

Program: M.Tech. in Optoelectronics and Optical Communication

Code: JOP

Department: Interdisciplinary Program between

Department of *Physics* & Department of *Electrical Engineering*

Program: M.Tech. in Optoelectronics and Optical Communication

Program & Project Coordinators

Physics (PH):

Joyee Ghosh, R.K. Varshney, M.R. Shenoy, G. V. Prakash

Electrical Engg. (EE):

Vivek Venkataraman, Abhishek Dixit, Amol Chowdhury, V. K. Jain, Vinod Chandra

The overall credits structure

Category	PC	PE	OE	Total
Credits	24	27	0	51

Program Core

		L	T	P	Total
ELL717	Optical Communication Systems	3	0	0	3
ELL727	Digital Communication & Information Systems	3	0	0	3
JOD801	Major Project Part-I	0	0	12	6
JOP791	Laboratory-I (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
JOP792	Laboratory-II (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
PYL791	Fiber Optics	3	0	0	3
PYL792	Optical Electronics	3	0	0	3
	Total Credits				24

The overall credits structure

Category	PC	PE	OE	Total
Credits	24	27	0	51

Program Core

		L	T	P	Total
ELL717	Optical Communication Systems	3	0	0	3
ELL727	Digital Communication & Information Systems	3	0	0	3
JOD801	Major Project Part-I	0	0	12	6
JOP791	Laboratory-I (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
JOP792	Laboratory-II (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
PYL791	Fiber Optics	3	0	0	3
PYL792	Optical Electronics	3	0	0	3
Total Credits					24

2 lecture Core courses to be done in the current 1st semester

Prof. Vinod Chandra (EE)

Prof. Arun Kumar (Physics)

The overall credits structure

Category	PC	PE	OE	Total
Credits	24	27	0	51

Program Core

		L	T	P	Total
ELL717	Optical Communication Systems	3	0	0	3
ELL727	Digital Communication & Information Systems	3	0	0	3
JOD801	Major Project Part-I	0	0	12	6
JOP791	Laboratory-I (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
JOP792	Laboratory-II (Fiber Optics Lab/ Opt. Comm. Lab)	0	0	6	3
PYL791	Fiber Optics	3	0	0	3
PYL792	Optical Electronics	3	0	0	3
Total Credits					24

2 lecture Core courses to be done in the current 1st semester

1 lab Core course will be done in the 2nd semester (from Feb 2020)

The overall credits structure

Category	PC	PE	OE	Total
Credits	24	27	0	51

Program Electives

L T P Total

**At least 2 Elective courses
to be done in the current
1st semester**

PYL793 Photonic Devices

3 0 0 3

Compulsory for all

Prof. Ravi K. Soni (Physics)

PYL795 Optics and Lasers

3 0 0 3

Compulsory for EE students
Optional for PH students

Prof. Amartya Sengupta
(Physics)

ELL728 Optoelectronic Instrumentation

3 0 0 3

Compulsory for PH students
Optional for EE students

Prof. V. K. Jain (EE)

The overall credits structure

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Program Electives

L T P Total

ELL716	Telecommunication Switching and Transmission	3	0	0	3
ELL720	Advanced Digital Signal Processing	3	0	0	3
ELL723	Broadband Communication Systems	3	0	0	3
ELL724	Computational Electromagnetics	3	0	0	3
ELL726	Nano-Photonics and Plasmonics	3	0	0	3
ELL728	Optoelectronic Instrumentation	3	0	0	3
ELL785	Computer Communication Networks	3	0	0	3
ELL814	Wireless Optical Communications	3	0	0	3

Program Electives

		L	T	P	Total
ELL819	Introduction to Plasmonics	3	0	0	3
ELL820	Photonic Switching and Networking	3	0	0	3
JOD802	Major Project Part-II	0	0	24	12
JOL793	Selected Topics-I	3	0	0	3
JOL794	Selected Topics-II	3	0	0	3
JOS795	Independent Study	0	3	0	3
JOV796	Selected Topics in Photonics	1	0	0	1
PYL756	Fourier optics and holography	3	0	0	3
PYL757	Statistical and Quantum optics	3	0	0	3
PYL760	Biomedical optics and Bio-photonics	3	0	0	3
PYL770	Ultra-fast optics and applications	3	0	0	3
PYL771	Green Photonics	3	0	0	3
PYL790	Integrated Optics	3	0	0	3
PYL793	Photonic Devices	3	0	0	3
PYL795	Optics and Lasers	3	0	0	3
PYL891	Fiber Optic Components and Devices	3	0	0	3
PYL892	Guided Wave Photonic Sensors	3	0	0	3

The overall credits structure

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Credits	24	27	0	51

Sem.	Courses (Number, Abbreviated Title, L-T-P, credits)						Lecture courses	Contact h/week				Credits
	L	T	P	Total								
I	PYL791 Fibre Optics (3-0-0) 3	ELL727 Digital Comm. & Information Systems (3-0-0) 3	JOP791 Laboratory-I (Fibre Optics Lab/Opt. Comm. Lab) (0-0-6) 3	PYL/ELL Programme Elective I (3-0-0) 3	PYL/ELL PE-2 (3-0-0) 3		4	12	0	6	18	15
II	PYL792 Optical Electronics (3-0-0) 3	ELL717 Optical Commu- nication System (3-0-0) 3	JOP792 Laboratory-II (Fibre Optics Lab/ Opt. Comm. Lab) (0-0-6) 3	PYL/ELL PE-3 (3-0-0) 3	PYL/ELL PE-4 (3-0-0) 3		4	12	0	6	18	15
Summer												
III	PE/OC PE-4 (3-0-0) 3	JOD801 Major Project Part-I (0-0-12) 6					1	3	0	12	15	9
IV	JOD802 Major Project Part-II Or 12 Credits PE Courses in lieu of Major Project Part-II) (0-0-24) 12						0	0	0	24	24	12

Total = 51