Bio-diesel Production from Algal Biomass
Objective of the Course	This course "focuses on combustion fuels made from nonpetroleum sources and introduces the sources, processing, and social impacts of biofuel utilization. At the end of the course, "students will be able to describe: how petroleum and bio-based fuels affect the global carbon cycle, the attributes of biofuels that make them suitable as a fuel for a specific application, limitations of biofuels, global impacts of biofuels on food and energy supplies, and technological advances and Challenges to be overcome for a wide-scale biofuel adoption."
Brief Outline of the Course	The prospects of biofuel production from microalgal carbohydrates and lipids coupled with greenhouse gas mitigation due to photosynthetic assimilation of CO <sub>2</sub> have ushered in a renewed interest in algal feedstock. Furthermore, microalgae (including cyanobacteria) have become established as commercial sources of value-added biochemicals such as polyunsaturated fatty acids and carotenoid pigments used as antioxidants in nutritional supplements and cosmetics. This article presents a comprehensive synopsis of the metabolic basis for accumulating lipids as well as applicable methods of lipid and cellulose bioconversion and final applications of these natural or refined products from microalgal biomass. For lipids, one- step <i>in-situ</i> transesterification offers a new and more accurate approach to quantify oil content. As a complement to microalgal oil fractions, the utilization of cellulosic biomass from microalgae to produce bioethanol by fermentation, biogas by anaerobic digestion, and bio-oil by hydrothermal liquefaction are discussed. Collectively, a compendium of information spanning green renewable fuels and value-added nutritional compounds is provided.
Eligibility of participants	B.Sc. / B.Tech. / M.Sc. Biotechnology Students
Course duration	36 Hours (6 Hours Per Day; Monday to Saturday)

  
Head

Department of Biotechnology  
Invertis University, Bareilly (U.P.)


  
(Course Coordinator)


  
Dean  
Faculty of Science

  
Registrar  
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Bareilly

	Spread into 6 lectures of 1 hr/day and 6 Hands on training 5 hrs/day
Certificate (if Yes then criteria)	N.A.
Syllabus	<p><b>Unit 1</b> Biofuel production from microalgal carbohydrates and lipids coupled with greenhouse gas mitigation due to photosynthetic assimilation of carbon dioxide.</p> <p><b>Unit 2</b> Microalgae (including cyanobacteria) as commercial sources of value-added biochemicals such as polyunsaturated fatty acids and carotenoid pigments used as antioxidants in nutritional supplements and cosmetics.</p> <p><b>Unit 3</b> Metabolic basis for accumulating lipids as well as applicable methods of lipid and cellulose bioconversion and final applications of these natural or refined products from microalgal biomass.</p> <p><b>Unit 4</b> Lipids, one- step <i>in-situ</i> trans-esterification to quantify oil content. As a complement to microalgal oil fractions, the utilization of cellulosic biomass from microalgae to produce bioethanol by fermentation, biogas by anaerobic digestion, and bio-oil by hydrothermal liquefaction.</p>
Course Coordinator	<b>Dr. Pankaj Rai</b>

  
 Head  
 Department of Biotechnology  
 Invertis University, Bareilly (U.P.)

  
 (Course Coordinator)

  
 Dean  
 Faculty of Science  
 Invertis University, Bareilly (U.P.)

  
 Registrar  
 Invertis University  
 Bareilly

**Value Added Course****Course Name - Biodiesel Production from Algal Biomass****Course Code - BT01****Duration - 36 Hours****List of Enrolled Students**

S.No.	Student ID	Student name	Year	Program
1	BSBT2018054	VIJAY KUMAR YADAV	2019-20	M.Sc. Biotech
2	MSBT2018002	RUNA KUMARI	2019-20	M.Sc. Biotech
3	MSBT2018003	ADITI PAL	2019-20	M.Sc. Biotech
4	MSBT2018004	AGENDRA GANGWAR	2019-20	M.Sc. Biotech
5	MSBT2018005	VANSHIKA GUPTA	2019-20	M.Sc. Biotech
6	MSBT2018006	TWINKLE SINGH	2019-20	M.Sc. Biotech
7	MSBT2018007	SHAZIA AKHTAR	2019-20	M.Sc. Biotech
8	MSMB2018003	PRABHAT KUMAR	2019-20	M.Sc Micro
9	MSMB2018004	SUMEDHA GUPTA	2019-20	M.Sc Micro
10	MSMB2018005	SHRUTI AGARWAL	2019-20	M.Sc Micro
11	MSMB2018006	SUPRIYA GAUTAM	2019-20	M.Sc Micro
12	MSMB2018007	MOHD NAWED	2019-20	M.Sc Micro
13	MSMB2018008	ADNAN KHAN	2019-20	M.Sc Micro
14	MSMB2018009	MOHAMMAD AMIR	2019-20	M.Sc Micro
15	MSMB2018010	EKTA TIWARI	2019-20	M.Sc Micro
16	MSBT2018001	KOMAL	2019-20	M.Sc Micro
17	BT2016026	AKASH GUPTA	2019-20	B.Tech Biotech
18	BT2016007	AKSHA ARORA	2019-20	B.Tech Biotech
19	BT2016024	BHUPENDRA KHATI	2019-20	B.Tech Biotech
20	BT2016031	FABEHA OWAIS	2019-20	B.Tech Biotech
21	BT2016012	ISHA KASHYAP	2019-20	B.Tech Biotech

Head

Department of Biotechnology  
Invertis University, Bareilly (U.P.)

*Vinay*  
(Course Coordinator)

*Tej*  
Dean

Faculty of Science  
Invertis University, Bareilly (U.P.)

Value Added Course

Course Name - Biotiesel Production from Algal Biomass

Course Code - BT01

Duration - 36 Hours

(August, 5 to August, 28, 2019)

S.No	Student name	Course	Student ID	Year	5	6	7	8	9	10	13	14	16	17	19	20	21	22	23	26	27	28
1	VIJAY KUMAR YADAV	M.Sc. Biotech	BSBT2018054	2019-20	P	A	P	P	A	P	P	P	A	P	A	P	P	P	A	P	P	A
2	RUNA KUMARI	M.Sc. Biotech	MSBT2018002	2019-20	P	P	P	P	P	A	D	P	P	A	A	P	P	A	P	A	P	P
3	ADITI PAL	M.Sc. Biotech	MSBT2018003	2019-20	P	P	A	P	A	P	P	P	A	P	A	P	P	P	P	P	A	P
4	AGENDRA GANGWAR	M.Sc. Biotech	MSBT2018004	2019-20	P	A	P	A	P	P	P	A	P	A	P	P	P	A	P	P	A	P
5	VANSHIKA GUPTA	M.Sc. Biotech	MSBT2018005	2019-20	P	P	A	P	P	P	P	P	A	P	A	P	P	A	P	P	P	P
6	TWINKLE SINGH	M.Sc. Biotech	MSBT2018006	2019-20	P	A	P	P	A	P	A	A	P	P	P	A	P	P	A	P	P	P
7	SHAZIA AKHTAR	M.Sc. Biotech	MSBT2018007	2019-20	P	P	A	P	P	A	P	A	P	P	P	A	P	P	A	P	P	A
8	PRABHAT KUMAR	M.Sc. Micro	MSMB2018003	2019-20	P	A	P	A	A	P	P	A	P	A	P	P	P	P	P	P	A	P
9	SUMEDHA GUPTA	M.Sc. Micro	MSMB2018004	2019-20	A	P	P	A	P	A	P	A	P	P	P	P	P	A	P	P	A	P
10	SHRUTI AGARWAL	M.Sc. Micro	MSMB2018005	2019-20	P	A	P	P	P	P	P	P	P	A	A	P	P	A	P	P	P	P
11	SUPRIYA GAUTAM	M.Sc. Micro	MSMB2018006	2019-20	A	P	P	A	P	A	A	P	P	P	P	P	P	A	P	P	P	P
12	MOHD NAWED	M.Sc. Micro	MSMB2018007	2019-20	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	ADNAN KHAN	M.Sc. Micro	MSMB2018008	2019-20	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	MOHAMMAD AMIR	M.Sc. Micro	MSMB2018009	2019-20	A	A	A	A	A	P	P	A	P	A	P	A	P	P	P	P	P	P
15	EKTA TIWARI	M.Sc. Micro	MSMB2018010	2019-20	A	P	P	P	A	A	A	P	A	P	A	P	P	P	P	P	P	A
16	KOMAL	M.Sc. Micro	MSBT2018001	2019-20	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A
17	AKASH GUPTA	B.Tech Biotech	BT2016026	2019-20	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P
18	AKSHA ARORA	B.Tech Biotech	BT2016007	2019-20	A	P	P	P	A	P	A	P	P	P	A	P	P	P	P	P	P	P
19	BHUPENDRA KHATI	B.Tech Biotech	BT2016024	2019-20	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P
20	FABEHA OWAIS	B.Tech Biotech	BT2016031	2019-20	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	ISHA KASHYAP	B.Tech Biotech	BT2016012	2019-20	P	A	A	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P

Total Student Present = 16 13 14 14 14 15 16 14 13 14 13 14 16 12 16 17 14 16

Head

*(Signature)*

Department of Biotechnology  
Invertis University Bareilly (U.P.)

(Course Coordinator)

Dean

Registration  
Invertis University  
Bareilly