## lab1 practice selenium continued

January 18, 2022

## 1 Lab 1 - Practice - Selenium

```
[]: from selenium import webdriver
     from webdriver_manager.chrome import ChromeDriverManager
     from bs4 import BeautifulSoup as BS
     driver = webdriver.Chrome(ChromeDriverManager().install())
     ntnu_faculties = "https://www.ntnu.edu/faculties"
     driver.get(ntnu_faculties)
     content = driver.page_source
     soup = BS(driver.page_source, features="html.parser")
     driver.quit()
    ===== WebDriver manager =====
    Current google-chrome version is 97.0.4692
    Get LATEST chromedriver version for 97.0.4692 google-chrome
    [C:\Users\mathi\.wdm\drivers\chromedriver\win32\97.0.4692.71\chromedriver.exe]
    found in cache
    C:\Users\mathi\AppData\Local\Temp\ipykernel_4916\1972645700.py:5:
    DeprecationWarning: executable path has been deprecated, please pass in a
    Service object
      driver = webdriver.Chrome(ChromeDriverManager().install())
[]: soup
[]: <html class="ltr yui3-js-enabled webkit js chrome chrome97 chrome97-0 win
     secure" dir="ltr" lang="en-GB"><head>
     <title>Faculties and departments - NTNU</title>
     <meta content="initial-scale=1.0, width=device-width" name="viewport"/>
     <meta content="yes" name="mobile-web-app-capable"/>
     <meta content="NTNU" name="application-name"/>
     <meta content="yes" name="apple-mobile-web-app-capable"/>
     <meta content="NTNU" name="apple-mobile-web-app-title"/>
     <meta content="default" name="apple-mobile-web-app-status-bar-style"/>
```

```
<link href="https://www.ntnu.edu/o/ntnu-theme/images/ntnu-icon-60x60.png"</pre>
rel="apple-touch-icon"/>
<link href="https://www.ntnu.edu/o/ntnu-theme/images/images/ntnu-icon-76x76.png"</pre>
rel="apple-touch-icon" sizes="76x76"/>
<link href="https://www.ntnu.edu/o/ntnu-theme/images/ntnu-icon-120x120.png"</pre>
rel="apple-touch-icon" sizes="120x120"/>
<link href="https://www.ntnu.edu/o/ntnu-theme/images/ntnu-icon-152x152.png"</pre>
rel="apple-touch-icon" sizes="152x152"/>
link
href="//fonts.googleapis.com/css?family=Open+Sans:400italic,400,300,600,700"
rel="stylesheet" type="text/css"/>
<meta content="MvmsXC06IWyb82SIuHjRFnJodYChvM7Vot7rt_2EcGk" name="google-site-</pre>
verification"/>
<meta content="text/html; charset=utf-8" http-equiv="content-type"/>
<script async="" src="//siteimproveanalytics.com/js/siteanalyze 6000120.js"</pre>
type="text/javascript"></script><script async="" src="//www.google-
analytics.com/analytics.js"></script><script data-senna-track="permanent"
src="/o/frontend-js-lodash-web/lodash/lodash.js"
type="text/javascript"></script>
<script data-senna-track="permanent" src="/o/frontend-js-lodash-</pre>
web/lodash/util.js" type="text/javascript"></script>
<link href="https://www.ntnu.edu/o/ntnu-theme/images/logoicon.ico" rel="icon"/>
<link data-senna-track="temporary" href="https://www.ntnu.edu/nb/faculties"</pre>
hreflang="nb-N0" rel="alternate"/>
<link data-senna-track="temporary" href="https://www.ntnu.edu/faculties"</pre>
hreflang="x-default" rel="alternate"/>
<link data-senna-track="temporary" href="https://www.ntnu.edu/faculties"</pre>
hreflang="en-GB" rel="alternate"/>
<link class="lfr-css-file" data-senna-track="temporary"</pre>
href="https://www.ntnu.edu/o/ntnu-theme/css/clay.css?browserId=other&themeId
=ntnutheme_WAR ntnutheme&minifierType=css&languageId=en_GB&b=7110&am
p;t=1642170190000" id="liferayAUICSS" rel="stylesheet" type="text/css"/>
<script async="" charset="utf-8" id="yui_patched_v3_18_1_1_1642499923715_56" src</pre>
="/combo/?browserId=other&minifierType=&languageId=en_GB&b=7110&
t=1642173727277&/o/frontend-js-web/aui/event-touch/event-touch-
min.js&/o/frontend-js-web/aui/event-move/event-move-min.js"></script><link h
ref="/combo/?browserId=other&minifierType=&languageId=en_GB&b=7110&a
mp; t=1642173727277& /o/frontend-js-web/aui/widget-
base/assets/skins/sam/widget-base.css&/o/frontend-js-web/aui/widget-
stack/assets/skins/sam/widget-stack.css&/o/frontend-js-web/aui/aui-tooltip-
base/assets/skins/sam/aui-tooltip-base.css&/o/frontend-js-web/aui/aui-
alert/assets/skins/sam/aui-alert.css"
id="yui_patched_v3_18_1_1_1642499923715_59" rel="stylesheet"/><script async=""
charset="utf-8" id="yui_patched_v3_18_1_1_1642499923715_60"
src="https://www.ntnu.edu/o/frontend-js-web/liferay/available_languages.jsp?brow
serId=other& themeId=ntnutheme_WAR_ntnutheme& colorSchemeId=01& minifie
rType=js&languageId=en_GB&b=7110&t=1642173725210"></script><script
```

```
async="" charset="utf-8" id="yui_patched_v3_18_1_1_1642499923715_61" src="/combo
/?browserId=other&minifierType=&languageId=en GB&b=7110&t=164217
3727277&/o/frontend-js-web/aui/base-core/base-core-min.js&/o/frontend-
js-web/aui/base-observable/base-observable-min.js&/o/frontend-js-
web/aui/aui-widget-cssclass/aui-widget-cssclass-min.js&/o/frontend-js-
web/aui/aui-widget-toggle/aui-widget-toggle-min.js&/o/frontend-js-
web/aui/base-build/base-build-min.js&/o/frontend-js-web/aui/aui-aria/aui-
aria-min.js&/o/frontend-js-web/aui/transition/transition-
min.js&/o/frontend-js-web/aui/aui-widget-transition/aui-widget-transition-
min.js&/o/frontend-js-web/aui/aui-widget-trigger/aui-widget-trigger-
min.js&/o/frontend-js-web/aui/widget-position/widget-position-
min.js&/o/frontend-js-web/aui/widget-position-align/widget-position-align-
min.js&/o/frontend-js-web/aui/widget-stdmod/widget-stdmod-
min.js&/o/frontend-js-web/aui/aui-widget-position-align-suggestion/aui-
widget-position-align-suggestion-min.js&/o/frontend-js-
web/aui/escape/escape-min.js&/o/frontend-js-web/aui/widget-autohide/widget-
autohide-min.js"></script><script async="" charset="utf-8"</pre>
id="yui_patched_v3_18_1_1_1642499923715_62" src="/combo/?browserId=other&min
ifierType=&languageId=en_GB&b=7110&t=1642173727277&/o/frontend-
js-web/aui/widget-position-constrain/widget-position-constrain-
min.js&/o/frontend-js-web/aui/widget-stack/widget-stack-
min.js&/o/frontend-js-web/aui/aui-tooltip-base/aui-tooltip-base-
min.js&/o/frontend-js-web/aui/aui-tooltip-delegate/aui-tooltip-delegate-
min.js&/o/frontend-js-web/liferay/language.js&/o/frontend-js-
web/aui/async-queue/async-queue-min.js&/o/frontend-js-web/aui/gesture-
simulate/gesture-simulate-min.js&/o/frontend-js-
web/liferay/navigation_interaction.js&/o/frontend-js-web/aui/querystring-
stringify/querystring-stringify-min.js&/o/frontend-js-web/aui/aui-io-
request/aui-io-request-min.js&/o/frontend-js-web/aui/cookie/cookie-
min.js&/o/frontend-js-web/aui/timers/timers-min.js&/o/frontend-js-
web/aui/aui-alert/aui-alert-min.js&/o/frontend-js-
web/liferay/node.js&/o/frontend-js-
web/liferay/portlet_base.js&/o/frontend-js-
web/liferay/alert.js&/o/frontend-js-
web/liferay/notification.js"></script><script async="" charset="utf-8"
id="yui_patched_v3_18_1_1_1642499923715_63" src="/combo/?browserId=other&min
ifierType=&languageId=en GB&b=7110&t=1642173727277&/o/frontend-
js-web/liferay/session.js"></script><link href="/combo/?browserId=other&amp;mini
fierType=&languageId=en GB&b=7110&t=1642173727277&/o/frontend-
js-web/aui/cssbutton/cssbutton-min.css&/o/frontend-js-web/aui/widget-
modality/assets/skins/sam/widget-modality.css&/o/frontend-js-web/aui/aui-
button-core/assets/skins/sam/aui-button-core.css&/o/frontend-js-web/aui/aui-
modal/assets/skins/sam/aui-modal.css&/o/frontend-js-web/aui/resize-
base/assets/skins/sam/resize-base.css"
id="yui_patched_v3_18_1_1_1642499923715_242" rel="stylesheet"/><script async=""
charset="utf-8" id="yui_patched_v3_18_1_1_1642499923715_243" src="/combo/?browse
rId=other&minifierType=&languageId=en_GB&b=7110&t=1642173727277&
```

```
amp;/o/frontend-js-web/aui/aui-parse-content/aui-parse-content-
min.js&/o/frontend-js-web/liferay/portlet_url.js&/o/frontend-js-
web/aui/aui-overlay-base-deprecated/aui-overlay-base-deprecated-
min.js&/o/frontend-js-web/aui/aui-overlay-mask-deprecated/aui-overlay-mask-
deprecated-min.js&/o/frontend-js-web/aui/aui-loading-mask-deprecated/aui-
loading-mask-deprecated-min.js&/o/frontend-js-web/aui/aui-dialog-iframe-
deprecated/aui-dialog-iframe-deprecated-min.js&/o/frontend-js-
web/aui/button-core/button-core-min.js&/o/frontend-js-web/aui/button-
plugin/button-plugin-min.js&/o/frontend-js-web/aui/widget-buttons/widget-
buttons-min.js&/o/frontend-js-web/aui/widget-modality/widget-modality-
min.js&/o/frontend-js-web/aui/dd-ddm-base/dd-ddm-base-
\verb|min.js\&amp|; /o/frontend-js-web/aui/dd-drag/dd-drag-min.js\&amp|; /o/frontend-js-web/aui/dd-drag/dd-drag-min.js\&amp|; /o/frontend-js-web/aui/dd-drag/dd-drag-min.js\&amp|; /o/frontend-js-web/aui/dd-drag/dd-drag-min.js\&amp|; /o/frontend-js-web/aui/dd-drag-min.js&amp|; /o/frontend-js-we
web/aui/dd-plugin/dd-plugin-min.js&/o/frontend-js-web/aui/dd-constrain/dd-
constrain-min.js&/o/frontend-js-web/aui/button/button-
min.js"></script><script async="" charset="utf-8"
id="yui_patched_v3_18_1_1_1642499923715_244" src="/combo/?browserId=other&mi
nifierType=&languageId=en_GB&b=7110&t=1642173727277&/o/frontend-
js-web/aui/button-group/button-group-min.js&/o/frontend-js-web/aui/aui-
button-core/aui-button-core-min.js&/o/frontend-js-web/aui/aui-toolbar/aui-
toolbar-min.js&/o/frontend-js-web/aui/aui-widget-toolbars/aui-widget-
toolbars-min.js&/o/frontend-js-web/aui/event-flick/event-flick-
min.js&/o/frontend-js-web/aui/event-valuechange/event-valuechange-
min.js&/o/frontend-js-web/aui/event-tap/event-tap-min.js&/o/frontend-js-
web/aui/dd-ddm/dd-ddm-min.js&/o/frontend-js-web/aui/dd-ddm-drop/dd-ddm-drop-
min.js&/o/frontend-js-web/aui/dd-drop/dd-drop-min.js&/o/frontend-js-
web/aui/dd-drop-plugin/dd-drop-plugin-min.js&/o/frontend-js-web/aui/dd-
delegate/dd-delegate-min.js&/o/frontend-js-web/aui/resize-base/resize-base-
min.js&/o/frontend-js-web/aui/resize-plugin/resize-plugin-
min.js&/o/frontend-js-web/aui/aui-modal/aui-modal-min.js&/o/frontend-js-
web/aui/aui-modal-resize/aui-modal-resize-min.js&/o/frontend-js-
web/liferay/widget_zindex.js"></script><script async="" charset="utf-8"
id="yui_patched_v3_18_1_1_1642499923715_245" src="/combo/?browserId=other&mi
nifierType=&languageId=en_GB&b=7110&t=1642173727277&/o/frontend-
js-web/liferay/util_window.js&/o/frontend-js-
web/liferay/sign_in_modal.js"></script><script async="" charset="utf-8"
id="yui_patched_v3_18_1_1_1642499923715_246" src="/combo/?browserId=other&mi
nifierType=&languageId=en_GB&b=7110&t=1642173727277&/o/frontend-
js-web/aui/querystring-parse/querystring-parse-min.js&/o/frontend-js-
web/aui/aui-url/aui-url-min.js"></script><link href="/combo/?browserId=other&amp
;minifierType=&languageId=en_GB&b=7110&t=1642173727277&/o/fronte
nd-js-web/aui/tabview/assets/skins/sam/tabview.css&/o/frontend-js-
web/aui/aui-tabview/assets/skins/sam/aui-tabview.css"
id="yui_patched_v3_18_1_1_1642499923715_253" rel="stylesheet"/><script async=""
charset="utf-8" id="yui_patched_v3_18_1_1_1642499923715_254" src="/combo/?browse
rId=other&minifierType=&languageId=en GB&b=7110&t=1642173727277&
amp;/o/frontend-js-web/aui/widget-parent/widget-parent-min.js&/o/frontend-
js-web/aui/widget-child/widget-child-min.js&/o/frontend-js-web/aui/tabview-
```

```
base/tabview-base-min.js&/o/frontend-js-web/aui/tabview/tabview-
min.js&/o/frontend-js-web/aui/aui-tabview/aui-tabview-min.js"></script><link
data-senna-track="temporary" href="/o/frontend-css-web/main.css?browserId=other&
amp; themeId=ntnutheme_WAR ntnutheme& minifierType=css& languageId=en_GB&am
p;b=7110&t=1642173726863" id="liferayPortalCSS" rel="stylesheet"
type="text/css"/>
<link data-senna-track="temporary" href="/combo?browserId=other&amp;minifierType</pre>
=& themeId=ntnutheme_WAR_ntnutheme& languageId=en_GB& b=7110& com_li
feray_journal_content_web_portlet_JournalContentPortlet_INSTANCE_E755:%2Fcss%2Fm
ain.css&com_liferay_portal_search_web_search_bar_portlet_SearchBarPortlet_IN
STANCE_templateSearch:%2Fsearch%2Fbar%2Fcss%2Fmain.css&com_liferay_product_n
avigation_product_menu_web_portlet_ProductMenuPortlet:%2Fcss%2Fmain.css&com_
liferay_site_navigation_menu_web_portlet_SiteNavigationMenuPortlet_INSTANCE_plid
_620363:%2Fcss%2Fmain.css&t=1642170190000" id="1aa7fff2" rel="stylesheet"
type="text/css"/>
<script data-senna-track="temporary" type="text/javascript">
       // <! [CDATA [
               var Liferay = Liferay || {};
               Liferay.Browser = {
                       acceptsGzip: function() {
                               return true;
                       },
                       getMajorVersion: function() {
                               return 97.0;
                       },
                       getRevision: function() {
                               return '537.36';
                       },
                       getVersion: function() {
                               return '97.0';
                       },
                       isAir: function() {
                               return false;
                       },
                       isChrome: function() {
                               return true:
                       },
                       isEdge: function() {
                               return false;
```

```
},
        isFirefox: function() {
                return false;
        },
        isGecko: function() {
                return true;
        },
        isIe: function() {
                return false;
        },
        isIphone: function() {
                return false;
        },
        isLinux: function() {
                return false;
        },
        isMac: function() {
                return false;
        },
        isMobile: function() {
                return false;
        },
        isMozilla: function() {
                return false;
        },
        isOpera: function() {
                return false;
        },
        isRtf: function() {
                return true;
        },
        isSafari: function() {
                return true;
        },
        isSun: function() {
                return false;
        },
        isWebKit: function() {
                return true;
        },
        isWindows: function() {
                return true;
        }
};
Liferay.Data = Liferay.Data || {};
```

```
Liferay.Data.ICONS_INLINE_SVG = true;
                Liferay.Data.NAV_SELECTOR = '#navigation';
                Liferay.Data.NAV_SELECTOR_MOBILE = '#navigationCollapse';
                Liferay.Data.isCustomizationView = function() {
                        return false;
                };
                Liferay.Data.notices = [
                        null
                ];
                Liferay.PortletKeys = {
                        DOCUMENT_LIBRARY:
'com_liferay_document_library_web_portlet_DLPortlet',
                        DYNAMIC_DATA_MAPPING:
'com_liferay_dynamic_data_mapping_web_portlet_DDMPortlet',
                        ITEM SELECTOR:
'com_liferay_item_selector_web_portlet_ItemSelectorPortlet'
                }:
                Liferay.PropsValues = {
                        JAVASCRIPT_SINGLE_PAGE_APPLICATION_TIMEOUT: 0,
                        NTLM_AUTH_ENABLED: false,
                        UPLOAD_SERVLET_REQUEST_IMPL_MAX_SIZE: 90085760000
                };
                Liferay.ThemeDisplay = {
                                getLayoutId: function() {
                                        return '3';
                                },
                                getLayoutRelativeControlPanelURL: function() {
                                        return
'/group/guest/~/control_panel/manage';
```

```
},
                                getLayoutRelativeURL: function() {
                                        return '/faculties';
                                },
                                getLayoutURL: function() {
                                        return 'https://www.ntnu.edu/faculties';
                                },
                                getParentLayoutId: function() {
                                        return '2';
                                },
                                isControlPanel: function() {
                                        return false;
                                },
                                isPrivateLayout: function() {
                                        return 'false';
                                },
                                isVirtualLayout: function() {
                                        return false;
                                },
                        getBCP47LanguageId: function() {
                                return 'en-GB';
                        },
                        getCanonicalURL: function() {
                                return
'https\x3a\x2f\x2fwww\x2entnu\x2eedu\x2ffaculties';
                        getCDNBaseURL: function() {
                                return 'https://www.ntnu.edu';
                        },
                        getCDNDynamicResourcesHost: function() {
                                return '';
                        },
                        getCDNHost: function() {
                                return '';
                        },
                        getCompanyGroupId: function() {
                                return '4941134';
                        },
                        getCompanyId: function() {
                                return '139202';
                        },
```

```
getDefaultLanguageId: function() {
                                return 'en_GB';
                        },
                        getDoAsUserIdEncoded: function() {
                                return '';
                        },
                        getLanguageId: function() {
                                return 'en_GB';
                        getParentGroupId: function() {
                                return '139226';
                        getPathContext: function() {
                                return '';
                        getPathImage: function() {
                                return '/image';
                        },
                        getPathJavaScript: function() {
                                return '/o/frontend-js-web';
                        },
                        getPathMain: function() {
                                return '/c';
                        },
                        getPathThemeImages: function() {
                                return 'https://www.ntnu.edu/o/ntnu-
theme/images';
                        },
                        getPathThemeRoot: function() {
                                return '/o/ntnu-theme';
                        },
                        getPlid: function() {
                                return '620363';
                        },
                        getPortalURL: function() {
                                return 'https://www.ntnu.edu';
                        },
                        getScopeGroupId: function() {
                                return '139226';
                        },
                        getScopeGroupIdOrLiveGroupId: function() {
                                return '139226';
                        getSessionId: function() {
                                return '';
                        getSiteAdminURL: function() {
```

```
return 'https://www.ntnu.edu/group/guest/~/contr
ol_panel/manage?p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view';
                        },
                        getSiteGroupId: function() {
                                return '139226';
                        },
                        getURLControlPanel: function() {
                                 return
'/group/control_panel?refererPlid=620363';
                        getURLHome: function() {
                                return
'https\x3a\x2f\x2fwww\x2entnu\x2eedu\x2fweb\x2fguest';
                        getUserEmailAddress: function() {
                                return '';
                        },
                        getUserId: function() {
                                return '139205';
                        },
                        getUserName: function() {
                                return '';
                        isAddSessionIdToURL: function() {
                                return false;
                        isFreeformLayout: function() {
                                return false;
                        },
                        isImpersonated: function() {
                                return false;
                        },
                        isSignedIn: function() {
                                return false;
                        },
                        isStateExclusive: function() {
                                return false;
                        },
                        isStateMaximized: function() {
                                return false;
                        },
                        isStatePopUp: function() {
                                return false;
                        }
                };
                var themeDisplay = Liferay.ThemeDisplay;
```

```
Liferay.AUI = {
```

```
getAvailableLangPath: function() {
                                                                                                                     return 'available_languages.jsp?browserId=other&
the \verb|meId=nt| nut he \verb|me_WAR_nt| nut he \verb|me\&colorSchemeId=01\&minifierType=js\&languageId=en_G| and the median of the median 
B&b=7110&t=1642173725210';
                                                                                        getCombine: function() {
                                                                                                                     return true;
                                                                                        },
                                                                                        getComboPath: function() {
                                                                                                                     return '/combo/?browserId=other&minifierType=&la
nguageId=en_GB&b=7110&t=1642173727277&';
                                                                                        },
                                                                                        getDateFormat: function() {
                                                                                                                     return '%d/%m/%Y';
                                                                                        },
                                                                                        getEditorCKEditorPath: function() {
                                                                                                                     return '/o/frontend-editor-ckeditor-web';
                                                                                        },
                                                                                        getFilter: function() {
                                                                                                                     var filter = 'raw';
                                                                                                                                                                                filter = 'min';
                                                                                                                     return filter;
                                                                                        },
                                                                                        getFilterConfig: function() {
                                                                                                                     var instance = this;
                                                                                                                     var filterConfig = null;
                                                                                                                      if (!instance.getCombine()) {
                                                                                                                                                   filterConfig = {
                                                                                                                                                                                replaceStr: '.js' +
instance.getStaticResourceURLParams(),
                                                                                                                                                                                searchExp: '\\.js$'
                                                                                                                                                  };
                                                                                                                     }
```

```
return filterConfig;
                       },
                       getJavaScriptRootPath: function() {
                              return '/o/frontend-js-web';
                       },
                       getLangPath: function() {
                               return 'aui_lang.jsp?browserId=other&themeId=ntn
utheme_WAR_ntnutheme&colorSchemeId=01&minifierType=js&languageId=en_GB&b=7110&t=
1642173727277';
                       getPortletRootPath: function() {
                               return '/html/portlet';
                       },
                       getStaticResourceURLParams: function() {
                               return
'?browserId=other&minifierType=&languageId=en GB&b=7110&t=1642173727277';
                       }
               };
               Liferay.authToken = 'lPsnf2Q6';
               Liferay.currentURL = '\x2ffaculties';
               Liferay.currentURLEncoded = '\x252Ffaculties';
       // 11>
</script>
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        }
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// <! [CDATA [
Liferay.on(
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               if (window.Analytics) {
                       Analytics.send(
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                                'Form',
                               {
                                       fieldName: event.fieldName,
                                       focusDuration: event.focusDuration,
                                       formId: event.formId,
                                       page: event.page - 1
                               }
                       );
               }
       }
);
Liferay.on(
```

```
'ddmFieldFocus', function(event) {
                if (window.Analytics) {
                         Analytics.send(
                                 'fieldFocused',
                                 'Form',
                                 {
                                         fieldName: event.fieldName,
                                         formId: event.formId,
                                         page: event.page - 1
                                 }
                         );
                }
        }
);
Liferay.on(
        'ddmFormPageShow', function(event) {
                if (window.Analytics) {
                         Analytics.send(
                                 'pageViewed',
                                 'Form',
                                 {
                                         formId: event.formId,
                                         page: event.page,
                                         title: event.title
                                 }
                         );
                }
        }
);
Liferay.on(
        'ddmFormSubmit', function(event) {
                if (window.Analytics) {
                         Analytics.send(
                                 'formSubmitted',
                                 'Form',
                                 {
                                         formId: event.formId
                                 }
                         );
                }
        }
);
Liferay.on(
        'ddmFormView', function(event) {
```

```
if (window.Analytics) {
                       Analytics.send(
                               'formViewed',
                               'Form',
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                                      title: event.title
                               }
                       );
               }
       }
);
// ]]>
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<a href="#main-content">Skip to Content</a>
</nav>
<div class="mb-0 pt-0" id="wrapper">
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white light bgh-s" id="navigation">
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</a>
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<span class="search-toggler-icon"></span>
</button>
<button aria-controls="navigationCollapse" aria-expanded="false" aria-</pre>
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0-206.333-206.333-206.333-206.333-11.059-11.058-28.973-11.058-39.999 0-11.059
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8.272z"></path>
</svg></span> </span>
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tabindex="-1">Master's programmes in English</a>
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role="menuitem" tabindex="-1">For exchange students</a>
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id="gmenuitem_1_3_All_programmes_of_study" role="presentation">
<a aria-labelledby="gmenuitem_1_3_All_programmes_of_study" class="dropdown-item"</pre>
href="/studies/allstudies" id="yui_patched_v3_18_1_1_1642499923715_121"
role="menuitem" tabindex="-1">All programmes of study</a>
<a aria-labelledby="gmenuitem_1_4_Courses" class="dropdown-item"</pre>
href="/studies/courses" id="yui patched v3 18 1 1 1642499923715 123"
role="menuitem" tabindex="-1">Courses</a>
id="gmenuitem_1_5_Financing" role="presentation">
<a aria-labelledby="gmenuitem_1_5_Financing" class="dropdown-item"</pre>
href="/studies/financing-and-scholarships"
id="yui_patched_v3_18_1_1_1642499923715_125" role="menuitem"
tabindex="-1">Financing</a>
```

```
id="gmenuitem_1_6_Language_requirements" role="presentation">
<a aria-labelledby="gmenuitem 1 6 Language requirements" class="dropdown-item"</pre>
href="/studies/langcourses" id="yui_patched_v3_18_1_1_1642499923715_127"
role="menuitem" tabindex="-1">Language requirements</a>
<a aria-labelledby="gmenuitem_1_7_Application_process" class="dropdown-item"</pre>
href="/studies/application" id="yui_patched_v3_18_1_1_1642499923715_129"
role="menuitem" tabindex="-1">Application process</a>
id="gmenuitem_1_8_Academic_calendar" role="presentation">
<a aria-labelledby="gmenuitem_1_8_Academic_calendar" class="dropdown-item"</pre>
href="/studies/academiccalendar" id="yui_patched_v3_18_1_1_1642499923715_131"
role="menuitem" tabindex="-1">Academic calendar</a>
<a aria-labelledby="gmenuitem_1_10_FAQ" class="dropdown-item"</pre>
href="/studies/faq" id="yui_patched_v3_18_1_1_1642499923715_133" role="menuitem"
tabindex="-1">FAQ</a>
role="presentation">
<a aria-haspopup="true" aria-labelledby="gmenuitem_0_1" class="nav-link text-</pre>
truncate dropdown-toggle" data-target="#" data-toggle="dropdown"
href="/research" id="yui_patched_v3_18_1_1_1642499923715_135" role="menuitem"
tabindex="-1">
<span class="text-truncate">Research and innovation
                                                                                                              <span
class="lfr-nav-child-toggle">
angle-down" focusable="false" viewbox="0 0 512 512">
<path class="lexicon-icon-outline" d="M256 384c6.936-0.22 13.81-2.973</pre>
19.111-8.2721227.221-227.221c11.058-11.026 11.058-28.941
0-39.999-11.026-11.058-28.94-11.058-39.999 01-206.333 206.333c0
0-206.333-206.333-206.333-206.333-11.059-11.058-28.973-11.058-39.999\ 0-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.05
11.058-11.059 28.972 0 39.9991227.221 227.221c5.3 5.3 12.174 8.053 19.111
8.272z"></path>
</svg></span> </span>
</span>
</a>
<a aria-labelledby="gmenuitem_1_0_NTNU_research" class="dropdown-item"</pre>
href="/research" id="yui_patched_v3_18_1_1_1642499923715_137" role="menuitem"
tabindex="-1">NTNU research</a>
```

```
id="gmenuitem_1_1_Research_excellence" role="presentation">
<a aria-labelledby="gmenuitem 1 1 Research excellence" class="dropdown-item"</pre>
href="/research/research-excellence"
id="yui_patched_v3_18_1_1_1642499923715_139" role="menuitem"
tabindex="-1">Research excellence</a>
id="gmenuitem_1_2_Strategic_research_areas" role="presentation">
<a aria-labelledby="gmenuitem_1_2_Strategic_research_areas" class="dropdown-</pre>
item" href="/research/strategicareas"
id="yui_patched_v3_18_1_1_1642499923715_141" role="menuitem"
tabindex="-1">Strategic research areas</a>
id="gmenuitem_1_3_Innovation_resources" role="presentation">
<a aria-labelledby="gmenuitem_1_3_Innovation_resources" class="dropdown-item"</pre>
href="/innovation-resources" id="yui_patched_v3_18_1_1_1642499923715_143"
role="menuitem" tabindex="-1">Innovation resources</a>
id="gmenuitem_1_4_Experts" role="presentation">
<a aria-labelledby="gmenuitem_1_4_Experts" class="dropdown-item"</pre>
href="/research/experts" id="yui_patched_v3_18_1_1_1642499923715_145"
role="menuitem" tabindex="-1">Experts</a>
<a aria-labelledby="gmenuitem 1 5 PhD opportunities" class="dropdown-item"</pre>
href="/phd" id="yui_patched_v3_18_1_1_1642499923715_147" role="menuitem"
tabindex="-1">PhD opportunities</a>
role="presentation">
<a aria-haspopup="true" aria-labelledby="gmenuitem_0_1" class="nav-link text-</pre>
truncate dropdown-toggle" data-target="#" data-toggle="dropdown" href="/living-
in-trondheim-landing" id="yui_patched_v3_18_1_1_1642499923715_149"
role="menuitem" tabindex="-1">
<span class="text-truncate">Life and housing
                                                                                                       <span class="lfr-nav-</pre>
child-toggle">
<span id="uvlz___"><svg aria-hidden="true" class="lexicon-icon lexicon-icon-</pre>
angle-down" focusable="false" viewbox="0 0 512 512">
<path class="lexicon-icon-outline" d="M256 384c6.936-0.22 13.81-2.973</pre>
19.111-8.2721227.221-227.221c11.058-11.026 11.058-28.941
0-39.999-11.026-11.058-28.94-11.058-39.999 01-206.333 206.333c0
0-206.333-206.333-206.333-206.333-11.059-11.058-28.973-11.058-39.999 \  \, 0-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-1
11.058-11.059 28.972 0 39.9991227.221 227.221c5.3 5.3 12.174 8.053 19.111
8.272z"></path>
</svg></span> </span>
</span>
```

```
</a>
id="gmenuitem_1_0_Student_in_Trondheim" role="presentation">
<a aria-labelledby="gmenuitem_1_0_Student_in_Trondheim" class="dropdown-item"</pre>
href="/lifeandhousing/trondheim" id="yui_patched_v3_18_1_1_1642499923715_151"
role="menuitem" tabindex="-1">Student in Trondheim</a>
<a aria-labelledby="gmenuitem 1 1 Student in Gjøvik" class="dropdown-item"</pre>
href="/lifeandhousing/gjovik" id="yui_patched_v3_18_1_1_1642499923715_153"
role="menuitem" tabindex="-1">Student in Gjøvik</a>
id="gmenuitem_1_3_Student_in_Ålesund" role="presentation">
<a aria-labelledby="gmenuitem_1_3_Student_in_Ålesund" class="dropdown-item"</pre>
href="/lifeandhousing/alesund" id="yui_patched_v3_18_1_1_1642499923715_155"
role="menuitem" tabindex="-1">Student in Alesund</a>
<a aria-labelledby="gmenuitem_1_4_For_researchers" class="dropdown-item"</pre>
href="/nirs" id="yui_patched_v3_18_1_1_1642499923715_157" role="menuitem"
tabindex="-1">For researchers</a>
<a aria-labelledby="gmenuitem 1 5 Life and housing" class="dropdown-item"</pre>
href="/lifeandhousing" id="yui_patched_v3_18_1_1_1642499923715_159"
role="menuitem" tabindex="-1">Life and housing</a>
role="presentation">
<a aria-haspopup="true" aria-labelledby="gmenuitem_0_2" class="nav-link text-</pre>
truncate dropdown-toggle" data-target="#" data-toggle="dropdown" href="/landing-
about-ntnu" id="yui_patched_v3_18_1_1_1642499923715_161" role="menuitem"
tabindex="-1">
<span class="text-truncate">About NTNU
                                                                                        <span class="lfr-nav-child-</pre>
toggle">
<span id="ored____"><svg aria-hidden="true" class="lexicon-icon lexicon-icon-</pre>
angle-down" focusable="false" viewbox="0 0 512 512">
<path class="lexicon-icon-outline" d="M256 384c6.936-0.22 13.81-2.973</pre>
19.111-8.2721227.221-227.221c11.058-11.026 11.058-28.941
0-39.999-11.026-11.058-28.94-11.058-39.999 01-206.333 206.333c0
0-206.333-206.333-206.333-206.333-11.059-11.058-28.973-11.058-39.999\ 0-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.059-11.05
11.058-11.059 28.972 0 39.9991227.221 227.221c5.3 5.3 12.174 8.053 19.111
8.272z"></path>
</svg></span> </span>
</span>
```

```
</a>
<a aria-labelledby="gmenuitem 1 0 Contact us" class="dropdown-item"</pre>
href="/contact" id="yui_patched_v3_18_1_1_1642499923715_163" role="menuitem"
tabindex="-1">Contact us</a>
id="gmenuitem_1_1_Faculties_and_departments" role="presentation">
<a aria-labelledby="gmenuitem 1 1 Faculties and departments" class="dropdown-</pre>
item" href="/faculties" id="yui_patched_v3_18_1_1_1642499923715_165"
role="menuitem" tabindex="-1">Faculties and departments</a>
<a aria-labelledby="gmenuitem_1_3_Libraries" class="dropdown-item" href="/ub"</pre>
id="yui_patched_v3_18_1_1_1642499923715_167" role="menuitem"
tabindex="-1">Libraries</a>
id="gmenuitem_1_4 International_researcher_support" role="presentation">
<a aria-labelledby="gmenuitem_1_4 International_researcher_support"</pre>
class="dropdown-item" href="/nirs" id="yui_patched_v3_18_1_1_1642499923715_169"
role="menuitem" tabindex="-1">International researcher support</a>
<a aria-labelledby="gmenuitem 1 5 Vacancies" class="dropdown-item"</pre>
href="/vacancies" id="yui_patched_v3_18_1_1_1642499923715_171" role="menuitem"
tabindex="-1">Vacancies</a>
<a aria-labelledby="gmenuitem_1_6_About_NTNU" class="dropdown-item"</pre>
href="/about" id="yui_patched_v3_18_1_1_1642499923715_173" role="menuitem"
tabindex="-1">About NTNU</a>
<a aria-labelledby="gmenuitem_1_7_Maps" class="dropdown-item" href="/map"</pre>
id="yui_patched_v3_18_1_1_1642499923715_175" role="menuitem"
tabindex="-1">Maps</a>
</div>
<div aria-expanded="false" class="collapse navbar-collapse justify-content-end"</pre>
id="searchCollapse">
<div class="justify-content-end navbar-form my-2 my-md-0" role="search">
</div>
<div class="justify-content-end navbar-form my-2 my-md-0" role="search">
<form action="/sok" class="col-12" method="get">
```

```
<fieldset class="fieldset">
<div class="input-group search-bar search-bar-simple">
<div class="input-group-item search-bar-keywords-input-wrapper">
<input class="form-control input-group-inset input-group-inset-after search-bar-</pre>
keywords-input" id="ntnu-search" name="query" placeholder="Search..."
title="Search" type="text" value=""/>
<div class="input-group-inset-item input-group-inset-item-after search-bar-</pre>
search-button-wrapper">
<button aria-label="Submit" class="btn search-bar-search-button btn-unstyled"</pre>
id="ntnu-search-act" type="submit">
<svg class="lexicon-icon lexicon-icon-search" focusable="false"</pre>
role="presentation" viewbox="0 0 512 512">
<path class="lexicon-icon-outline" d="M503.254</pre>
467.8611-133.645-133.645c27.671-35.13 44.344-79.327 44.344-127.415
0-113.784-92.578-206.362-206.362-206.362s-206.36292.578-206.362206.36292.578
206.362 206.362 206.362c47.268 0 90.735-16.146 125.572-42.9691133.851
133.851c5.002 5.002 11.554 7.488 18.106 7.488s13.104-2.486
18.106-7.488c10.004-10.003 10.004-26.209 0.029-36.183zM52.446 206.801c0-85.558
69.616-155.173 155.173-155.173s155.174 69.616 155.174 155.173-69.616
155.173-155.173 155.173-155.173-69.616-155.173-155.173z"></path>
</svg>
</button>
</div>
</div>
</div>
</fieldset>
</form>
</div>
</div>
</div>
</div>
<nav id="breadcrumbs">
<div class="container">
<div class="d-flex flex-column flex-sm-row align-items-stretch container">
<nav class="ntnu-crumbs flex-grow w-100">
<div class="portlet-boundary portlet-</pre>
boundary_ntnubreadcrumbportlet_WAR_ntnubreadcrumbportlet_ portlet-static
portlet-static-end portlet-barebone"
id="p p id ntnubreadcrumbportlet WAR ntnubreadcrumbportlet INSTANCE abcd ">
id="p ntnubreadcrumbportlet WAR ntnubreadcrumbportlet INSTANCE abcd"></span>
<section class="portlet"</pre>
id="portlet_ntnubreadcrumbportlet_WAR_ntnubreadcrumbportlet_INSTANCE_abcd">
<div class="portlet-content">
<div class="portlet-content-container">
<div class="portlet-body">
```

```
<a class="breadcrumb-link" href="/" title="Home">
<span class="breadcrumb-text-truncate">Home</span>
</a>
<span class="breadcrumb-text-truncate" title="Faculties and</pre>
departments">Faculties and departments</span>
</div>
</div>
</div>
</section>
</div>
</nav>
<div class="text-nowrap ntnu-langswitch">
<div class="portlet-boundary portlet-</pre>
boundary_languageportlet_WAR_languageportlet_ portlet-static portlet-static-end
portlet-borderless"
id="p_p_id_languageportlet_WAR_languageportlet_INSTANCE_abcd_">
<span id="p_languageportlet_WAR_languageportlet_INSTANCE_abcd"></span>
<section class="portlet"</pre>
id="portlet languageportlet WAR languageportlet INSTANCE abcd">
<div class="portlet-content">
<div class="autofit-float autofit-row portlet-header">
<div class="autofit-col autofit-col-expand">
<h2 class="portlet-title-text">Språkvelger</h2>
</div>
</div>
<div class="portlet-content-container">
<div class="portlet-body">
<div id="language-portlet-portlet" style="font-size:0.875rem;padding:0.75rem</pre>
0.125rem;">
<i class="fal fa-globe text-dark"></i>
<a class="text-dark" href="https://www.ntnu.no/fakulteter" title="Norsk versjon</pre>
av siden: https://www.ntnu.no/fakulteter">Norsk</a>
</div>
</div>
</div>
</div>
</section>
</div>
</div>
</div>
</div>
</nav>
```

```
</header>
<section class="" id="content">
<h1 class="sr-only">Faculties and departments</h1>
<div class="ntnucolumns columns-3 pt-2" id="main-content" role="main">
<div class="container">
<div class="portlet-layout row menutogglerow">
<div class="portlet-column portlet-column-first col-md-3" id="column-menu">
<div id="ntnusidemenu">
<div class="hide" id="smclosebutton">
<a href="javascript:void(0)">x</a>
</div>
<div class="portlet-boundary portlet-</pre>
boundary_com_liferay_site_navigation_menu_web_portlet_SiteNavigationMenuPortlet_
portlet-static portlet-static-end portlet-barebone portlet-navigation" id="p_p_i
d com liferay site navigation menu web portlet SiteNavigationMenuPortlet INSTANC
E_plid_620363_">
<span id="p com liferay site navigation menu web portlet SiteNavigationMenuPortl</pre>
et_INSTANCE_plid_620363"></span>
<section class="portlet" id="portlet_com_liferay_site_navigation_menu_web_portle</pre>
t_SiteNavigationMenuPortlet_INSTANCE_plid_620363">
<div class="portlet-content">
<div class="portlet-content-container">
<div class="portlet-body">
<div aria-label="Site Pages" class="list-menu">
<a class="lfr-nav-item open" href="/about">About NTNU</a>
<a class="lfr-nav-item open selected active" href="/faculties">Faculties and
departments</a>
<a class="lfr-nav-item" href="/about-ntnu/campuses">Campuses</a>
<a class="lfr-nav-item" href="/organization">Organization</a>
<a class="lfr-nav-item" href="/facts">Facts and figures</a>
<a class="lfr-nav-item" href="/ub">Libraries</a>
<a class="lfr-nav-item" href="/contact">Contact</a>
```

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<a class="lfr-nav-item" href="/map">Maps and rooms</a>
<a class="lfr-nav-item" href="/vacancies">Vacancies</a>
</111>
<a class="lfr-nav-item" href="/photo-library">NTNU Photo Library</a>
</div>
</div>
</div>
</div>
</section>
</div>
</div>
<div class="portlet-dropzone empty portlet-column-content portlet-column-</pre>
content-first" id="layout-column_column-menu"></div>
</div>
<div class="portlet-column col-md-6" id="column-3">
<a aria-hidden="true" class="hide" href="javascript:void(0)"</pre>
id="smopenbutton">MENU <i class="far fa-chevron-right"></i></a>
<div class="portlet-dropzone portlet-column-content" id="layout-</pre>
column column-3">
<div class="portlet-boundary portlet-</pre>
boundary_com_liferay_journal_content_web_portlet_JournalContentPortlet_ portlet-
static portlet-static-end portlet-borderless portlet-journal-content" id="p_p_id
_com_liferay_journal_content_web_portlet_JournalContentPortlet_INSTANCE_E755_">
<span id="p_com_liferay_journal_content_web_portlet_JournalContentPortlet_INSTAN</pre>
CE E755"></span>
<section class="portlet" id="portlet_com_liferay_journal_content_web_portlet_Jou</pre>
rnalContentPortlet_INSTANCE_E755">
<div class="portlet-content">
<div class="autofit-float autofit-row portlet-header">
<div class="autofit-col autofit-col-expand">
<h2 class="portlet-title-text">Faculties and departments at NTNU</h2>
</div>
<div class="autofit-col autofit-col-end">
<div class="autofit-section">
<div class="visible-interaction">
</div>
</div>
</div>
</div>
```

```
<div class="portlet-content-container">
<div class="portlet-body">
<div class="text-right user-tool-asset-addon-entries">
</div>
<div class="clearfix journal-content-article" data-analytics-asset-id="30314"</pre>
data-analytics-asset-title="Faculties and departments at NTNU" data-analytics-
asset-type="web-content">
<div class="normal">
<h1>Faculties and departments at NTNU</h1>
<div class="innholdstekst"><a href="https://www.ntnu.edu/organizational-</pre>
chart">>> Organizational chart</a>
<h2><a href="https://www.ntnu.edu/ad">Faculty of Architecture and Design
(AD)</a></h2>
ul>
<a href="https://www.ntnu.edu/kit">Trondheim Academy of Fine Art</a>
<a href="https://www.ntnu.edu/design">Department of Design</a>
<a href="https://www.ntnu.edu/iat">Department of Architecture and
Technology</a>
<a href="https://www.ntnu.edu/iap">Department of Architecture and
Planning</a>
<h2><a href="https://www.ntnu.edu/hf">Faculty of Humanities (HF)</a></h2>
<a href="https://www.ntnu.edu/ifr">Department of Philosophy and Religious
Studies</a>
<a href="https://www.ntnu.edu/ihk">Department of Historical and Classical
Studies</a>
<a href="https://www.ntnu.edu/ims">Department of Modern History and
Society</a>
<a href="https://www.ntnu.edu/ikm">Department of Art and Media
Studies</a>
<a href="https://www.ntnu.edu/music">Department of Music</a>
<a href="https://www.ntnu.edu/isl">Department of Language and
Literature</a>
<a href="https://www.ntnu.edu/kult">Department of Interdisciplinary Studies
of Culture</a>
</111>
<h2><a href="https://www.ntnu.edu/ie">Faculty of Information Technology and
Electrical Engineering (IE)</a></h2>
ul>
<a href="https://www.ntnu.edu/idi">Department of Computer Science</a>
<a href="https://www.ntnu.edu/ies">Department of Electronic Systems</a>
<a href="https://www.ntnu.edu/elkraft">Department of Electric Power
Engineering</a>
<a href="https://www.ntnu.edu/iir">Department of ICT and Natural
Sciences</a>
<a href="https://www.ntnu.edu/iik">Department of Information Security and
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Communication Technology</a>
<a href="https://www.ntnu.edu/imf">Department of Mathematical
Sciences</a>
<a href="https://www.ntnu.edu/itk">Department of Engineering
Cybernetics</a>
<h2><a href="https://www.ntnu.edu/iv">Faculty of Engineering (IV)</a></h2>
ul>
<a href="https://www.ntnu.edu/ept">Department of Energy and Process
Engineering</a>
<a href="https://www.ntnu.edu/imt">Department of Marine Technology</a>
<a href="https://www.ntnu.edu/igp">Department of Geoscience and
Petroleum</a>
<a href="https://www.ntnu.edu/ibm">Department of Civil and Environmental
Engineering</a>
<a href="https://www.ntnu.edu/kt">Department of Structural
Engineering</a>
<a href="https://www.ntnu.edu/mtp">Department of Mechanical and Industrial
Engineering</a>
<a href="https://www.ntnu.edu/ihb">Department of Ocean Operations and Civil
Engineering</a>
<a href="https://www.ntnu.edu/ivb">Department of Manufacturing and Civil
Engineering</a>
<h2><a href="https://www.ntnu.edu/mh">Faculty of Medicine and Health Sciences
(MH) < /a > < /h2 >
<111>
<a href="https://www.ntnu.edu/ihg">Department of Health Sciences in
Gjøvik</a>
<a href="https://www.ntnu.edu/iha">Department of Health Sciences in
Ålesund</a>
<a href="https://www.ntnu.edu/kavli">Kavli Institute for Systems
Neuroscience</a>
<a href="https://www.ntnu.edu/ikom">Department of Clinical and Molecular
Medicine</a>
<a href="https://www.ntnu.edu/inb">Department of Neuromedicine and Movement
Science</a>
<a href="https://www.ntnu.edu/iph">Department of Mental Health</a>
<a href="https://www.ntnu.edu/ism">Department of Public Health and
Nursing</a>
<a href="https://www.ntnu.edu/isb">Department of Circulation and Medical
Imaging</a>
<h2><a href="https://www.ntnu.edu/nv">Faculty of Natural Sciences (NV)</a></h2>
<l
<a href="https://www.ntnu.edu/biology">Department of Biology</a>
<a href="https://www.ntnu.edu/iba">Department of Biological Sciences
```

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Ålesund</a>
<a href="https://www.ntnu.edu/ibt">Department of Biotechnology and Food
Science</a>
<a href="https://www.ntnu.edu/ibf">Department of Biomedical Laboratory
Science</a>
<a href="https://www.ntnu.edu/physics">Department of Physics</a>
<a href="https://www.ntnu.edu/chemistry">Department of Chemistry</a>
<a href="https://www.ntnu.edu/chemeng">Department of Chemical
Engineering</a>
<a href="https://www.ntnu.edu/ima">Department of Materials Science and
Engineering</a>
<h2><a href="https://www.ntnu.edu/su">Faculty of Social and Educational Sciences
(SU)</a></h2>
u1>
<a href="https://www.ntnu.edu/geography">Department of Geography</a>
<a href="https://www.ntnu.edu/ilu">Department of Teacher Education</a>
<a href="https://www.ntnu.edu/ipl">Department of Education and Lifelong
Learning</a>
<a href="https://www.ntnu.edu/isa">Department of Social Work</a>
<a href="https://www.ntnu.edu/iss">Department of Sociology and Political</a>
Science</a>
<a href="https://www.ntnu.edu/psychology">Department of Psychology</a>
<a href="https://www.ntnu.edu/sosant">Department of Social
Anthropology</a>
<h2><a href="https://www.ntnu.edu/ok">Faculty of Economics and Management
(OK) < /a > < /h2 >
ul>
<a href="https://www.ntnu.edu/hhs">NTNU Business School</a>
<a href="https://www.ntnu.edu/iif">Department of International
Business</a>
<a href="https://www.ntnu.edu/iot">Department of Industrial Economics and
Technology Management</a>
<a href="https://www.ntnu.edu/econ">Department of Economics</a>
<h2><a href="https://www.ntnu.edu/museum">NTNU University Museum (VM)</a></h2>
<a href="https://www.ntnu.edu/inh">Department of Natural History</a>
<a href="https://www.ntnu.edu/iak">Department of Archaeology and Cultural
History</a>
</div>
<span class="endretdato text-uppercase text-secondary small pr-2">18 Sep
2020</span>
<span class="clear"></span>
</div>
</div>
```

```
<div class="content-metadata-asset-addon-entries">
</div>
</div>
</div>
</div>
</section>
</div>
</div>
</div>
<div class="portlet-column portlet-column-last col-md-3" id="column-4">
<div class="portlet-dropzone empty portlet-column-content portlet-column-</pre>
content-last" id="layout-column_column-4"></div>
</div>
</div>
</div>
</div>
<div class="portlet-boundary portlet-</pre>
boundary_globalalertportlet_WAR_globalalertportlet_ portlet-static portlet-
static-end portlet-borderless"
id="p_p_id_globalalertportlet_WAR_globalalertportlet_">
<span id="p_globalalertportlet_WAR_globalalertportlet"></span>
</div>
<form action="#" class="hide" id="hrefFm" method="post"</pre>
name="hrefFm"><span></span><input hidden="" type="submit"/></form> </section>
<div id="to-top" style="display: none">
<a href="#top"><i class="fa fa-chevron-circle-up fa-fw fa-4x"></i></a>
</div>
<footer class="bg-dark footer py-4 text-white-50" id="footer"</pre>
role="contentinfo">
<div class="container">
<div class="row">
<div class="col-3"></div>
<div class="col-6 align-self-center text-center mb-4 pb-4">
<img alt="NTNU" src="/o/ntnu-theme/images/logo_ntnu_tag_english.svg"</pre>
style="width:100%;height:auto;"/>
</div>
<div class="col-3"></div>
</div>
<div class="row d-flex justify-content-start justify-content-md-between align-</pre>
items-stretch align-self-stretch flex-wrap">
<div class="footer-info-column mx-2 my-4 flex-grow-1">
<h3>Studies</h3>
<a href="https://www.ntnu.edu/studies/international/master">Master's
programmes in English</a>
<a href="https://www.ntnu.edu/studies/exchange">For exchange
students</a>
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<a href="https://www.ntnu.edu/phd">PhD opportunities</a>
<a href="https://www.ntnu.edu/studies/courses">Courses</a>
<a href="https://www.ntnu.edu/career">Career development</a>
<a href="https://www.ntnu.edu/continuing-education">Continuing
education</a>
<a href="https://www.ntnu.edu/studies/application">Application
process</a>
</div>
<div class="footer-info-column mx-2 my-4 flex-grow-1">
<h3>Contact</h3>
<a href="https://www.ntnu.edu/contact">Contact NTNU</a>
<a href="http://www.ntnu.edu/employees">Employees</a>
<a href="https://www.ntnu.edu/alumni">For alumni</a>
<a href="https://www.ntnu.edu/adm/komm/press_contacts">For press and
media</a>
<a href="https://www.ntnu.edu/nirs">Researcher support</a>
</div>
<div class="footer-info-column mx-2 my-4 flex-grow-1">
<h3>Discover NTNU</h3>
<111>
<a href="https://www.ntnu.edu/research/experts">Experts</a>
<a href="https://www.ntnu.edu/vacancies">Vacancies</a>
<a href="https://www.ntnu.edu/photo-library">Pictures from NTNU</a>
<a href="https://www.ntnu.edu/innovation-resources">Innovation
resources</a>
<a href="https://www.ntnu.edu/gjovik">NTNU in Gjøvik</a>
<a href="https://www.ntnu.edu/trondheim">NTNU in Trondheim</a>
<a href="https://www.ntnu.edu/alesund">NTNU in Ålesund</a>
<a href="https://www.ntnu.edu/map">Maps</a>
</div>
<div class="footer-info-column mx-2 my-4 flex-grow-1">
<h3>About NTNU</h3>
<111>
<a href="https://www.ntnu.edu/strategy">NTNU's strategy</a>
<a href="https://www.ntnu.edu/research/research-excellence">Research
excellence</a>
<a href="https://www.ntnu.edu/research/strategicareas">Strategic research
areas</a>
<a href="https://www.ntnu.edu/organizational-chart">Organizational
chart</a>
<a href="https://www.ntnu.edu/ub">Libraries</a>
<a href="https://www.ntnu.edu/about">About the university</a>
```

```
</div>
<div class="footer-info-column mx-2 my-4 flex-grow-1">
<h3>Services</h3>
ul>
<a href="https://i.ntnu.no/en/ansatt">For employees</a>
<a href="https://i.ntnu.no/en/student">For students</a>
<a href="https://innsida.ntnu.no/blackboard">Blackboard</a>
<a href="https://innsida.ntnu.no/">Intranet</a>
</111>
</div>
</div>
<div class="row mt-2">
<div class="col"><hr/></div>
<div class="col align-self-center text-center text-nowrap text-small">
                    Norwegian University of Science and Technology
            </div>
<div class="col"><hr/></div>
</div>
<div class="row mt-2">
<div class="col-lg text-center text-white mb-4 mb-lg-0 text-small">
<a href="https://www.ntnu.edu/cookies">About cookies</a>
<br/>
<a href="https://www.ntnu.edu/privacy">Privacy policy</a>
<a href="https://www.ntnu.edu/about-this-site">Editoral responsibility</a>
<div class="portlet-boundary portlet-boundary_com_liferay_product_navigation_use</pre>
r_personal_bar_web_portlet_ProductNavigationUserPersonalBarPortlet_ portlet-
static portlet-static-end portlet-borderless portlet-user-personal-bar" id="p_p_
id com liferay product navigation user personal bar web portlet ProductNavigatio
nUserPersonalBarPortlet_">
<span id="p com liferay product navigation user personal bar web portlet Product</pre>
NavigationUserPersonalBarPortlet"></span>
<span class="sign-in text-default" role="presentation">
<a class="sign-in text-default" data-redirect="false"</pre>
href="https://www.ntnu.edu/c/portal/login?p_l_id=620363" id="_com_liferay_produc
t_navigation_user_personal_bar_web_portlet_ProductNavigationUserPersonalBarPortl
et_fehs____"><svg aria-hidden="true" class="lexicon-icon lexicon-icon-user"
focusable="false" viewbox="0 0 512 512">
<path class="lexicon-icon-outline" d="M438.4746,277.9082c-23.4189-26.7637-</pre>
50.791-47.8257-81.3574-62.6011c-1.773-0.8571-3.5547-1.6818-5.34-2.492
       C371.8131,190.2154,384,160.5065,384,128C384,57.4204,326.5791,0,256,0c-
70.5796,0-128,57.4204-128,128
       c0,32.5064,12.1868,62.2153,32.2226,84.8151c-1.7855,0.8102-3.5671,1.6349-
5.3403,2.4921
        c-30.5659,14.7754-57.938,35.8374-
81.3569,62.6011C26.1118,332.0957,0,403.8662,0,480c0,17.6729,14.3271,32,32,32s32-
```

```
14.3271,32-32
        c0-123.5137,86.1309-224,192-
224s192,100.4863,192,224c0,17.6729,14.3271,32,32,32s32-14.3271,32-32
        C512,403.8662,485.8877,332.0957,438.4746,277.9082z
M192,128c0-35.2896,28.7104-64,64-64c35.29,0,64,28.7104,64,64s-28.71,64-64,64
        C220.7104,192,192,163.2896,192,128z"></path>
</svg><span class="taglib-icon-label">Sign In</span></a>
</span>
</div>
</div>
</div>
<div class="row mt-5">
<div class="col text-center text-small">
<a class="trackedlink social-icon" href="https://www.twitter.com/NTNU"</pre>
title="NTNUs offisielle Twitterkonto">
<i aria-hidden="true" class="fab fa-twitter" title="Twitter"></i></i>
</a>
<a class="trackedlink social-icon" href="https://www.facebook.com/ntnu.no"</pre>
title="Facebooksider fra NTNU">
<i aria-hidden="true" class="fab fa-facebook-f" title="Facebook"></i>
</a>
<a class="trackedlink social-icon" href="https://www.instagram.com/ntnu"</pre>
title="NTNUs offisielle Instagramkonto">
<i aria-hidden="true" class="fab fa-instagram" title="Instagram"></i></i>
</a>
<a class="trackedlink social-icon" href="https://www.youtube.com/user/ntnuinfo"</pre>
title="NTNUs Youtubekonto">
<i aria-hidden="true" class="fa fa-play" title="Youtube"></i>
</a>
<a class="trackedlink social-icon" href="https://www.ntnu.no/aktuelt/blogger"</pre>
title="Blogger på NTNU">
<i aria-hidden="true" class="fa fa-rss" title="Blogger"></i></i>
</a>
</div>
</div>
</div>
</footer>
</div>
<script type="text/javascript">
// <! [CDATA [
```

```
Liferay.BrowserSelectors.run();
// ]]>
</script>
<script type="text/javascript">
        // <! [CDATA [
                Liferay.currentURL = '\x2ffaculties';
                Liferay.currentURLEncoded = '\x252Ffaculties';
        // ]]>
</script>
<script type="text/javascript">
                // <! [CDATA[
                // ]]>
        </script>
<script type="text/javascript">
// <! [CDATA [
(function() {var $ = AUI.$;var _ = AUI._;
        var pathnameRegexp = /\documents/(\d+)\/(\d+)\/(\.+?)\/([^&]+)/;
        function handleDownloadClick(event) {
                if (event.target.nodeName.toLowerCase() === 'a') {
                        if (window.Analytics) {
                                var anchor = event.target;
                                var match =
pathnameRegexp.exec(anchor.pathname);
                                 if (match) {
                                         var getParameterValue =
function(parameterName) {
                                                 var result = null;
                                                 var tmp = [];
                                                 anchor
                                                         .search
                                                         .substr(1)
                                                         .split("&")
                                                         .forEach(
```

```
function(item) {
                                                                          tmp =
item.split("=");
                                                                          if
(tmp[0] === parameterName) result = decodeURIComponent(tmp[1]);
                                                         );
                                                 return result;
                                         }
                                         var groupId = match[1];
                                         var fileEntryUUID = match[4];
                                         fetch(
'https://www.ntnu.edu/o/document_library/analytics/resolve_file_entry?groupId='
+ encodeURIComponent(groupId) + '&uuid=' + encodeURIComponent(fileEntryUUID),
                                                 {
                                                         credentials: 'include',
                                                         method: 'GET'
                                                 }
                                         ).then(function(response) {
                                                 return response.json();
                                         }).then(function(response) {
                                                 Analytics.send(
                                                          'documentDownloaded',
                                                          'Document',
                                                          {
                                                                  groupId:
groupId,
                                                                  fileEntryId:
response.fileEntryId,
                                                                  preview:
!!window._com_liferay_document_library_analytics_isViewFileEntry,
                                                                  title:
decodeURIComponent(match[3].replace(/\+/ig, ' ')),
                                                                  version:
getParameterValue('version')
                                                         }
                                                 );
                                         }).catch(function() {
                                                 return;
                                         });
                                }
                        }
                }
        }
```

```
document.body.addEventListener('click', handleDownloadClick);
        var onDestroyPortlet = function() {
                document.body.removeEventListener('click', handleDownloadClick);
                Liferay.detach('destroyPortlet', onDestroyPortlet);
        }
        Liferay.on('destroyPortlet', onDestroyPortlet);
})();(function() {var $ = AUI.$;var _ = AUI._;
        var onVote = function(event) {
                if (window.Analytics) {
                        Analytics.send(
                                'VOTE',
                                'Ratings',
                                {
                                        className: event.className,
                                        classPK: event.classPK,
                                        ratingType: event.ratingType,
                                         score: event.score
                                }
                        );
                }
        }
        var onDestroyPortlet = function() {
                Liferay.detach('ratings:vote', onVote);
                Liferay.detach('destroyPortlet', onDestroyPortlet);
        }
        Liferay.on('ratings:vote', onVote);
        Liferay.on('destroyPortlet', onDestroyPortlet);
})();(function() {var $ = AUI.$;var _ = AUI._;
        var onDestroyPortlet = function() {
                Liferay.detach('messagePosted', onMessagePosted);
                Liferay.detach('destroyPortlet', onDestroyPortlet);
        }
        Liferay.on('destroyPortlet', onDestroyPortlet);
        var onMessagePosted = function(event) {
                if (window.Analytics) {
                        Analytics.send(
                                 'posted',
                                'Comment',
                                {
                                        className: event.className,
                                        classPK: event.classPK,
```

```
commentId: event.commentId,
                                         text: event.text
                                }
                        );
                }
        }
        Liferay.on('messagePosted', onMessagePosted);
})();(function() {var $ = AUI.$;var _ = AUI._;
        var onShare = function(data) {
                if (window.Analytics) {
                        Analytics.send(
                                 'shared',
                                 'SocialBookmarks',
                                 {
                                         className: data.className,
                                         classPK: data.classPK,
                                         type: data.type,
                                         url: data.url
                                }
                        );
                }
        }
        var onDestroyPortlet = function() {
                Liferay.detach('socialBookmarks:share', onShare);
                Liferay.detach('destroyPortlet', onDestroyPortlet);
        }
        Liferay.on('socialBookmarks:share', onShare);
        Liferay.on('destroyPortlet', onDestroyPortlet);
})();
        if (Liferay.Data.ICONS_INLINE_SVG) {
                svg4everybody(
                        {
                                attributeName: 'data-href',
                                polyfill: true,
                                validate: function (src, svg, use) {
                                        return !src || !src.startsWith('#');
                                }
                        }
                );
        }
Liferay.Portlet.register('languageportlet_WAR_languageportlet_INSTANCE_abcd');
```

```
Liferay.Portlet.onLoad(
                {
                        canEditTitle: false,
                        columnPos: 0,
                        isStatic: 'end',
                        namespacedId:
'p_p_id_languageportlet_WAR_languageportlet_INSTANCE_abcd_',
                        portletId:
'languageportlet_WAR_languageportlet_INSTANCE_abcd',
                        refreshURL: '\x2fc\x2fportal\x2frender portlet\x3fp 1 id
\x3d620363\x26p_p_id\x3dlanguageportlet_WAR_languageportlet_INSTANCE_abcd\x26p_p
_lifecycle\x3d0\x26p_t_lifecycle\x3d0\x26p_p_state\x3dnormal\x26p_p_mode\x3dview
\x26p_p_col_id\x3dnull\x26p_p_col_pos\x3dnull\x26p_p_col_count\x3dnull\x26p_p_st
atic\x3d1\x26p_p_isolated\x3d1\x26currentURL\x3d\x252Ffaculties\x26settingsScope
\x3dportletInstance',
                        refreshURLData: {}
                }
       );
                Liferay.Portlet.register('com_liferay_site_navigation_menu_web_p
ortlet_SiteNavigationMenuPortlet_INSTANCE_plid_620363');
       Liferay.Portlet.onLoad(
                {
                        canEditTitle: false,
                        columnPos: 0,
                        isStatic: 'end',
                        namespacedId: 'p_p_id_com_liferay_site_navigation_menu_w
eb_portlet_SiteNavigationMenuPortlet_INSTANCE_plid_620363_',
                        portletId: 'com_liferay_site_navigation_menu_web_portlet
_SiteNavigationMenuPortlet_INSTANCE_plid_620363',
                        refreshURL: '\x2fc\x2fportal\x2frender_portlet\x3fp_l_id
\x3d620363\x26p_p_id\x3dcom_liferay_site_navigation_menu_web_portlet_SiteNavigat
ionMenuPortlet_INSTANCE_plid_620363\x26p_p_lifecycle\x3d0\x26p_t_lifecycle\x3d0\
x26p_p_state\x3dnormal\x26p_p_mode\x3dview\x26p_p_col_id\x3dnull\x26p_p_col_pos\
x3dnull\x26p p col count\x3dnull\x26p p static\x3d1\x26p p isolated\x3d1\x26curr
entURL\x3d\x252Ffaculties\x26settingsScope\x3dportletInstance',
                        refreshURLData: {}
                }
       );
                Liferay.Portlet.register('com_liferay_journal_content_web_portle
t_JournalContentPortlet_INSTANCE_E755');
```

```
Liferay.Portlet.onLoad(
                {
                        canEditTitle: false,
                        columnPos: 0,
                        isStatic: 'end',
                        namespacedId: 'p_p_id_com_liferay_journal_content_web_po
rtlet_JournalContentPortlet_INSTANCE_E755_',
                        portletId:
'com_liferay_journal_content_web_portlet_JournalContentPortlet_INSTANCE_E755',
                        refreshURL: '\x2fc\x2fportal\x2frender_portlet\x3fp_l_id
\x3d620363\x26p_p_id\x3dcom_liferay_journal_content_web_portlet_JournalContentPo
rtlet INSTANCE E755\x26p p lifecycle\x3d0\x26p t lifecycle\x3d0\x26p p state\x3d
normal\x26p_p_mode\x3dview\x26p_p_col_id\x3dcolumn-
3\x26p_p_col_pos\x3d0\x26p_p_col_count\x3d1\x26p_p_isolated\x3d1\x26currentURL\x
3d\x252Ffaculties',
                        refreshURLData: {}
                }
       );
                Liferay.Portlet.register('com_liferay_product_navigation_user_pe
rsonal bar web portlet ProductNavigationUserPersonalBarPortlet');
       Liferay.Portlet.onLoad(
                {
                        canEditTitle: false,
                        columnPos: 0,
                        isStatic: 'end',
                        namespacedId: 'p_p_id_com_liferay_product_navigation_use
r_personal_bar_web_portlet_ProductNavigationUserPersonalBarPortlet_',
                        portletId: 'com_liferay_product_navigation_user_personal
_bar_web_portlet_ProductNavigationUserPersonalBarPortlet',
                        refreshURL: '\x2fc\x2fportal\x2frender_portlet\x3fp_l_id
\x3d620363\x26p_p_id\x3dcom_liferay_product_navigation_user_personal_bar_web_por
tlet_ProductNavigationUserPersonalBarPortlet\x26p_p_lifecycle\x3d0\x26p_t_lifecy
cle\x3d0\x26p p state\x3dnormal\x26p p mode\x3dview\x26p p col id\x3dnull\x26p p
_col_pos\x3dnull\x26p_p_col_count\x3dnull\x26p_p_static\x3d1\x26p_p_isolated\x3d
1\x26currentURL\x3d\x252Ffaculties\x26settingsScope\x3dportletInstance',
                        refreshURLData: {}
                }
       );
```

Liferay.Portlet.register('globalalertportlet\_WAR\_globalalertportlet');

```
Liferay.Portlet.onLoad(
               {
                       canEditTitle: false,
                       columnPos: 0,
                       isStatic: 'end',
                       namespacedId:
'p_p_id_globalalertportlet_WAR_globalalertportlet_',
                       portletId: 'globalalertportlet_WAR_globalalertportlet',
                       refreshURL: '\x2fc\x2fportal\x2frender_portlet\x3fp_l_id
\x3d620363\x26p_p_id\x3dglobalalertportlet_WAR_globalalertportlet\x26p_p_lifecyc
le\x3d0\x26p_t_lifecycle\x3d0\x26p_p_state\x3dnormal\x26p_p_mode\x3dview\x26p_p_
col_id\x3dnull\x26p_p_col_pos\x3dnull\x26p_p_col_count\x3dnull\x26p_p_static\x3d
1\x26p_p_isolated\x3d1\x26currentURL\x3d\x252Ffaculties\x26settingsScope\x3dport
letInstance',
                       refreshURLData: {}
               }
       );
               Liferay.Portlet.register('ntnubreadcrumbportlet_WAR_ntnubreadcru
mbportlet_INSTANCE_abcd');
       Liferay.Portlet.onLoad(
               {
                       canEditTitle: false,
                       columnPos: 0,
                       isStatic: 'end',
                       namespacedId:
'p_p_id_ntnubreadcrumbportlet_WAR_ntnubreadcrumbportlet_INSTANCE_abcd_',
                       portletId:
'ntnubreadcrumbportlet_WAR_ntnubreadcrumbportlet_INSTANCE_abcd',
                       refreshURL: '\x2fc\x2fportal\x2frender_portlet\x3fp_l_id
_abcd\x26p_p_lifecycle\x3d0\x26p_t_lifecycle\x3d0\x26p_p_state\x3dnormal\x26p_p_
mode\x3dview\x26p_p_col_id\x3dnull\x26p_p_col_pos\x3dnull\x26p_p_col_count\x3dnu
11\x26p_p_static\x3d1\x26p_p_isolated\x3d1\x26currentURL\x3d\x252Ffaculties\x26s
ettingsScope\x3dportletInstance',
                       refreshURLData: {}
               }
       );
Liferay.Loader.require('clay-tooltip/src/ClayTooltip',
function(clayTooltipSrcClayTooltip) {
(function(){
var ClayTooltip = clayTooltipSrcClayTooltip;
```

```
(function() {var $ = AUI.$;var _ = AUI._;
        if (!Liferay.Data.LFR_PORTAL_CLAY_TOOLTIP) {
                Liferay.Data.LFR_PORTAL_CLAY_TOOLTIP = ClayTooltip.default.init(
                                 selectors: [
                                         '.management-bar [data-title]:not(.lfr-
portal-tooltip)',
                                         '.management-bar [title]:not(.lfr-
portal-tooltip)'
                                ]
                        }
                );
})();})();
},
function(error) {
console.error(error);
});AUI().use('aui-tooltip', 'liferay-menu', 'liferay-notice', 'aui-base',
'liferay-navigation-interaction', 'liferay-session', 'liferay-poller',
function(A) {(function() {var $ = AUI.$; var _ = AUI._; var navigation =
A.one('#navigationCollapse');
        if (navigation) {
                navigation.plug(Liferay.NavigationInteraction);
        }
        Liferay.Data.NAV_INTERACTION_LIST_SELECTOR = '.navbar-site';
        Liferay.Data.NAV_LIST_SELECTOR = '.navbar-site';
                var navline = document.getElementById("navigation");
        if (navline){
                var sticky = navline.offsetTop;
                function checkSticky() {
                        if (window.pageYOffset > sticky) {
                                navline.classList.add("sticky");
                                document.body.style.paddingTop =
navline.offsetHeight + "px";
                        }
                        else {
                                navline.classList.remove("sticky");
                                 document.body.style.paddingTop = "Opx";
                        }
                window.addEventListener("scroll", checkSticky);
        }
})();(function() {var $ = AUI.$;var _ = AUI._;
        if (A.UA.mobile) {
```

```
Liferay.Util.addInputCancel();
})();(function() {var $ = AUI.$;var _ = AUI._;
        if (!Liferay.Data.LFR_PORTAL_TOOLTIP) {
                var triggerShowEvent = ['mouseenter', 'MSPointerDown',
'touchstart'];
                if (A.UA.ios) {
                        triggerShowEvent = ['touchstart'];
                }
                Liferay.Data.LFR_PORTAL_TOOLTIP = new A.TooltipDelegate(
                                 constrain: true,
                                 opacity: 1,
                                 trigger: '.lfr-portal-tooltip',
                                 triggerHideEvent: ['click', 'mouseleave',
'MSPointerUp', 'touchend'],
                                 triggerShowEvent: triggerShowEvent,
                                 visible: false,
                                 zIndex: Liferay.zIndex.TOOLTIP
                        }
                );
                Liferay.on(
                         'beforeNavigate',
                        function(event) {
Liferay.Data.LFR_PORTAL_TOOLTIP.getTooltip().hide();
                        }
                );
})();(function() {var $ = AUI.$;var _ = AUI._;
        new Liferay.Menu();
        var liferayNotices = Liferay.Data.notices;
        for (var i = 1; i < liferayNotices.length; i++) {</pre>
                new Liferay.Notice(liferayNotices[i]);
        }
})();(function() {var $ = AUI.$;var _ = AUI._;
                        Liferay.Session = new Liferay.SessionBase(
                                         autoExtend: true,
                                         redirectOnExpire: false,
                                         redirectUrl:
```

```
'https\x3a\x2f\x2fwww\x2entnu\x2eedu\x2fweb\x2fguest',
                                        sessionLength: 890,
                                        warningLength: 0
                                }
                        );
                })();});
// 11>
</script>
<script src="https://www.ntnu.edu/o/ntnu-theme/js/main.js?browserId=other&amp;mi</pre>
nifierType=js&languageId=en_GB&b=7110&t=1642170190000"
type="text/javascript"></script>
<script type="text/javascript">
        // <! [CDATA [
                AUI().use(
                        'aui-base',
                        function(A) {
                                var frameElement = window.frameElement;
                                if (frameElement &&
frameElement.getAttribute('id') === 'simulationDeviceIframe') {
                                        A.getBody().addClass('lfr-has-
simulation-panel');
                                }
                        }
                );
        // 11>
</script>
<script>
// gügle analytics
(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
})(window,document,'script','//www.google-analytics.com/analytics.js','ga');
ga('create', 'UA-44249756-1', 'ntnu.edu', { 'cookieFlags': 'SameSite=None;
Secure' });
ga('set', 'anonymizeIp', true);
ga('send', 'pageview');
// gügle trackedlink
document.body.onclick=function(c){c=c||event;var
b=c.target||c.srcElement;if(b.nodeName!="A"){return}if((" "+b.className+"
").replace(/[\t\r\n\f]/g," ").indexOf(" trackedlink ")==-1){return}var
a=b.href;ga("send","event","trackedlink","click",a,{hitCallback:function(){}})};
```

```
(function() {
         var sz = document.createElement("script");
         sz.type = "text/javascript";
         sz.async = true;
         sz.src = "//siteimproveanalytics.com/js/siteanalyze_6000120.js";
         var s = document.getElementsByTagName("script")[0];
         s.parentNode.insertBefore(sz, s);
     })();
     </script>
     <!-- include other additional libs --->
     <script src="https://www.ntnu.edu/o/ntnu-theme/js/jquery.tablesorter.js">
     </script>
     <script src="https://www.ntnu.edu/o/ntnu-theme/js/jquery.slider.js"> </script>
     <div class="" id="yui3-css-stamp" style="position: absolute !important;</pre>
     visibility: hidden !important"></div><div class="tooltip fade clay-tooltip-top"
     role="tooltip" style="display: none;"><div class="arrow"></div><div
     class="tooltip-inner"></div></div></body></html>
[]: departments = dict()
     current head = None
     for data in soup.find(class_="innholdstekst"):
         tag = data.name
         # observe from the page that only "h2" and "ul" are valid root elements
         if tag == "h2":
             current_head = data.text
             print("current head: " + current_head)
         if tag == "ul":
             # get all list elements (note that they are represented as <a>-tags)
             all_deps = data.find_all("a", href=True)
             # parse the departments into a list of name, url
             departments[current_head] = [(dep.text, dep["href"]) for dep in_
      ⇒all deps]
    current head: Faculty of Architecture and Design (AD)
    current head: Faculty of Humanities (HF)
    current head: Faculty of Information Technology and Electrical Engineering (IE)
    current head: Faculty of Engineering (IV)
    current head: Faculty of Medicine and Health Sciences (MH)
    current head: Faculty of Natural Sciences (NV)
    current head: Faculty of Social and Educational Sciences (SU)
    current head: Faculty of Economics and Management (OK)
    current head: NTNU University Museum (VM)
```

// siteimprüve analytics

```
[]: def find_departments(query):
    for faculty in departments.keys():
        if query in faculty:
            return departments[faculty]
    print("No faculty found")

driver = webdriver.Chrome(ChromeDriverManager().install())
department_data = dict()

for department, url in find_departments("IE"):
    driver.get(url)
    content = driver.page_source
    soup = BS(driver.page_source, features="html.parser")

    department_data[department] = soup

driver.quit()
```

```
===== WebDriver manager ======
Current google-chrome version is 97.0.4692
Get LATEST chromedriver version for 97.0.4692 google-chrome
Driver
[C:\Users\mathi\.wdm\drivers\chromedriver\win32\97.0.4692.71\chromedriver.exe]
found in cache
C:\Users\mathi\AppData\Local\Temp\ipykernel_4916\4124469402.py:7:
DeprecationWarning: executable_path has been deprecated, please pass in a
Service object
    driver = webdriver.Chrome(ChromeDriverManager().install())

[]: for dep, soup in department_data.items():
    content = soup.find(class_="innholdstekst")
    print("____")
    print(dep)
```

Department of Computer Science

print(content.get\_text())

The Department of Computer Science (IDI) conducts research in the fields of: artificial intelligence (AI), big data, computer architecture, computer graphics, computer security, databases, human computer interaction (HCI), information systems, operating systems, software engineering, and search-to mention but a few.

IDI is a department at the Faculty of Information Technology and Electrical Engineering.

----

## Department of Electronic Systems

Electronic systems are something we take for granted. We use cell phones, computers, fitness sensors, navigation systems and video games like a natural thing. But without electronic systems, none of the electronics surrounding us would have worked.

Department of Electronic Systems (IES) teaches and do research into further development of this technology. Today's and tomorrow's requirements for advanced communication solutions, energy efficiency, and storage capacity lay the foundation for the Departments work in areas such as microelectronics, wireless technology, navigation, signal and image processing, voice and music technology and nanotechnology.

Department of Electronic Systems is one of eight departments at NTNU Faculty of Information Technology and Electrical Engineering. The department is located at Gløshaugen in Trondheim and at Gjøvik.

----

Department of Electric Power Engineering

At the Department of Electric Power Engineering (IEL), the mission is to contribute to the fundamental and applied knowledge of electric power engineering, and to develop technology and systems for the planning, operation and maintenance of efficient, sustainable energy systems.

Both research and research-based education at the Department cover the broad interdisciplinary aspects of power engineering: generation, transmission, conversion and the use of electric energy, including the accompanying technoeconomic aspects. The Department is one of the seven departments at the Faculty of Information Technology and Electrical Engineering.

----

Department of ICT and Natural Sciences

The Department of ICT and Natural Sciences consists of disciplines within ICT and science. The Department offers three engineering programs at Bachelor's level and one Master's programme.

----

Department of Information Security and Communication Technology

The Department of Information Security and Communication Technology (IIK) conducts international competitive research in several areas of cyber security, information security, communication networks and networked services. The department operates study programs in information security and communication technology at PhD, master and bachelor levels.

We also host the Center for Cyber and Information Security (CCIS), the SFI Norwegian Centre for Cybersecurity in Critical Sectors (NORCICS) and the national Research School of Computer and Information Security (COINS). IIK is a department at the Faculty of Information Technology and Electrical Engineering.

Work with us? See our vacant positions here.

----

## Department of Mathematical Sciences

The Department of Mathematical Sciences has been instrumental in promoting the development of NTNU's program for training of science teachers, and works actively to strengthen the recruitment of students for sciences and technology. By teaching the basic courses in mathematics and statistics, the department is responsible for the quality of education for all engineering students at NTNU. We are part of the Faculty of Information Technology and Electrical Engineering.

----

Department of Engineering Cybernetics

Engineering Cybernetics is the interdisciplinary study and automatic control of dynamic systems like robots, aircraft, marine craft, automotive systems, electrical circuits, biological systems, process plants, etc. and their behavior. Cybernetics is closely related to control theory and systems theory. This includes the principles of feedback control and associated stability analysis.

The Department of Engineering Cybernetics (ITK) is one of 7 departments at Faculty of Information Technology and Electrical Engineering.

[]: