

# SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE



Official Publication of Sant Gadge Baba Amravati University

PART-TWO

Thursday, the 8<sup>th</sup> November, 2012  
Notification

No.: 155/2012

Dated : 8/11/2012

**Subject : Syllabus For Certificate / Diploma / Advanced Diploma Course In  
"Fibre Optic Communication " Under The Scheme Of Career Oriented  
Programme.**

It is notified for general information of all concerned that the authorities of University have accepted the syllabi for Certificate / Diploma / Advanced Diploma Course in "Fibre Optic Communication" along with other details under the scheme of Career Oriented Programme at first degree level shall be as given in Appendix-A, appended with this notification.

It is further notified that the eligibility criteria and other details along with the Scheme of examination shall be as provided under Ordinance No.47 of 2005, Regulation No.38 of 2005, Direction No.6/2008 and 7/2008.

Sd/-  
(Dineshkumar Joshi)  
Registrar,  
Sant Gadge Baba Amravati University

**Appendix-A**

**Syllabus Prescribed for Certificate Course in "Fibre Optic Communication"  
under the Scheme of Career Oriented Programme**

Theory paper shall be of 3 hours duration & carry 100 marks. Each Unit carry 20 marks. The practical shall be of 4 hours duration and carry 50 marks.

**Theory :**

- Unit-I :** Overview of Optical Fibre Communication :- Block diagram of optical fibre communication system. Advantages and disadvantages of optical fibre system. Applications – industry, defence, commercial fields.  
Optical Fibres :- Types of optical fibres, structure of optical fibres, principle of transmission of light in optical fibre, basic optical laws, refraction & Snell's law, total internal reflection, conditions for total internal reflection, light propagation through an Optical Fibre, acceptance angle, numerical aperture.
- Unit-II :** Classification of Optical Fibres :- Modes of propagation, step index fibre, monomode step index fibre, multimode graded index fibre, ray path inside the core, inertial and skew rays.  
Fibre Fabrication :- Classification, External CVD, Internal CVD processes and their characteristics.  
Fibre Cables :- Types, materials used, construction, testing, role of strength material, selection criteria.
- Unit-III :** Electronic Components :- Construction of pn junction diode, symbol forward & reverse biased operation, VI characteristics, applications. NPN & PNP transistors – construction & working of BJT, symbols, CB, CE & CC configurations.  
**Power Supply :** Avalanche breakdown, Zener breakdown, Zener diode operation & VI Characteristics, Rectifier & filter. Regulation – Zener regulator, Block diagram of power supply, regulated power supply, IC power supply & their functional description.
- Unit-IV :** Optical Display Devices :- Necessity of optical displays, types of optical displays, numeric, alphanumeric displays, segmental displays – seven segment, fourteen segment, dot matrix, LCD display – dynamic scattering & field effect type, construction & working principle.  
Measuring Instrument :- Multimeter, Cathode Ray Oscilloscope, Digital voltmeter, Function generator – working principle of each with simple block diagrams & applications.

**Unit-V :** Optoelectronic Devices :- LDR- Construction, operation & VI characteristics.  
Optical Sources :- Construction, operation and Characteristics of LED, LET, Semiconductor laser diode.  
Photodetectors :- Photoemissive, photoconductive and photovoltaic devices, construction, operation and characteristic of pn junction photodiode, PIN photodiode, avalanche photodiode, phototransistor, photovoltaic cell.

**Practicals :-** Any 10 Experiments based on above syllabus.

**Duration of Practical Marks :**

One Experiment - 30 Marks  
Viva - 10 marks  
Practical Record - 10 marks

-----  
Total Marks - 50  
-----

**Syllabus Prescribed for Diploma Course in “Fibre Optic Communication”  
under the Scheme of Career Oriented Programme**

Theory paper shall be of 3 hours duration & carry 100 marks. Each Unit carry 20 marks. The practical shall be of 4 hours duration and carry 50 marks.

**Theory :**

**Unit-I :** Digital Techniques :- Decimal, binary number system, gates – OR, AND, NOT, NOR, NAND gates – definition, symbol, Boolean equations, truth tables, pin diagrams of each. Flip-flop – symbol & function. Counter & register – symbolic functional description.  
Combinational Logic – Definition, function & operation of Encoder, Decoder, Multiplexer, Demultiplexer with symbolic diagrams.

**Unit-II :** LASER System :- Definition, properties, laser action, laser as an amplifier of light, absorption, spontaneous & stimulated emission, population inversion, principle of 3 & 4 level laser. Applications, semiconductor laser, fibre laser.  
Transmission Characteristics of Fibres :- Fibre losses, attenuation, absorption, scattering, bending, dispersion, distortion, noise – brief introduction of each.

**Unit-III :** Optical Amplifiers :- Transistor amplifier CB, CE mode action, Feedback concept.  
Operational Amplifiers – symbol, functional description, Inverting – Non Inverting functions, pin diagram.  
Optical Amplifiers :- Basic applications and types of Optical Amplifiers, Semiconductor laser amplifier, fibre amplifier.

**Unit-IV :** Optical Components :- Optical Splicers :- Splicing techniques, fusion splice method, steps involved in splicing.  
Optical Fibre Connectors :- Types V groove connector system.  
Optical Switches :- Brief introduction.  
Optical Couplers :- Star and T Couplers, characteristic, operating modes, Applications-diode-diode coupler, diode-transistor coupler.

**Unit-V :** Optical Devices :- Repeaters, Regenerators, Transponders, Filters, Isolators, Attenuators – functional description of each with simple diagrams.

**Practicals :-** Any 10 Experiments based on above syllabus.

**Duration of Practical Marks :**

One Experiment - 30 Marks  
Viva - 10 marks  
Practical Record - 10 marks

-----  
Total Marks - 50  
-----

**Syllabus Prescribed for Advanced Diploma Course in “Fibre Optic Communication”  
under the Scheme of Career Oriented Programme**

Theory paper shall be of 3 hours duration & carry 100 marks. Each Unit carry 20 marks. The practical shall be of 4 hours duration and carry 50 marks.

**Theory :**

- Unit-I :** Electronic Communication :- Analog Communication – Modulation, need of modulation, Types of modulation, Basic ideas of AM, FM & Demodulation.  
Digital Communication :- Data Transmission – Serial & parallel transmission, Direction of data transmission – simplex, half duplex, full duplex, pulse modulation – PAM, PWM, PCM.
- Unit-II :** Transmitter & Receiver :- Functional descriptions.  
Optical Transmitter Operation – Driver circuit for LED, driver circuit for Laser.  
Optical Receiver Operation – Preamplifier design of APD control circuit, fibre optic trunk transmission \* broadband transmission – Basic ideas with functional description.
- Unit-III :** Fibre Optic Measurements :- Test equipment, fibre loss & attenuation measurement, dispersion measurement, OTDR – block diagram & working.  
Optical Power, wavelength, frequency, bandwidth & signal quality measurements.  
Fibre Optic Sensors – Coherent and non coherent system, Mach-Zehnder Fibre Optic interferometer, Fibre Fabry Perot interferometer.
- Unit-IV :** Fibre Optic Networks :-  
Computer Network Communication :- Network, types of network, concept of LAN, MAN, WAN, Network Topologies – bus, ring, star, tree.  
Optical Networks :- Network Concepts, Introduction to SONET & SDN.
- Unit-V :** Advanced Optical Communication :- Fibre data links, Digital transmission System – Point to point link, digital links. Wave length division Multiplexing.  
Internet Communication – Basic concepts.  
Modem – Brief Explanation with simple diagrams.  
Satellite Communication – Orbital Mechanics and Launching, satellite communication system.  
Mobile Communication – Cellular Phone – functional description with simple block diagram.

**Practicals :-** Any 05 Experiments based on above syllabus.

**Duration of Practical Marks :**

One Experiment - 30 Marks  
Viva - 10 marks  
Practical Record - 10 marks

-----  
Total Marks - 50  
-----

**Project Work / Field Work :- Marks 50**

The project work / field work involving study tour / visit to the related institution / organization / industry & the report should be submitted.

**Recommended Books :-**

- 1) Basic Electronics – B.L.Theraja
- 2) Principles of Electronics – V.K.Mehata
- 3) A course in Electrical, electronics measurements & instrumentation – A.K.Sawhney
- 4) Digital Electronics & microcomputers – Gaur.
- 5) Modern digital electronics – R.P.Jain
- 6) A text book of communication engineering – A. Kumar
- 7) Principles of communication engineering – Umesh Sinha
- 8) Optical fibres and fibre optical communication systems – Subirkumar Sarkar
- 9) Optoelectronics & fibre optic communication – Sarkar and Sarkar
- 10) Fibre Optics Technology & Applications – Stewart Personick
- 11) Fibre Optic communication – D.G.Agrawal
- 12) T.B. on Optical fibre communication & applications – S.C.Gupta.
- 13) Fibre optic communication systems – G.P.Agrawal
- 14) Fundamentals of fibre optics in telecommunication & sensor system – B.P.Paul.
- 15) Optoelectronics – P.Bhushan Mital.
- 16) Optical fibre communication systems- M.K.Raina
- 17) Fibre Optics in Telecommunication – Sharma N.
- 18) Optical Electonics – Ghatak
- 19) Fibre Optics and Optical Communication – Ghatak A.K.
- 20) Introduction to fibre optics – Ghatak, Thyagrajan
- 21) Fibre Optics and Opto Electronics – R.P.Khare
- 22) Semiconductor optoelectronic devices – Bhattacharya P.

- 23) Optical Communication – Jain, Gupta.
- 24) Optical fibre system & their components – Sharma A.B., Halney, Butusov.
- 25) Laser : Principles, types & applications – K.R.Nambiar.
- 26) Lightwave communication systems – Rajappa Papannareddy
- 27) Electronic Communication – Roddy, Coolen.
- 28) Understanding Fibre optics – Jeff Hecht
- 29) Optoelectronic devices – Wilson.
- 30) Fundamentals of optical fibres – John Buck
- 31) A Introduction to optical fibre – Cherin A.H.
- 32) Introduction to Optical electronics – Jones, Harper, Row.
- 33) Optical communications systems – Growar.
- 34) Fibre optics communications – Palais.
- 35) Optical fiber system technology & applications – Kao
- 36) Optical Fiber Communication – Keiser.
- 37) Optical Fiber Communication Principles & applicatioans – Senior J.M>
- 38) Optical Communication System– John Grower
- 39) Optical Fiber Communication – A.Selverajan.

\*\*\*\*\*

**Notification**

No.: 156 /2012

Date : 8/11/2012

**Subject : One additional Chance for failures of old course of BLISc. & MLISc.**

It is notified for information of all concerned that the Authorities of the University have provided one additional chance to appear for the examination to the failure students of old course of Bachelor of Library & Information Science (B.Lib.) and Master of Library and Information Science (M.Lib.) i.e. Summer-2013 Examination.

Sd/-

(Dineshkumar Joshi)  
 Registrar,

Sant Gadge Baba Amravati University.

\*\*\*\*\*

**NOTIFICATION**

No.157 /2012

Date :8/11/2012

**Subject : Nomination of one representative on University Senate**

It is notified for general information of all the concerned that the following person as mentioned in column No.3 has been nominated by the Hon'ble Vice-Chancellor on the University Senate for a term of one year by rotation i.e. 1st September 2012 to 31st August, 2013 under the provisions of Maharashtra Universities Act, 1994, as mentioned in column No.2 of the following table.

<b>Sr.No.</b>	<b>Provision of Maharashtra Universities Act, 1994</b>	<b>Name &amp; Address of the person</b>
<b>1</b>	<b>2</b>	<b>3</b>
1)	U/s 25(2)(aa) One representative of Municipal Council or  a Municipal Corporation with the university area nominated by the Vice-Chancellor for a term of one year by rotation.	Sau.Aruna Kishor Kadam (Chairman, Municipal Council, Chikhali) Infront of Rest House, Anand Nagar, Behind Pawan Vyayam Shala, Ward No. 19, Chikhali Tq. Chikhali, Dist.Buldhana

Sd/-

(Dineshkumar Joshi)  
 Registrar,

\*\*\*\*\*

Notification

No.158 /2012

Date :8/11/2012

Subject : Regarding Permanent Affiliation

It is notified for general information of all concerned that, the Academic Council of the University in its meeting held on 5.5.2012 vide item No.47 & 70 has granted Permanent Affiliation, under the provisions of section 88 of the Maharashtra Universities Act, 1994 to the following colleges from the academic session 2011-12.

Sr. No.	Name of the College.	Courses	Subjects.
1.	Bar. Ramrao Deshmukh Arts, Smt. Indiraji Kapdiya Commerce & Ny. Krushnarao Deshmukh Science College, Badnera, Distt.Amravati.	Arts (B.A.)  B.Com.  B.Sc.  M.Sc.	English,Marathi,Economics, History, Home-Economics, Statistics, Geography,Marathi Litt. Political Science.  As per syllabus  English, Marathi, Mathematics, Physics, Chemistry, Computer Science, Botany, Zoology.  Chemistry, Computer Science,
2.	Madhukarrao Pawar Arts College, Murtizapur, Distt.Akola.	Arts (B.A.)	English,Marathi, Hindi, Urdu, Pali, Music, History, Economics, Political Science, Geography, Sociology, Marathi Litt.English Litt., Hindi Litt., Persian Litt., Urdu Litt., Home-Economics,
3.	Chhatrapati Shivaji Kala Mahavidyalaya, Asegaon Purna, Distt. Amravati.	Arts (B.A.)	English,Marathi, Marathi Litt., Sociology, Economics, History, Political Science, Home-Economics, Geography, English Litt..
4.	Government College of Pharmacy, Amravati.	B.Pharm.  M.Pharm.	As per syllabus  Quality Assurance. Pharmacognosy & Phytochemistry,
5.	Shri Tulshiramji Jadhao Kala Mahavidyalaya, Lakhala, Washim.	Arts (B.A.)	English,Marathi, Marathi Litt. English Litt., Economics, Political Science, History, Sociology.

Sd/-  
(Dineshkumar Joshi)  
Registrar,  
Sant Gadge Baba Amravati University.

\*\*\*\*\*

अधिसूचना

क्रमांक : 159/ 2012

दिनांक : 8/11/2012

विषय : परीक्षा आवेदनपत्रे स्विकारण्याच्या तारखांबाबत..

उन्हाळी - 2013 परीक्षा (नियमित महाविद्यालयीन विद्यार्थी)

सर्व संबंधीतांचे माहितीकरीता सूचित करण्यात येते की, उन्हाळी २०१३ परीक्षेकरीता प्रवेशित होऊ इच्छिणाऱ्या व परीक्षेस पात्र असणाऱ्या वार्षिक पद्धती (Annual Pattern) व सत्र पद्धती (Semester Pattern) अभ्यासक्रमाच्या नियमित महाविद्यालयीन विद्यार्थ्यांकरीता परीक्षा आवेदनपत्रे स्विकारण्याच्या / सादर करावयाच्या तारखा खालीलप्रमाणे

क्र.	परीक्षेचे नांव / विद्याशाखेचे नांव	आवश्यक त्या शुल्कासह		आवश्यक शुल्क + विहित केलेल्या विलंब शुल्कासह	
		महाविद्यालयाने विद्यार्थ्यांकडून परीक्षा आवेदनपत्रे स्विकारावयाची तारीख	महाविद्यालयाने करावयाची तारीख	महाविद्यालयाने विद्यार्थ्यांकडून परीक्षा आवेदनपत्रे स्विकारावयाची तारीख	महाविद्यालयाने करावयाची तारीख
1.	2.	3.	4.	5.	6.
1.	वार्षिक पद्धती (Annual Pattern) अभ्यासक्रम : कला, वाणिज्य, वि-गान, गृहवि-गान, आ-गान, आयुर्वेद, वैद्यक, अभियांत्रिकी व तांत्रिकी, शिक्षण (शारिरीक शिक्षणसह) विद्याशाखेतील सर्व प्रमाणपत्र, पदविका, पदवी व पदव्युत्तर अभ्यासक्रमाच्या सर्व वार्षिक पद्धती (Annual Pattern) परीक्षा, ग-गान पारंगत परीक्षा, ग्रंथालयशास्त्र प्रमाणपत्र परीक्षा	18/12/2012	28/12/2012	02/01/2013	10/01/2013
20.	सत्र पद्धती (Semester Pattern) अभ्यासक्रम : वाणिज्य, ग-गान, समाजवि-गान, वैद्यक, विधी, शिक्षण (शारिरीक शिक्षणसह), अभियांत्रिकी व तांत्रिकी विद्याशाखेतील सर्व प्रमाणपत्र, पदविका, पदवी व पदव्युत्तर अभ्यासक्रमाच्या सर्व सत्र अर्धवार्षिक (Semester Pattern/ Bi-Annual Pattern) परीक्षा.	11/01/2013	21/01/2013	25/01/2013	04/02/2013

माजी व बहिःशाल विद्यार्थ्यांची परीक्षा आवेदनपत्रे स्विकारण्याच्या तारखांबाबत :

माजी / बहिःशाल विद्यार्थ्यांचे परीक्षा आवेदनपत्रे स्विकारण्याच्या तारखांची अधिसूचना क्रमांक 87/2012, दिनांक 28/06/2012 अन्वये यापूर्वीच प्रसिद्ध करण्यात आलेली आहे. त्यानुसार परीक्षा आवेदनपत्रे स्विकारण्याची / करावयाची कार्यवाही प्राचार्यांनी / विभागप्रमुखांनी / विद्यार्थ्यांनी करावी.

महत्वाची सूचना :

- उपरोक्त परीक्षा आवेदनपत्रे स्विकारावयाच्या / सादर करावयाच्या अंतिम तारखेस महाविद्यालय / विद्यापीठा कार्यालयास सुटी असल्यास सादर तारखेनंतर येणारी कार्यालयीन कामकाजाची तारीख ग्राह्य धरण्यात यावी.
- शैक्षणिक सत्र २०१२-१३ मधील सत्र पद्धती (Semester Pattern) अभ्यासक्रमातील द्वितीय सत्रातील नियमित विद्यार्थ्यांचे प्रवेश उपरोक्त नमूद तारखानंतर होतील अशा विद्यार्थ्यांचे परीक्षा आवेदनपत्रे त्यांचे प्रवेशेपेक्षा खेपासून दहा दिवसांचे आत विद्यापीठात सादर करावीत.
- अध्यादेश क्रमांक २१/२००१ नुसार सर्व संलग्नित महाविद्यालयांनी माजी व बहिःशाल विद्यार्थ्यांची परीक्षा आवेदनपत्रे स्विकारणे अनिवार्य आहे.

मा.कुलगुरुंचे आदेशान्वये.

आ-

(एन.ए.कोळी)

परीक्षा नियंत्रक,

संत गाडगे बाबा अमरावती विद्यापीठ.

\*\*\*\*\*

