Unit 23: Multi-Camera Techniques

Unit code: T/600/6648

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

● Aim and purpose

This unit aims to develop understanding of multi-camera television formats, and to develop skills in multi-camera production techniques. Learners will also gain an appreciation of how the multi-camera process integrates with other production skills and gain valuable experience of studio management, multi-camera directing and studio floor techniques.

● Unit introduction

The term 'multi-camera production' covers a wide range of specialisms and skills in the moving image industry. It is applied in situations as diverse as live broadcasts of sports events and concerts, TV productions such as game and chat shows, and the provision of screen displays for corporate conferences.

This unit enables learners to develop the knowledge and skills fundamental to this sector of the industry by undertaking the study of professional productions and applying that knowledge in practical multi-camera productions. The unit introduces advanced technical skills in the use of sound and vision equipment and the essential working practices and conventions of successfully working in a production team.

A good grasp of these skills provides the foundation for working in specific technical and production roles in the industry, from studio producer to sports camera, and on programmes as diverse as soap operas, comedy game shows, music festival broadcasts, local news magazines or Premier League football matches.

The technical and team-working skills developed can complement and develop those from other units in pre-production, video production and production management as well as providing learners with opportunities to gain new specialist skills such as vision mixing and floor management.

The unit mirrors professional practice in providing the opportunity to practise production skills in a tightly time-constrained environment requiring commitment to working at the highest possible standards.

● Learning outcomes

On completion of this unit a learner should:

1   Understand programme formats that use multi-camera production

2   Be able to plan a multi-camera production

3   Be able to perform an operational role in a multi-camera production.

Unit content

1   Understand programme formats that use multi-camera production

Programme formats: live events, eg sports, concerts, stage productions public events; studio productions, eg game shows, chat shows, news magazines, studio-based drama

Reasons for multi-camera use: coverage of action; communicating meaning to the viewer; visual style; maintaining viewer interest; constraints of studio or location environment; multi-camera simultaneous recording

2   Be able to plan a multi-camera production

Multi-camera production roles: camera operation; sound recording and mixing; vision mixing; directing; lighting desk; floor management; graphics generation

Develop programme ideas: programme format, eg studio production, live event; content ideas; visual style; presentation style; scripts, links and inserts; refining original ideas to final script/running order

Planning processes: range of equipment required; allocation of job roles; conversion of word scripts to shot lists; design, eg lighting, set, sound; location recce; timing and sequencing; health and safety considerations

Production documentation: timed scripts; shot lists; studio floor plans; location plans; lighting plans; risk assessments; equipment checklist; camera script

3   Be able to perform an operational role in a multi-camera production

Perform a practical role: eg cameras, sound mixing desk, vision mixer, direction, lighting desk, talk-back, video playback, floor management, graphics generation; communicate effectively

Operational methods: communication within production team, eg shot calling, talk-back, cueing; vision mixing; video and graphic inserts; sound mixing; health and safety considerations

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 describe multi-camera production programme formats with some appropriate use of subject terminology [IE]	**M1** explain multi-camera production programme formats with reference to detailed illustrative examples and with generally correct use of subject terminology	**D1** comprehensively explain multi-camera production programme formats with elucidated examples and consistently using subject terminology correctly
P2 plan a multi-camera production with some assistance [CT]	**M2** plan a multi-camera production competently and effectively showing some imagination and with only occasional assistance	**D2** plan a multi-camera production to a quality that reflects near-professional standards showing creativity and flair and working independently to professional expectations
P3 perform an operational role in a multi-camera production with some assistance. [TW]	**M3** perform an operational role in a multi-camera production to a good technical standard with only occasional assistance.	**D3** perform an operational role in a multi-camera production to a technical quality that reflects near-professional standards working independently to professional expectations.

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Multi-camera production techniques are of their nature team activities and this unit requires a group approach throughout. Tutors must recognise that whilst the practical production will be planned, developed and produced as a team activity individual learners' contributions need to be tracked and evidence of achievement individually produced.

This unit can be taught as a stand alone but will be most effectively if taught as part of a combined series of units. Such a strategy can help develop or build on a skill base in tandem with other appropriate production areas.

The content of the unit can be introduced by the study and analysis of examples of multi-camera productions providing learners with the understanding with which to develop their own ideas for production.

The early stages of the planning and development of the production can be carried out at the same time as a series of practical exercises and seminars introducing the technical equipment, its use and the team roles required for the successful achievement of the production. This will inform learners' planning and development and help them to be realistic in their ideas. It will also enable them to understand the reasons for using professional conventions for communication, shot calling, talk-back, etc. It is important to rotate roles during practice exercises so that learners can experience as many techniques as possible to further a wider understanding before allocation of roles within the teams. Depending on the form of the production, one way of assuring equal contributions from all team members is to split the production into segments and rotate job roles, with a mini team planning and producing each segment and perhaps another producing introductions and links.

The team should identify, early on, the nature of the programme they are to make and produce appropriate paperwork to support their planning. They should use their understanding of programme formats to identify a potential programme and develop a proposal and treatment that can be pitched to a client or the tutor.

Alternatively, each learner could be required to develop an idea for a production and pitch this to the group, with the best ideas being chosen to go into production and allocated to the teams. The need to pitch their production ideas to the tutor and group can provide motivation for thorough research and planning.

Another approach can be to plan the production around an actual live event or performance, providing opportunities for links with performing arts, music, fashion design or sports within a centre or with actual clients in the local community. The team's interpretation of the event and application of techniques will still provide ample opportunities for creativity, whilst also requiring a high level of professionalism to successfully cover a live event under strict time constraints.

The nature of the actual production will be partly dictated by resources available, but a minimum of three cameras directly feeding to a vision mixer, a range of sound sources to a mixing desk with linked monitors, and output to a means of recording the final product are essential. Further sophistication of the technical facilities will enhance the production and provide a greater range of specialist job roles, but even with the minimum facilities it is possible to apply professional working practices to high standards.

Forms for storyboards, location recces, risk assessments, studio floor plans, lighting plans, cue sheets and shot lists can encourage learners to focus on producing thorough planning documentation. Resources detailing job roles and responsibilities, conventions for shot calling and crew communication are also recommended.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way of planning the teaching and assessment of this unit.

Topics and suggested assignments and activities
Introduction to unit and unit assessment.
Class discussion – programme formats suitable for multi-camera shooting.
The advantages of multi-camera – learners consider how multi-camera techniques can be used in a variety of situations.
Multi-camera case studies of examples of multi-camera productions.
Assignment 1 – Multi-Camera Case Study Learners will: • research and write a case study in the form of a report or blog entry on programme formats that use multi-camera techniques with suitable examples • give an illustrated presentation, or create a short video, on a multi-camera production analysing the use of multi-camera within it.
Introduction to multi-camera environments and health and safety.
Introduction to camera use and functions.
Introduction to sound mixing and microphone use (boom, tie and hand held).
Introduction to lighting and lighting desk (3 point, rig and portable, and as appropriate for centre's facilities).
Introduction to communication with the floor: • talk-back, cueing, shots and calls • floor signals and calls.
Introduction to vision mixing.
Round up and review of multi-camera production techniques.
Practise multi-camera roles and procedures.

Topics and suggested assignments and activities
Assignment 2 – Multi-Camera Production

Part 1: pre-production
 	
Learners must produce:
 	
1. a completed pre-production folder to production-ready status, clearly labelled to show their individual contribution by role
 	
2. an individual production diary or blog containing –
   ◊ a description of the crew roles and responsibilities and how these relate to the given role
   ◊ initial production scenario
   ◊ development of ideas – visual style, presenter style, outline of content
   ◊ refinement of ideas – initial shooting script
   ◊ list of equipment needs and allocation of job roles
   ◊ shot lists, lighting plans, sound design and other plans as needed.
 	
Part 2: production
 	
Learners must take part in a multi-camera production and produce a supporting evaluation of the final production and their performance in their role covering:
 	
• set construction
• rehearsal and walkthroughs
• studio shoots
• playback to client/intended audience
• review of the success of the production and own role.

Unit learning and assessment review.

Assessment

Evidence for assessment

Evidence of understanding for achievement of learning outcome 1 could be in the form of individual illustrated reports, blogs or vlogs, but other approaches may be appropriate, such as individual or team presentations which could employ video or multimedia resources. These presentations could be linked to the learners' own proposals for a production, putting their proposals in the context of professional products, and justifying their ideas by citing professional examples.

Evidence for achievement of learning outcome 2 may also consist of tutor observation of team meetings and the notes of those meetings. Further evidence can be generated through the planning and production documentation submitted as a production file.

Evidence for achievement of learning outcome 3 will principally be generated through the actual production. However, this needs to be supported with learner written or video documentation of the process, tutor observation or recording of the process, including exercises, dry runs, setting-up and rehearsals.

Any oral presentations must be recorded for internal and external verification purposes.

For some elements of this unit, and for some learners, a formal viva voce assessment might be appropriate. When more than one learner in a cohort is assessed in this way care must be taken to ensure that all learners are asked equivalent questions, and that all are given equal opportunities to expand or clarify their answers. Interviewers must also ensure that questions are not phrased in such a way as to provide or suggest an answer. Formal vivas should be recorded for the purposes of internal and external verification and at least 50 per cent of such assessments must be internally verified.

Application of grading criteria

When applying the grading criteria, tutors should follow the advice given below. Please note that any examples of evidence given here are indicative only. This advice is not exhaustive and the examples need not specifically be included in a learner's work in order for that learner to achieve the exemplified grade.

Pass

To achieve a pass grade, learners must achieve all the criteria at pass level. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

P1: learners will describe multi-camera productions covering studio and outside broadcasting. All aspects of the description will be accurate, relevant and substantial. A mere listing of multi-camera production formats is not sufficient evidence for achievement of the criterion. The evidence must show that the learner has understood how and why multi-camera production techniques have been applied. Evidence will show a basic understanding of technical terminology but learners will generally be unsure about this vocabulary and will make fairly frequent mistakes when they do use it.

P2: though their ideas will not always be feasible, learners will contribute to the planning of the team production and will provide basic planning and production documentation. In terms of the aesthetic or creative qualities of their ideas, learners will not move beyond the conventional but the conventions applied will be appropriate to the form or genre within which they are working.

P3: learners will have operated within the conventions of industry working practice whilst fulfilling a production role in the team production. They will have contributed to the production but will have been passive rather than active members of the team.

P2 and P3: learners will need frequent assistance and support, though they will take note of and make use of this help when it is given. If they are in frequent need of such help but fail to make positive use of it they should not be considered for a pass grade for this unit.

Merit

To achieve a merit grade, learners must achieve all the pass and all the merit grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

M1: learners will discuss a good range of studio and outside broadcasting multi-camera productions in such a way as to show how and why the relevant production techniques have been employed. They will select details from their examples to support and illustrate their discussion, but will not elucidate the examples to show how they illustrate the point they support. Learners will use technical vocabulary for the most part correctly, but may make mistakes or be unsure about usages at times.

M2: learners will actively contribute to the planning of the team production, putting forward ideas that are, on the whole, sensible and realistic. Planning will be methodical and production documentation will be carefully and competently produced, ideas being well worked out and presented neatly. Learners will still be working within recognisable generic conventions, but there will be some thought behind the concept for the production, and codes and conventions will be used with some inventiveness.

M3: learners will show some confidence in relation to technical skills and the handling of equipment. Their contribution to the production will be constructive, processes being undertaken with care and efficiency.

M2 and M3: learners will need little assistance, though typically they will still need some support when dealing with more complex technology. Like the pass grade learner, they will respond positively to any help given.

Distinction

To achieve a distinction grade, learners must achieve all the pass, all the merit and all the distinction grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

D1: learners will cover a wide range of studio and outside broadcasting multi-camera productions, in such a way as to evaluate the application of the production techniques. Using carefully chosen details to illustrate their points, they will compare, assess and discriminate between the examples they look at, justifying points made with supporting arguments. They will draw out of an example precisely what it is about it that exemplifies the point it illustrates. Technical vocabulary will be secure and used correctly and confidently at all times.

D2: contributions to the planning of the team production will be consistently positive and helpful, and the ideas that they put forward will, as often as not, be the ones that are taken up by the rest of the group. Distinction grade learners will typically take the lead in group work, to the benefit of the production. Planning and production documentation will be produced to near-professional standards. Learners will show creativity and imagination in the way they develop ideas, and their ideas and plans will therefore move beyond the conventional. Though they might still be working within recognisable generic conventions, they will use the conventions creatively and with occasionally surprising results.

D3: in relation to technical skills and the handling of equipment, learners will demonstrate near-professional standards. This does not mean the learner achieves actual professional standards. 'Near' means that technical and production skills are beginning to approach the professional standard and bear comparison with it.

D2 and D3: learners will be capable of working autonomously and effectively. They will be able to work on their own initiative, without constant support or supervision, and will give the work their full commitment. They will work positively and cooperatively with others, responding to instruction positively. In other words, they will act as would be expected of them in a professional context.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Pearson assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1,D1	Assignment 1 – Multi-Camera Case Study	Learners are required to discuss the purpose and techniques of a variety of multi-camera productions using suitable case studies.	- All research notes. - Written or video case study. - Presentation slides. - Recording of presentation.

Criteria covered	Assignment title	Scenario	Assessment method
P2,M2,D2	Assignment 2 – Multi-Camera Production Part 1: pre-production	Learners are required to pre-produce and shoot a multi-camera production and evaluate their own role within it.	• Individual pre-production diary. • Group pre-production folder. • Tutor observation records.
P3,M3,D3	Assignment 2 – Multi-Camera Production Part 2: production	As above.	• Individual production diary. • Group production folder. • Tutor observation records. • Evaluation of own and group's production work.

Links to other BTEC units

This unit forms part of the BTEC Creative Media Production suite. This unit has particular links with the following units in the BTEC Creative Media Production suite:

Level 2	Level 3
	Single Camera Techniques

Essential resources

Two or more cameras directly feeding to a vision mixer, a range of sound sources linked to a mixing desk, linked monitors, VT playback, computer graphics generation, and output to a means of recording the final product are essential for this unit. Some form of talk-back facility is needed for communication during the production. Learners will also need access to a range of recordings of multi-camera productions for initial analysis of codes, conventions and techniques.

Employer engagement and vocational contexts

Employer engagement for this unit could take the form of work experience in a television studio or other multi-camera environment, or visiting professionals advising learners as they work in their centre's studio. Visits to multi-camera filming sessions are easily arranged with major producers such as the BBC and local television production houses.

With the advent of many smaller audience and highly specialised digital channels, such as genre, public access and local area programming, it may be possible for work of high quality to gain actual air time.

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	investigating the techniques and purpose of multi-camera production and applying reasoned, evidence-based conclusions to a case study planning and carrying out research for a production or report
Creative thinkers	planning original multi-camera productions by generating ideas and trying out alternative solutions connecting their own and others' ideas in a creative and applied way to enhance the production
Team workers	working as part of a crew to bring a production to completion while taking full responsibility for their own contribution and supporting those around them collaborating towards a common goal while showing fairness and consideration to others.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Reflective learners	reviewing the progress of a production in order to inform future progress
Self-managers	managing their time as priorities change during the pre-production process.

● Functional Skills – Level 2

Skill	When learners are …
ICT – Use ICT systems	
Manage information storage to enable efficient retrieval	researching for a presentation and preparing and amending electronically stored presentation and written material
ICT – Find and select information	
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	exploring and assessing different information from websites and other electronic research sources
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	producing a finished research production folder bringing together a variety of different documents
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	presenting own idea for a production to a group and discussing projects as part of a production crew.