



**Deccan Education Society's
Fergusson College (Autonomous), Pune**

Learning Outcomes-Based Curriculum

for

**T. Y. B. Sc. (Physics) with
Photography and Audio Visual Production
(Vocational)**

[Pattern 2019]
(B.Sc. Semester-V and VI)

Effective from Academic Year 2021-2022

PREAMBLE:

UGC introduced the concept of vocationalization of the first degree way back in the year 1994. Fergusson College was awarded the vocational course in Photography and Audio Visual Production under this programme in the same year. Fergusson College is the only college to offer such course at the UG level. The course is introduced as a vocational course, at par with the traditional subjects.

At the first and the second year of the B. Sc. it is offered as an independent subject. There are two theory courses and one practical course at the first and the second year.

This course is a part of the B. Sc. (Physics) programme at the third year of the degree. It is in place of the theory course 5, 6 and practical course.

Students offering the vocational course are more privileged due to their vocational training along with the conventional knowledge based curriculum. This feature forms the basis for framing the syllabus. Due importance is given to the theoretical component vis-à-vis its application keeping up the academic foundation.

Curriculum for the first year introduces the world of media and communication in general and photography in particular. The course is designed to train students to learn camera handling skills and elementary image processing techniques so that they can assist a senior photographer. They are also introduced to various media and their role / impact in society and personal life.

The second year curriculum evolves to train and prepare students to take up commercial photography assignments on their own. All the studio assignments and the image processing assignments are designed so that students are thoroughly trained in all advanced skills of photography and image processing. Students also work on some group assignments when they learn how to work in a group and develop team spirit.

Sound plays an important role in media. A course on 'Acoustics and Sound for Media' is designed to train students to use various sound equipment used in media. Some assignments are also designed to train students in recording and editing sound in a studio.

The third year syllabus is designed to train students to acquire skills useful in the video / film industry. The theory courses are designed to make students aware of the technology and the basic fundamentals of the video / film industry.

The syllabus at the third year is more practical oriented. The assignments in the four practical courses at the T. Y. level are designed to train the students in every aspect of video production.

Each assignment will give them hands-on experience of various aspects of audio-visual production. Students will be producing a video documentary at the end of the fifth semester. They will produce a social advertisement and a short film at the end of the sixth semester. It will provide a great learning experience for students.

A course on Entrepreneurship Development designed for the sixth semester, will help students to plan and develop their career independently.

OBJECTIVE:

1. To promote the possibility of self employment by providing skill based training.
2. To bridge the gap between knowledge based conventional education and market demands and to provide an alternative to those pursuing higher education.

**Structure of the T.Y. B. Sc. (Physics) with
Photography and Audio Visual Production (Vocational) course**

Year	Course Code	Title of the Course	Core / Elective	No. of Credits
T.Y. B.Sc.	Semester V			
	VPH3501	Film Review and Film Appreciation *	DSE-2	2
	VPH3502	Video Production I *	SEC-1	2
	VPH3503	Video Production II *	SEC-2	2
	VPH3504	Practical Course - V*	PCORE-5	2
	Semester VI			
	VPH3601	Video Recording and Playback Systems *	DSE-5	2
	VPH3602	Radio Production*	SEC-3	2
	VPH3603	Entrepreneurship Development*	SEC-4	2
	VPH3604	Practical Course - VI*	PCORE-6	2
	VPH3605	Practical Course - VII: *	PCORE-7	2
	VPH3606	Practical Course - VIII: Project*	PCORE-8	2

Note: For semester V:

1. *Students opting for vocational photography at F. Y. B. Sc. and S. Y. B. Sc. should select VPH3501, VPH3502, VPH3503 and VPH3504.
2. * VPH3501, VPH3502 and VPH3503 are in place of PHY3506, PHY3511 and PHY3512 respectively.
3. * VPH3504 is in place of PHY3509.

Note: For semester VI:

1. *Students opting for vocational photography at F. Y. B. Sc. and S. Y. B. Sc. should select VPH3601, VPH3602, VPH3603, VPH3604, VPH3605 and VPH3606.
2. * VPH3601, VPH3602 and VPH3603 are in place of PHY3606, PHY3611 and PHY3612 respectively.
3. * VPH3604, VPH3605 and VPH3606 are in place of PHY3607, PHY3608 and PHY3609 respectively.

T.Y. B.Sc. (Physics) with Photography and Audio Visual Production (Vocational) Semester V		
Title of the Course and Course Code	Film Review and Film Appreciation (VPH3501)	Number of Credits: 02
Course Outcomes (Cos) On completion of the course, the students will be able to:		
CO1	Recall some classic films viewed earlier.	
CO2	Discuss appealing aspects of a film.	
CO3	Classify films into various categories.	
CO4	Identify various visual elements in a scene.	
CO5	Assess a film from various aspects such as screenplay, direction, editing etc.	
CO6	Write a review article on a movie.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	History: Dadasaheb Phalke (India), Raja Harishchandra; Lumiere brothers, Alam Ara and global cinema, Silent movie Sound in cinema Topics covered social issues and their depiction in cinema. Chronology of developments in cinema and Indian and global scenario.	9
II	Visual Storytelling Understanding of Paintings and Photography Cinema as a Language or medium of communication Cinema and global impact and revolution Commercial industry - Bollywood /Hollywood Parallel cinema, Colour cinema origin Direction Understanding of different genres	9
III	Film review and film appreciation: Screening some classic films to understand various aspects of film making. Mise-en-scene and montage Understanding of Art, set, Camera, Makeup, Characters lighting Story -Narration - Dialogue Treatment Scene building Realistic and Theatrical Understanding of audience Socio-political-temporal	9
IV	Elements of film appreciation: Screenplay, writing, Character	9

building, Shot blocking, set requirement direction, acting, cinematography, editing, VFX art design, sound, music, CGI
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References:

1. Video Production Handbook 2nd Ed; Gerald Millerson; Focal Press; (1992).
2. Key Concepts & Skills for Media Studies; Vivienne Clark, James Baker, Eileen Lewis; Hodder & Stoughton, (2003).
3. Visual Effects in Cinematography; Zoran Perisic; Focal Press; (2000).
4. Picture Composition for Television and Film; Peter Ward; Focal Press; (2003).
5. The Technique of Lighting for Television and Film, 3rd Ed; Gerald Millerson; Focal Press; (1991).
6. Audio Post Production: For Film and Television; Mark Cross; Berklee Press; (2013).
7. In the Blink of an Eye: A Perspective on Film Editing, 2nd Ed; Walter Murch; Silman-James Press; (2001).
8. Audio Production and Postproduction (Digital Filmmaker); Woody Woodhall; Jones & Bartlett Learning; (2010).
9. Producing Great Sound for Film and Video: Expert Tips from Preproduction to Final Mix; 4th Ed; Jay Rose; Routledge; (2014).
10. The Complete Film Production Handbook; 4th Ed; Eve Light Honthaner; Focal Press; (2010).
11. Cinematography: Theory and Practice: Image Making for Cinematographers and Directors (Volume 3); 3rd Ed; Blain Brown; Routledge; (2016).

Video Production I (VPH3502)		
Title of the Course and Course Code	Video Production I (VPH3502)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Identify various stages of video production.	
CO2	Arrange equipment required for video production.	
CO3	Execute a given scene / shot according to given screenplay / storyboard.	
CO4	Break down a given script into finer details.	
CO5	Decide personnel and equipment according to the script.	
CO6	Write a script, screenplay and storyboard.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	Pre-production Understanding of various aspect of pre - production A: Planning for video production: Choosing subjects, formats,	12

	<p>resource persons, locations etc. Scheduling production work. Administration and management of resources and manpower. Rehearsals, visits to locations, coordination and financial management, programme formats, permissions, contracts, timelines, Scene Blocking</p> <p>B: Script writing: Concept building, storyline formation, script writing for different programme formats (feature, documentaries, news reports, fiction / non-fiction). Character building, dialogues writing, Writing for TV plays, serials etc.</p> <p>C: Screenplay: Writing for different formats, Storyboarding</p> <p>D: Proposals: Writing a proposal for video production, Budget allocation</p>	
II	<p>Production</p> <p>Production personnel and facilities:</p> <p>A. Equipment: Camera, recorders, Camera lenses, framing, white balance, camera movements (pan, tilt, and dolly) and camera angles, Types of shots, Composition and planning of shots, Continuity, Support between the producer and the camera crew sound recording (dialogues and folly), art design, set design.</p> <p>B. Personnel: Production team, Production personnel (Producer, Director), Production assistant, Cameraperson, Researchers, Performers or talent. Technical personnel: Sound recorder, Lighting assistants, Set / property and wardrobe assistants Make-up artist. Editors, effects and post production personnel</p> <p>Lighting indoors and outdoors:</p> <p>Different light sources, Indoor lighting (Key, Fill and Back lighting, Lighting for characters), Use of filters. Outdoor lighting (Natural light, use of reflectors, scrims)</p>	12
III	<p>Post production</p> <p>Video editing:</p> <p>Video editing basics, linear editing, understanding of editing layout, Data viewing, input file formats, Line of action, Transitions (Fades, Dissolves, Wipes, Cuts), Graphics, Sound mixing, Dubbing, Voice over, Music, Text titles, basic colour correction.</p>	12

References:

1. Video Production Handbook 2nd Ed; Gerald Millerson; Focal Press; (1992).
2. Key Concepts & Skills for Media Studies; Vivienne Clark, James Baker, Eileen Lewis; Hodder & Stoughton, (2003).
3. Visual Effects in Cinematography; Zoran Perisic; Focal Press; (2000).
4. Picture Composition for Television and Film; Peter Ward; Focal Press; (2003).
5. The Technique of Lighting for Television and Film, 3rd Ed; Gerald Millerson; Focal Press; (1991).
6. Audio Post Production: For Film and Television; Mark Cross; Berklee Press; (2013).
7. In the Blink of an Eye: A Perspective on Film Editing, 2nd Ed; Walter Murch; Silman-James Press; (2001).

8. Audio Production and Postproduction (Digital Filmmaker); Woody Woodhall; Jones & Bartlett Learning; (2010).
9. Producing Great Sound for Film and Video: Expert Tips from Preproduction to Final Mix; 4th Ed; Jay Rose; Routledge; (2014).
10. The Complete Film Production Handbook; 4th Ed; Eve Light Honthaner; Focal Press; (2010).
11. Cinematography: Theory and Practice: Image Making for Cinematographers and Directors (Volume 3); 3rd Ed; Blain Brown; Routledge; (2016).

Video Production II (VPH3503)		
Title of the Course and Course Code	Video Production II (VPH3503)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Recall various stages of video production.	
CO2	Arrange various shots / scenes as per screenplay.	
CO3	Use various editing techniques.	
CO4	Analyze the recorded shots / scenes and arrange them according to the script.	
CO5	Decide use of suitable visual effects while editing a shot / scene.	
CO6	Produce a film by combining audio visual effects.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	Pre-production A: Script writing: Advance Script writing B: Screenplay: Screenplay writing with dialogues, Storyboarding C: Proposals: Writing a detailed proposal for video production, Budget allocation	12
II	Production : A. Shooting a video/film following all pre production process	12
III	Post-Production Video Editing Advance, editing Workflow management, Montage editing, Non linear editing, Continuity, Intro/outro editing Motion Graphics, Chroma keying, Text Animation, Frame Composition, Frame Zooming, Editing on different frame rates, Sound level corrections, Dubbing, Folly mixing, Voice over, Music, advance colour correction, Picture-in-picture, title scrolling, lower thirds, subtitles, Different exporting formats. Different aspect ratios Publicity: Promos, Trailers, Teasers Publicity and Marketing, Screening	12

References:

1. Video Production Handbook 2nd Ed; Gerald Millerson; Focal Press; (1992).

2. Key Concepts & Skills for Media Studies; Vivienne Clark, James Baker, Eileen Lewis; Hodder & Stoughton, (2003).
3. Visual Effects in Cinematography; Zoran Perisic; Focal Press; (2000).
4. Picture Composition for Television and Film; Peter Ward; Focal Press; (2003).
5. The Technique of Lighting for Television and Film, 3rd Ed; Gerald Millerson; Focal Press; (1991).
6. Audio Post Production: For Film and Television; Mark Cross; Berklee Press; (2013).
7. In the Blink of an Eye: A Perspective on Film Editing, 2nd Ed; Walter Murch; Silman-James Press; (2001).
8. Audio Production and Postproduction (Digital Filmmaker); Woody Woodhall; Jones & Bartlett Learning; (2010).
9. Producing Great Sound for Film and Video: Expert Tips from Preproduction to Final Mix; 4th Ed; Jay Rose; Routledge; (2014).
10. The Complete Film Production Handbook; 4th Ed; Eve Light Honthaner; Focal Press; (2010).
11. Cinematography: Theory and Practice: Image Making for Cinematographers and Directors (Volume 3); 3rd Ed; Blain Brown; Routledge; (2016).

Title of the Course and Course Code	Practical Course - V (VPH3504)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Tell various stages of production.	
CO2	Discuss concept building and storyline.	
CO3	Carry out duties as camera assistant in a video production team.	
CO4	Analyse a shot / scene and use camera accordingly.	
CO5	Assess various shots / scenes for editing.	
CO6	Arrange for lighting equipments, production crew and work as production assistant.	

Sr. No.	Title of Assignment
1	Basic Film review
2	Concept building and story line formation
3	Film production stages (Film crew)
4	Study of video camera (Exposure settings and composition)
5	Types of shot (shot division)
6	Basic camera movements
7	Introduction to video editing
8	3 shot exercise
9	Introduction to screen play
10	6 shot Exercise (Camera movement only pan tilt)

11	9 shot exercise
12	Editing the 9 shot exercise

Note:

1. All the assignments and practicals are designed and conducted so that the students acquire video camera handling skills and video editing skills.
2. Students will work on one group (2-3 students) assignment and one individual assignment related to a given topic.
3. Students will cover various events on the college campus and maintain a stock of photographs.

T.Y. B.Sc. (Physics) with Photography and Audio Visual Production (Vocational) Semester VI		
Title of the Course and Course Code	Video Recording and Playback Systems (VPH3601)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe different types of audio and video signals.	
CO2	Discuss different types of television displays.	
CO3	Classify mechanisms of recording a video signal.	
CO4	Explain the record / playback mechanism for a video signal.	
CO5	Compare various media used for recording a video signal.	
CO6	Arrange home theatre system.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	Introduction Comparison of between audio and video signals, difficulties in recording and replay of video signals. Generation of video signals. Colour TV camera. Transmission of TV signal. OB Van: its constitution and applications. Digital TV standards.	9
II	Black and White and Colour TV Principles of scanning and synchronization. Composite video signal. B/W and colour picture tubes. Principles of colour. PAL colour signal. Vestigial side-band transmission. Colour TV and its working. Modern trends in TV display. Plasma TV, LCD TV, LED, OLED TV and their working. (Each of these should be discussed with appropriate block diagrams).	9
III	Recording of video signal Recording of video signal on a video tape. Transverse and helical scan. Need for rotating head mechanism, frequency modulation of video signal before recording. Tape transport mechanism and track survey. Block diagram of record / playback electronics in a VCR, VHS system.	9
IV	Recording Media Principle of recording and replay on ACD, VCD etc. Eight to fourteen modulation, digitization error detection and correction, CLV for disc rotation. Optical pick up system, focusing and tracking systems. Block diagram for VCD player. Principles, capacity for DVD. Block diagram for DVD player. Principle of data compression techniques. Principles of blue ray disc and its comparison with DVD. Block diagram of blue ray disc player. Home theatre system. Magnetic video disc machine (slow motion disc) Digital TV, Principles of HDTV and block diagram of HDTV, HD camera.	9

References

1. Audio Video Systems Principles, Practice and Troubleshooting; S. P. Bali and Rajeev Bali; Khanna Book Publishing Co. (P), Ltd., New Delhi.

Title of the Course and Course Code	Radio Production (VPH3602)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Describe the role of radio as a medium of mass communication.	
CO2	Classify the different radio programmes.	
CO3	Use radio as a medium to convey messages useful for benefit of society.	
CO4	Analyse the impact of radio in society.	
CO5	Evaluate the ethical issues involved in broadcast media practices.	
CO6	Write the script for a radio programme.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	Radio: 1. Media introduction & functions 2. Radio: characteristics and advantages 3. Introduction to Radio as a medium of mass communication and its characteristics 4. Organization and management of AIR audience research units. 5. International Radio Broadcasting (BBC, VOA etc.)	9
II	Structure of Radio: FM stations: Community radios, Role, Significance and Limitations Commercial Radio: Copy writing for 'ad' Internet / web radio: Radio of the future	9
III	Radio Programmes: A: 1. Music: Role of music in AV production (folk, classical, semi-classical, instrumental, film music) 2. Writing for radio: its importance and difference from print media 3. Talks and talk-lets over radio and their varieties 4. Interviews: a fascinating art of radio / TV programming 5. Feature programs over radio and their characteristics 6. Educational programmes 7. Theme based programmes 8. Special audience programs B: 1. Outdoor broadcast programs over Radio and linking communications.	9

	2. Present conditions of Radio and Government policy of Broadcasting. 3. Efforts in making Radio free from Government. 4. Radio news: Gathering, processing and production of news for Radio.	
IV	Ethics of Broadcasting: AIR code, Advertising code, Copyright and Royalty.	9

References:

1. Broadcasting in India; P. C. Chatterjee; Sage; New Delhi.
2. Broadcast Journalism; Boyd Andrew; Focal Press; London.
3. News Writing for Radio and TV; K. M. Shrivastava; Sterling Publication, New Delhi.
4. This is All India Radio; U. L. Baruah; Publications Division.
5. VANI: Culture your voice; Prasar Bharati Publication.

Note:

1. Sessions related to programmes will be conducted in a recording studio.
2. Recording assignments are designed to expose students to gain hands-on experience in production and post production processes involved in a recorded programme.

Entrepreneurship Development (VPH3603)		
Title of the Course and Course Code	Entrepreneurship Development (VPH3603)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe qualities of an entrepreneur.	
CO2	Explain the concept of entrepreneurship, business and business organization.	
CO3	Examine and execute a business plan.	
CO4	Identify the business needs and organize the finance accordingly.	
CO5	Compare different marketing strategies and select the most suitable strategy.	
CO6	Prepare a business plan and execute it.	

Unit No.	Title of Unit and Contents	No. of Lectures
I	A: Introduction Concept of entrepreneurship, Historical background, Need and scope of entrepreneurship in modern society, Entrepreneurship behavior, attributes and skills, Barriers of entrepreneurship and means to reduce them B: Business organization Forms of business organization such as Proprietorship, Limited Liability Partnership (LLP), Partnership, Private Limited & Public Limited Company. C: Legal aspects of small business: Elementary knowledge of Income Tax, Sales Tax, VAT, Service	9

	Tax, Patent rules, Excise Rules, Factory Act and Payment of Wages Act, Procedures for registration of Small Scale Industries.	
II	<p>Understanding Finance: Study of Balance sheet, Profit & Loss statement, Fund flow, Concept of depreciation, Returns of Investments (RoI), Working Capital, Capital, Preparing Project report.</p> <p>Sources of Finance: 1. Equity - Angel finance, Venture Capital 2. Debt Finance - Loans from banks loan against co-lateral security, PMRPY - Loans with subsidy from Central Government, State Government, CGTSME (Central Grant For Small Medium Enterprise)</p>	9
III	<p>Marketing: Meaning, scope and importance, Marketing strategy, Marketing segmentation, Market size, various marketing channels, Digital marketing through Web browsing, Facebook, Google search engines, SMS campaigns, Mailers, Handbills etc. Salesmanship, selling a product, generating enquiry, how to select prospective, presentation, closing of sale.</p>	9
IV	<p>Generation of innovative ideas and preparation of business plan: 1. Introduction to innovative idea (techno-scientific ideas), Copyright and IPR 2. Financial planning, budgeting, finance management 3. Human resource planning and management 4. Project management, process and product management 5. Marketing management</p>	9

References:

1. Dynamics of Entrepreneurial Development and Management; Shri. Vasant Desai.
2. Business Environment; Dr. G. V. Kayande Patil.
3. Basic Communication Skills; P. Kiranmai Dutt & Geetha Rajeevan; 2000.
4. A Guide to Small Scale Entrepreneurs; Director of Industries, Govt. of Tamil Nadu, Chennai, Latest edition
5. Entrepreneurship and Small Business Management; Dr. C. B. Gupta & Dr. Khanna.
6. Project Management; K. Nagarajan.
7. Entrepreneurship Ideas in Action; Cynthia L. Greene (YCMOU) Edition.

Title of the Course and Course Code	Practical Course - VI (VPH3604)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe various radio programmes.	
CO2	Give examples of different camera movements.	
CO3	Carry out duties as camera assistant in a video production team.	
CO4	Analyse a shot / scene and use camera accordingly.	
CO5	Assess current situation and arrange for a panel discussion on radio.	
CO6	Produce a film to give a social message.	

Sr. No.	Title of Assignment
1	Screenplay, Script Writing
2	2 Shot Assignment
3	Multilayer Assignment
4	Advanced Camera movements (with track-trolley)
5	Demo of multi camera setup with assignments
6	Sound Dubbing
7	Radio Interview
8	Radio - Theme based program (musical)
9	Radio - Story telling
10	Radio - (group) Panel discussion
11	News reading for radio
12	Social Advertisement

Note:

1. All the assignments and practicals are designed and conducted so that the students acquire video camera handling skills and video editing skills.
2. Students will work on one group (2-3 students) assignment and one individual assignment related to a given topic.
3. Students will cover various events on the college campus and maintain a stock of photographs.

Title of the Course and Course Code	Practical Course - VII (VPH3605)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Identify different visual styles.	
CO2	Arrange lighting setup to produce desired effect.	
CO3	Carry out duties as sound recording assistant in a video production team.	
CO4	Organize resources to produce short videos.	
CO5	Assess the voice quality of a person for sound dubbing.	
CO6	Prepare a budget and proposal for video project.	

Sr. No.	Title of Assignment
1	Design a production (Planning for video production)
2	Understanding visual style
3	Lighting demo and creating effects
4	Sound recording
5	Dubbing and Sound Designing for entire scene
6	Location sound recording (with multiple microphones)
7	News capsule (With chroma lighting)
8	Create meaningful video using montage
9	Recording and editing a 2 minute interview for video multi camera assignment
10	1 minute Meaningful video using mise-en-scene
11	Scripting shooting, editing of 2 minutes meaningful sequence using 1 character
12	Budgeting & proposals for video project

Note:

1. All the assignments and practicals are designed and conducted so that the students acquire video camera handling skills and video editing skills.
2. Students will work on one group (2-3 students) assignment and one individual assignment related to a given topic.
3. Students will cover various events on the college campus and maintain a stock of photographs.

Title of the Course and Course Code	Practical Course – VIII: Project (VPH3606)	Number of Credits: 02
Course Outcomes (Cos)		
On completion of the course, the students will be able to:		
CO1	Identify various personnel working for a video production team.	
CO2	Outline the duties of various personnel working for a video production team.	
CO3	Use higher level camera handling, lighting and sound recording skills required for a video production.	
CO4	Organize the identified personnel for a video production.	
CO5	Assess various shots / scenes for editing.	
CO6	Develop team spirit, leadership qualities and ability to think creatively.	

Students will work as a team of 4-5 members and produce a short film of 8-10 minute duration. They will also arrange for the publicity and screening of the film, they produce.